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Walden University

College of Social and Behavioral Sciences

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Maria Perrotta

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2017

Abstract

Anxiety and Healthcare Utilization Among
Mothers of Children With Mental Health Disorders

by

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MEd, Slippery Rock University, 2008

MA, Slippery Rock University, 1998

BS, Slippery Rock University, 1996

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

Walden University

May 2017

Abstract

Anxiety can influence an individual's decision-making process; however, researchers have yet to establish whether anxiety has an impact on the healthcare utilization practices of mothers of children with a mental health diagnosis. The purpose of this study was to assess whether trait anxiety, coping styles, and self-efficacy in mothers of children with a mental health diagnosis affected their healthcare utilization decisions. The transactional model of stress and coping was used to analyze the impact of children with mental health disorders on their caretakers. For this study, a quantitative, cross-sectional research design was employed. The 4 survey tools, administered through SurveyMonkey.com as well as in paper form, included the Brief COPE, State-Trait Anxiety Inventory for Adults (STAID-AD), Health Self-Efficacy Measure, and Healthcare Utilization Questionnaire. Study participants ($N = 152$) were mothers primarily ages 30-49 years (90.8%), Caucasian (57.9%), and high school graduates (63.2%) who were residents of Lawrence County, Pennsylvania. Mothers reported their children were primarily ages 3-6 years (34.2%), Caucasian (49.3%), had a mental health diagnosis, were living in the home, and were currently in mental health treatment. The outcomes of a binary logistic regression found that trait anxiety did not have a significant impact on healthcare utilization. A Sobel test of mediation indicated that coping styles and self-efficacy were not mediating variables between trait anxiety and healthcare utilization. The implications for positive social change as a result of this research may lead to the training of healthcare providers on the specific characteristics of mothers of children with a mental health diagnosis and the development of social policies concerning healthcare utilization.

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Dedication

I would like to devote this study to God and my parents, Mr. and Mrs. Sam and Sara Perrotta, my sister, Ms. Michele Perrotta, and my niece, Mallory. A special thank you is given to Mr. and Mrs. Robert and Carol Packey and Bob Packey for their support and love. Each of you are my world.

I want to also express my heartfelt thanks and unending love to my sons, Sammy and Brady. Thank you for your patience with me while I pursued my dream. Never forget that I did this for you.

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Chapter 1: Introduction to the Study

Introduction

Understanding the healthcare utilization practices of individuals is important in healthcare planning, the creation and implementation of healthcare policies, and healthcare research. Healthcare utilization is the consumption of services or medical supplies and includes the number of office visits made by an individual to a healthcare provider, the number of prescription medications taken, and the days an individual is hospitalized (Roberts, Bergstralh, Schmidt, & Jacobsen, 1996). Individuals use the healthcare system for many reasons, including to cure illnesses, to tend to minor injuries, as a preventative measure against future health problems, to decrease pain, to improve quality of life, and to acquire education on health-related topics (US Department of Health & Human Services, 2006).

Healthcare utilization is a complex pattern of influential factors. According to Geitona, Zavaras, and Kyriopoulos (2007), these factors include the following: “structural and organizational issues of the healthcare sector, the existence of universal healthcare coverage as well as the type of health insurance are factors that determine healthcare utilization” (p. 144). Socioeconomic factors, demographic factors, and epidemiological factors also influence healthcare utilization (Geitona et al., 2007). Researchers have demonstrated that women use healthcare services more often when compared to men (Bertakis, Azari, Helms, Callahan, & Robbins, 2000). The differences in the level of utilization can be attributed to the following: women, compared to men, show more somatic complaints, have more minor illnesses, suffer from a higher level of

nonfatal chronic diseases, and are more apt to be touched by the most common psychological health illnesses (Glaesmer, 2012). As the costs of healthcare services are rising, there is a need to identify the factors that initiate an individual to seek services within the healthcare system (Grey, Knafl, & McCorkle, 2006). More specifically, this study focused on the factors that influence mothers of children with a mental health diagnosis to use healthcare services.

Parenting can be a rewarding and a difficult task, but it poses specific challenges when raising a child with a mental health diagnosis (Busch & Barry, 2007). Caretakers, in particular mothers, often encounter stress when rearing a child with a mental health illness (Bennet, Brewer, & Rankin, 2012; Breslau, Staruch, & Mortimer, 1982). Trying to make sense of the mental health treatment options available for the child may lead to a mother experiencing anxiety.

Mental health diagnoses can affect individuals at any time in their lives; however, children with a mental health diagnosis can pose several challenges for their parents. Parenting entails balancing an individual's personal needs with the needs of a child; however, these needs can be amplified in children with a mental health diagnosis. As with many other aspects of healthcare, more and more responsibility of the child's mental healthcare and treatment is being assumed by the primary caregiver (Grey, 2006). As mothers are primarily the caregivers for their children, they tend to make the majority of the aftercare decisions about their son's or daughter's care, school accommodations, and behavioral intervention techniques (Scharer et al., 2009).

Raising children with a mental health illness can affect the primary caregiver's life in multiple ways including their emotional health. Being a mother of a child with a mental health illness is correlated with higher degrees of depression as well as stress (Scharer et al., 2009). Mothers can feel frustrated, grief, fear, and experience a sense of loss (Richardson, Cobham, McDermott, & Murray, 2013; Wade, 2006). When mothers of mentally ill children feel stressed, they tend to have a more difficult time coping with their child's behavioral outbursts and have an increase in their level of anxiety (Scharer et al., 2009).

Moreover, Avsaroglu (2012) discovered that when measured to mothers of healthy children, mothers of mentally ill children have increased levels of anxiety, more specifically, trait anxiety. Trait anxiety is a generalized level of stress that is indicative of an individual and will differ depending on how the individual chooses to respond to or manage that stress. Researchers have demonstrated that trait anxiety can affect healthcare utilization (Ristvedt & Trinkaus, 2005). Additionally, researchers have shown that one of the most important factors that led to a high level of healthcare utilization was high trait anxiety (Keyzer-Dekker et al., 2011). Cameron, Leventhal, and Love (1998) also found trait anxiety appeared to be correlated with an individual's heightened awareness of illness-related responses that initiate attention to sensations, worry, and preventative coping in response to body cues. Furthermore, individuals with psychiatric diagnoses (including anxiety) are commonly found to have a higher use of healthcare services when compared to mentally healthy individuals (Fischer et al., 2002; Gumakin, Maselko, Bauer, Richman, & Kubansky, 2007). Researchers have indicated a positive

affiliation amid anxiety and healthcare visits as well as the costs associated with healthcare services (Kubzansky, Kubansky, & Maselko, 2004). According to Gumakin et al. (2007), individuals who experienced anxiety were more likely to focus on body cues and to interpret them as medical problems, which in turn, may have initiated them to seek healthcare services. Therefore, focusing on ways to decrease anxiety (such as through the use of effective coping styles) may influence the decision to use healthcare services.

However, researchers who have studied trait anxiety and healthcare utilization focused on adults diagnosed with illnesses that affected their personal physical health rather than the mental health illnesses of their children (Consedine & Butler, 2014; Hutti, Armstrong, & Myers, 2011; Liu et al., 2011; Oldroyd et al., 2013; Rutledge et al., n.d.). Few researchers have focused on the consequences of anxiety among mothers of children with a physical health illness (Darbasie, 2000; Eyigor, Karapolat, Yesil, & Kantar, 2011; Lucia et al., 2003). Even fewer researchers have investigated the influence of anxiety on mothers of children with a mental health diagnosis (Edman, 2004; Liakopoulou et al., 2010). Therefore, Gumankin et al. (2007) pointed out that additional research needs to be conducted to discover what role anxiety plays in healthcare utilization.

The stress, depression, and anxiety related to raising a child with a mental health illness can also take a toll on a parent's physical health. This, in turn, may lead to the development of physical health problems for the parent (Barker, Greenberg, Seltzer, & Almeida, 2012; Scharer, 2009). The ongoing stress of raising a child with a mental health diagnosis can negatively affect a parent's cardiovascular system, immune system, gastrointestinal system, and sleep patterns (Kielcolt-Glaser & Glaser, 1998; Nadkami,

2012). The ongoing stress can also impact a parent's ability to adequately care for himself or herself and lead to poorer health outcomes when compared to parents of healthy children (Hastings, 2002). Therefore, the identification of a parent's physical health needs is important to the functioning of the family unit.

Along with emotional and physical health issues, a parent can also be faced with economic challenges as a result of rearing a child with a mental health diagnosis. A child's mental health disorder can lead to both short-term and long-term financial burdens that may affect the wellbeing of the child, the family unit, and society (Stabile & Allin, 2012). More specifically, the child's symptoms may prevent him or her from attending school on a regular basis or earning a higher education degree; this, in turn, may limit the child's ability to financially contribute to society through the workforce. Parents may also struggle as a result of being unable to maintain steady employment due to the child's mental health diagnosis (for example, having to attend school meetings or psychiatric appointments which would occur during working hours).

Parents may benefit by communicating with healthcare professionals to help identify available resources to alleviate the financial burden of having a child with a mental health diagnosis. Researching different government assistance programs such as Medicaid, Supplemental Security Income (SSI) and the Temporary Assistance for Needy Families (TANF) can help families defray some of the fiscal burden of raising a child with a mental health diagnosis. For instance, Medicaid (the largest payer of mental health services) insures one in five American adults and one in three American children (Medicaid, 2015). SSI, which is focused on helping the blind, older adults, and the

disabled, provides cash assistance to help pay for an individual's basic needs. The SSI program also assists families to cope with the consequences of lost wages as well as medical expenses not covered by Medicaid (DeCesaro & Hemmeter, 2009). Finally, TANF provides ongoing financial assistance until individuals are ready to work (preferably within two years; Schott, 2009). However, not all families qualify for the use of these assistance programs as eligibility is based on a family's earnings, the number of people residing in the home, age, and individual's disability. There are also families who are unaware of the existence of government assistance programs; therefore, communication with social services professionals is imperative to securing the financial stability of families raising children with chronic mental health issues.

A mother's self-efficacy can also be a factor in her decision to use the healthcare system. Self-efficacy is the belief that an individual can be successful at certain tasks, such as parenting and self-care (Holland et al., 2011). Researchers have demonstrated that empowerment, or level of self-efficacy, is an important social determinant for a mother and her child's health (Yousafzai, Farrakh, & Khan, 2011).

Researchers have found that parents with an elevated level of self-efficacy reported less stress and less negative health-related symptoms (Harper et al., 2013). Conversely, parents who exhibited a low self-efficacy reported an increase in anxiety and depressive symptoms (Warren, 2011). Thus, a mother's level of self-efficacy may influence her healthcare utilization.

The coping styles of a mother may impact her personal wellbeing and offer a good example for her children either through advocating positive health behaviors or

avoidance of negative health practices (Cwikel, Segal-Engelchin, & Menlinger, 2010). Several significant factors can influence a mother's coping abilities, including the demands of caregiving, the quality of family relationships, and a child's behaviors (Raina et al., 2005). Effective coping styles can be an important component in a mother's psychological resilience as well as a form of protection from factors that may influence her ability, or inability, to use healthcare services (Cwikel et al., 2010). Thus, an assessment of the coping styles of mothers may be a useful tool to predict healthcare utilization.

Hence, the gap in the literature is that no researchers have previously explored mothers of children with a mental health diagnosis and healthcare utilization in relation to the impact of trait anxiety. This study added to the literature, as it was hypothesized that mothers of children with a mental health diagnosis would behave differently than what was described in previous literature on trait anxiety's impact on healthcare utilization (Edman, 2004; Liakopoulou et al., 2010). Thus, the results of this study provided greater knowledge and understanding of trait anxiety regarding mothers of children with a mental health diagnosis and their healthcare use.

Problem Statement

Anxiety can influence an individual's decision-making process (Speziale & Carpenter, 2006). More specifically, trait anxiety (which is a general level of anxiety related to personality) may compromise a mother's decision-making about her healthcare utilization. Therefore, the research problem addressed in this study was to evaluate the connection between trait anxiety (as measured by the STAI-D; Spielberger, Gorsuch,

Lushene, Vagg, & Jacobs, 1983) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire; Lorig, 1996) of mothers raising children with a mental health diagnosis. The role of a mother's dysfunctional coping style (as measured by the Brief COPE Inventory; Carver, 1997) and a mother's self-efficacy (as measured by the Health Self-Efficacy Measure; Lee, Hwang, Hawkins, & Pingree, 2008a) were also analyzed in this study.

Understanding the link between trait anxiety and healthcare utilization in this population is important as gaining insight into the factors that decrease a mother's level of stress and anxiety may lead to an improvement in the function of the family unit (Weissman et al., 2006). The study added to the understanding of researchers, healthcare providers, policy makers, and mothers of children with a mental health diagnosis themselves about the personal traits (such as the use of positive coping styles and self-efficacy) of this population and their impact on healthcare utilization. The significance of this study also included knowledge useful for program developers, educators, psychologists, psychiatrists, insurance companies, mental health agencies, and hospital administrators who are studying methods to enhance the lives of mothers taking care of children with a mental health diagnosis as well as children who are identified as having a mental health disorder. This potential understanding may lead to further research of other demographic factors, the training of healthcare providers on the specific characteristics of mothers of children with a mental health diagnosis, and the development of social policies concerning healthcare utilization.

This study was important in several ways. It filled the gap in the literature on

whether anxiety impacts healthcare utilization among mothers of children with a mental health diagnosis. This study was a departure from past researchers who focused primarily on the experiences of children who were raised by parental figures diagnosed with mental health illnesses and rather focused on mothers of children with a mental health diagnosis (Bee, Berzins, Calam, Prymachuk, & Abel, 2013; Cook & Mueser, 2014). Weissman et al. (2006) reported that attempts to decrease a mother's level of stress and anxiety have also been correlated to an enhancement in the child's mental health illness (Weissman et al., 2006). Therefore, it is essential to appreciate the factors that may decrease a mother's stress and anxiety as that may result in an improvement in the child's quality of life (Weissman et al., 2006). Few researchers, however, have measured the healthcare utilization practices of mothers raising a child with a mental health diagnosis. This study, therefore, was intended to evaluate the effect of a mother's level of trait anxiety when making decisions about her healthcare utilization.

Theoretical Construct

This study was based on the transactional model of stress and coping (Lazarus, 1966). This model views psychological stress as an affiliation between a person, his or her surroundings and events that can be assessed as potential stressful events. According to the model, there are two specific processes that comprise this individual-environment association: cognitive appraisals and coping. A cognitive appraisal is an individual's evaluation of a situation whereas coping is the process through which an individual deals with the stressors in his or her environment as well as the emotions that arise from the stressors. A cognitive appraisal consists of two distinct operations: a primary appraisal

(the evaluation of a stressor) and a secondary appraisal (an analysis of the coping resources accessible to the person to address the stressor).

Consistent with the transaction model of stress and coping, primary appraisals and secondary appraisals do influence one another and lead to coping efforts employed by the individual (Lazarus & Folkman, 1984). Contrada and Baum (2011) stated that a person's capacity to control a situation is associated with the type of coping strategy used. The model makes a clear differentiation amid problem-focused coping and emotion-focused coping. If an individual chooses to use a problem-focused coping plan of action, he or she may try to remove the stressor, stop the stressor from occurring, or decrease the importance of a stressor. However, emotion-focused coping focuses on the emotional distress related to the stressor; an individual's attempts to prevent or decrease the distress associated with a stressful situation. Rearing a child with a mental health diagnosis can be a significant life stressor for a parent. The use of appropriate coping strategies may help to decrease the stress linked with the symptoms of a youth's mental health diagnosis. Therefore, the use of suitable coping styles that a mother raising a child with a mental health disorder can use to deal with her stress may result in an improvement in the mother's and the child's emotional and psychological wellbeing. Further discussion on the transactional model of stress and coping in relation to this study is included in Chapter 2.

Purpose of the Study

This study used a quantitative research design to assess whether trait anxiety in mothers of children with a mental health diagnosis affected her healthcare utilization

decisions. It was also designed to examine the role of a mother's dysfunctional coping styles and self-efficacy in her healthcare utilization practices. Mothers were the identified study group as they experienced a greater personal impact as an outcome of their child's mental health illness when compared to fathers (Sharpley, Bitsika, & Efremidis, 1997). Mothers of children with a mental health diagnosis tended to be critical of themselves for their child's illness more often when equaled to mothers of children with a physical illness (Tarabek, 2011). According to Rodrique, Morgan, and Geffken (1990), mothers were also more likely to be assumed accountable for their child's behaviors.

The independent variable (IV) for the study was anxiety and the dependent variable (DV) was healthcare utilization. The mediating variables for the study included coping styles and self-efficacy. Control variables incorporated in the study were a mother's age and a mother's educational level.

Research Questions

The following were the research questions and hypotheses for the basis of this study:

Research Question 1 : Is trait anxiety (as measured by the STAID-AD) significantly associated with healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental health diagnosis?

H_01 : There is not a significant association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental diagnosis.

*H*₁1: There is a significant association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental diagnosis.

Research Question 2: Does coping styles (as measured by the Brief COPE Inventory) mediate the association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis?

*H*₀2: Coping styles (as measured by the Brief COPE Inventory) do not mediate the association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

*H*₁2: Coping styles (as measured by the Brief COPE Inventory) do mediate the association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

Research Question 3: Does self-efficacy (as measured by the Health Self-Efficacy Measure) mediate the association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis?

*H*₀3: Self-efficacy (as measured by the Health Self-Efficacy Measure) does not mediate the association between trait anxiety (as measured by the STAID-AD) and

healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

H₁₃: Self-efficacy (as measured by the Health Self-Efficacy Measure) does mediate the association between trait anxiety (as measured by the STAID-AD) and healthcare utilization (as measured by the Healthcare Utilization Measure), among mothers of children with a mental health diagnosis.

Nature of the Study

This study employed a cross-sectional research design. This type of research design was appropriate for this study for several reasons. First, the participants retrospectively reported on their perceived levels of anxiety. Second, the mothers were not placed into an experimental or a control group. Third, the variables in the study were not manipulated. Finally, the cross-sectional research design permitted me to describe the characteristics of mothers of children with a mental health diagnosis and assisted me in making predictions based on the results of the measures used in the study, including the Brief COPE Inventory (Carver, 1997), the State-Trait Inventory for Adults (STAID-AD) (Spielberger et al., 1983), Health Self-Efficacy Measure (Lee et al., 2008a), and a Healthcare Utilization Questionnaire (Lorig, 1996). Data were collected through online surveys, and if requested by the participants, paper versions of the survey instruments.

Associations between variables were tested by binary logistic regression. Mediation was tested using the Sobel test, which tested the significance of a mediation effect. A mediation indicated whether the IV, trait anxiety, caused a change in the DV, healthcare utilization, by exerting influence through two mediating variables (coping

styles and self-efficacy). The level of education and age of the mothers were used as control variables to investigate possible confounding relationships.

Definition of Terms

The subsequent terms were used throughout the study.

Anxiety: Anxiety is an emotional state that includes feelings of uneasiness, tension, concern, and nervousness that are associated with a physiological arousal (Spielberger, 2010). Not all anxiety results in a negative outcome, as anxiety can also motivate an individual to remain focused and alert to his or her surroundings (Speziale & Carpenter, 2006).

Coping: Coping is an individual's attempt to manage a stressor and can protect an individual from physical and psychological harm (Foster et al., 2015). The coping strategy as well as the outcome of a stressful situation depends on a person's response to the stressor, the person's perception of the stressor (whether it is harmful or important) and the means obtainable to the individual to manage the stressor (Foster et al., 2015).

Healthcare utilization: Healthcare utilization is the measure of an individual's use of the healthcare services available to him or her (Menec, Black, Roos, & Bogdanovic, 2001). It is measured by the individual's use of hospital resources, prescription medications taken, and visits to a physician (Menec et al., 2001).

Self-efficacy: Self-efficacy is a person's confidence in his or her aptitude to accomplish behaviors necessary to yield specific performance standards. Researchers have indicated that a person with a higher level of self-efficacy was more apt to interpret

a trying task as a challenge instead of as a threat and was less likely to experience health-related problems (Chemers, Hu, & Garcia, 2001; Peng, Schaubroeck, & Xie, 2015).

State anxiety: State anxiety is a temporary condition that is related to a perceived threat (such as an object, situation, or event). When the perceived threat disappears, the individual's anxiety dissipates (Spielberger, 2010).

Trait anxiety: In opposition to state anxiety, trait anxiety relates to “an individual's tendency to perceive stressful situations as dangerous or threatening and to respond to these situations with an elevated sense of anxiety” and is a long-lasting tendency to experience stress, worry, and discomfort (Cao & Liu, 2015, p. 398).

Assumptions, Limitations and Delimitations

A major assumption incorporated in the study was that mothers of children with a mental health diagnosis encounter some type of anxiety. It was assumed that the participants in the study were mothers of children with a mental health diagnosis and that they would provide clear, reliable, and valid data. Several assessment instruments were used in the study and the assumption was that each assessment would be subtle enough to quantify what they were stated to measure, and that they were effective for the study measuring the effect of trait anxiety on healthcare utilization.

There were several limitations in the study. As this study used a retrospective research design, it examined events that occurred previous to the beginning of the study. The outcomes of the study were likewise limited by the time frame for which the data were collected, as it was a specific period of time and dependent on the conditions occurring at the time. For example, the healthcare utilization questionnaire required that

participants accurately recalled the past six months of their use of the healthcare system. Ideally, the mothers should have reported healthcare utilization practices directly after usage. Furthermore, a lengthy period of time, an unrelated event, or a child's acute mental health crisis may have influenced the mother's responses on the STAI-AD (Spielberger et al., 1983).

Additionally, the current study was limited by the lack of a control group; for example, mothers of mentally healthy children. The use of a self-report questionnaire may have also led the participant to provide responses that they believed were socially acceptable and not based on personal experiences (Steele, Phipps, & Srivastava, 1999).

In like manner, the method of sampling the population of mothers of children diagnosed with a mental health disorder may have also influenced the study's results. A convenience sample (a nonprobability sampling design consisting of participants who were easily accessible) of mothers were enlisted via outpatient therapists and intake workers at Human Services Center (Kelly, Riddell, Gidding, Nolan, & Gilbert, 2002). According to Human Services Center (2015), in 2012, 459 families were served in the Children's Services Department. This method provided an acceptable number of participants; however, may not necessarily have been a random collection of mothers of children with a mental health diagnosis.

The generalizability of the study was another potential limitation. Generalizability refers to the extension of a study's findings and conclusion (extrapolated from a sample) to the population as a whole (Slack & Draugalis, 2001). As this study was carried out with a population of mothers of children with a mental health diagnosis

within a specific geographic area, the generalizability to other populations may be unknown. There may have been differences in the characteristics of mothers who sought mental health treatment for their children, which may have not been similar to the entire population.

There were several delimitations to the study. For example, literature on mothers raising children with a physical illness was not reviewed, as a physical illness can be acute in nature, whereas a mental health illness tends to be chronic. The data collected were also limited to a specific age range of mothers and did not include mothers under the age of 18 years old, meaning that data collected did not include teenage mothers. Fathers were also excluded from the study, as mothers tend to be the principal caretakers of their children and make the majority of the medical decisions (Scharer, 2009). As this study was not focused on exploring a mother's underlying motivation or opinions on a specific variable, qualitative research was not an appropriate approach.

Significance of the Study

There was a need for research in the area of a mother's healthcare utilization because of the rise in costs of the use of the healthcare system. Simon, Ormel, VonKorff, and Barlow (1995) concluded that anxiety is correlated with considerably higher costs in healthcare, even after adjusting for medical comorbidity. Berger et al. (2009) also found that individuals with anxiety have higher levels of healthcare utilization than individuals without anxiety. Individuals taking care of children with mental health disorders may be at a distinct risk for increased anxiety because of the multiple stressors and challenges associated with the disorder. These parents may therefore require a higher level of

healthcare utilization. However, it can also be argued that having a child with mental health disorder teaches many parents resilience in the face of stress. In particular, it can increase effective coping styles and self-efficacy, which in turn could temper the effect of anxiety on healthcare seeking. At this time, researchers have not established a clear understanding of the importance of trait anxiety and its impact on healthcare utilization among mothers of children with a mental health diagnosis (Gumankin et al., 2007). Therefore, given the fact that anxiety does affect healthcare utilization, it was important to study the mother's coping styles and level of self-efficacy as these two factors could be important in decreasing healthcare use in this population. This, in turn, may lead to lower healthcare costs.

Implications for Social Change

This study contributed to positive social change, as the more knowledge of factors that affect the use or nonuse of the healthcare system that is gained about mothers parenting a child with a mental health illness, the more effective therapeutic interventions and supportive services will be developed. These services can assist in supporting the needs of these mothers. This, in turn, can lead to a decrease in the amount of money spent by insurance companies on healthcare services.

The information gained from this study was helpful for creating interventions such as coping skills training techniques as well as the development of interventions and programs to increase a mother's ability to deal with the anxiety experienced when raising a child with a mental health disorder. The development of programs and interventions may serve as models for assisting other populations in the use or nonuse of healthcare

services. The implications for positive social change as a result of this research may also lead to further studies on other demographic factors, the training of healthcare providers on the specific characteristics of mothers of children with a mental health diagnosis, and the development of social policies concerning healthcare utilization.

Summary

Mothers of children diagnosed with a mental health disorder may experience stress and anxiety as a result of their child's mental health needs. The intention of this study was to assess whether the trait anxiety in mothers of children with a mental health diagnosis affected their personal healthcare utilization. It was also assessed whether a mother's coping styles and level of self-efficacy played a role in whether a mother would use the healthcare system.

Chapter 2 includes research on the global effects of a child's mental health diagnosis on the child, the family, and society. The review identifies factors that may influence a mother's decision to use the healthcare system, including parental anxiety, parental coping styles, and parental self-efficacy. The review also addresses the prevalence of mental health illnesses as well as the transaction model of stress and coping.

Chapter 3 includes the study's research design. It also focuses on the study's research questions and hypotheses, the population and the sampling method, and an explanation of the several instruments to be used in the study. A discussion on data analysis is also incorporated in the chapter.

Chapter 2: Literature Review

Introduction

Mental health conditions among children are a critical community health concern because of their occurrence, inception at an early age, and how they impact the diagnosed child, family, and society (Perou et al., 2013). According to the National Research Council and Institute of Medicine (2009), 13-20% of children residing in the United States are diagnosed with a mental health disorder each year. In the United States, the financial cost of mental health treatment for an individual less than 24 years of age is \$247 billion dollars per year, making mental health disorders the most costly treated conditions among children (Perou et al., 2013). In a study carried out by the Health Care Cost Institute (2012), between 2007-2012, there was a 24% rise in the consumption of mental health services, the use of psychotropic medications, and the cost of mental health services among children.

The costs to society are not only related to treatment. Mental health disorders have been shown to be associated with the use of illegal substances as well as violent, criminal, and risk-taking conduct (Copeland, Miller-Johnson, Keeler, Angold, & Costello, 2007; Lehrer, Shrier, Gortmaker, & Buka, 2006). This in turn can lead to a higher economic strain on society and the justice system (Constantine et al., 2010).

A child who is diagnosed with a mental health disorder can experience difficulties in many aspects of his or her life, including at home, at school, and with peer relationships (Perou et al., 2013). Children affected with a mental health disorder are affected more often by physical health disorders such as diabetes, epilepsy, and asthma

when compared to children without a mental health disorder (National Research Council and Institute of Medicine, 2009). Children diagnosed with a mental health illness are also at a higher possibility for fostering a mental health disorder in adulthood (National Research Council and Institute of Medicine, 2009). Developing a mental health disorder in adulthood may lead to a decreased ability for that individual to be a productive member of the workforce, may cause the individual to engage in the use of illegal substances, and may result in a substantial financial cost to society (Smit et al., 2006). Children affected by mental health disorders also have to deal with the symptoms of the illness itself as well as the stigma, prejudices, stereotypes, and misconceptions of mental health illnesses (Corrigan & Watson, 2002). Researchers have suggested that a preponderance of individuals in the United States had a stigmatizing attitude toward mental health disorders (Corrigan & Watson, 2002). A child who is stigmatized as a result of a mental health illness can experience a low self-esteem, a fear of setting personal goals, and missed social opportunities (Corrigan & Watson, 2002). Thus, a mental health diagnosis can have an adverse effect in various aspects of a child's life.

Mental health disorders have far-reaching influences, not only to the affected individual and society but also to their family members. The family may be required to be more supportive, exhibit a higher level of understanding, and provide more care when compared to a parent of a child without a mental health diagnosis (Wade, 2006). As a child's mental health illness can be both chronic and debilitating, the families and caretakers of these children may face financial hardships, emotional burdens, and may suffer from their own psychological needs (DuPaul, Carson, & Qiong, 2013). According

to Busch and Barry (2009), a family's burden is exceptionally high for parents and caregivers of children with a mental health disorder because they encounter a larger economic burden and have a more difficult time maintaining consistent employment when compared to families without a child diagnosed with a mental health disorder. This may lead to a reduction in the overall income of the home as well as the possibility to limited insurance coverage and higher out-of-pocket medical expenses. Therefore, family members who are the caretakers of children with a mental health illness may experience significant caregiver burden as well as personal financial hardships. Most of these burdens fall on parents or caregivers of these children. Therefore, in this chapter I will focus on parents or caregivers specifically. I will use the term *parents* to include mothers, fathers or other caregivers.

Taking care of a child with a mental health disorder can also lead to a parent experiencing elevated degrees of stress and depression (Scharer, 2009). When parents of mentally ill children felt stressed, they tended to have a more difficult time coping with their child's behavioral outbursts, had an increase in their level of anxiety, and developed physical health problems (Barker et al., 2012; Scharer, 2009). A parent also felt frustration, grief, fear, and experience a sense of loss (Richardson, Cobham, McDermott, & Murray, 2013; Wade, 2006;). Thus, along with financial hardships, the influence of raising a child with a mental health diagnosis can also have numerous psychological and physical effects on a parent as well. In this chapter the literature on caregiver burden for parents of children with a mental health disorder will be reviewed.

In a search of the Medline, CINAHL, ERIC, PsycINFO, and PsycARTICLES databases, articles published in English from January 1991 through January 2015 were located using the following combinations of key words: *child* and *mental health* and *parent* and *physical health* and *effect*, *child* and *mental health* and *parent* and *financial* and *effect*, *child* and *mental health* and *parent* and *emotion* and *effect*, and *child* and *mental health* and *parent* and *psychological* and *effect*. These searches yielded approximately 500 peer-reviewed journal articles. Additional key words included *anxiety* and *parent* and *child* and *mental health*, *healthcare utilization* and *parent* and *child* and *mental health*, *coping styles* and *parent* and *child* and *mental health*, and *self-efficacy* and *parent* and *child* and *mental health*. These searches yielded approximately 750 peer-reviewed journal articles. Additional articles, including seminal articles, were also located in the reference lists of the journal articles found in the PsycINFO and PsycARTICLES, database searches. Of the original 1250 articles, 239 were kept for review. Documents were included if they described a single study or were review articles and were aimed at parents of children with a mental health diagnosis. Articles were limited to those that included the specific impact, both psychological and physical, on parents of children diagnosed with a mental health disorder. Excluded documents were those aimed at the impact on children who had parents with a mental health diagnosis.

The intent of this chapter is to summarize the collected works on the impact of children with a mental health illness on their parents. This chapter will discuss prevalence and impact of mental health illnesses as well as the transactional model of stress and coping in relation to a parent coping with their child's mental health disorder.

The chapter will also incorporate studies related to the effect of a child's mental health illness on the family, and (more specifically) parents. The emphasis of the discussion will concentrate on the influence of a child's mental health illness on a parent's physical health, psychological wellbeing, and a parent's healthcare utilization practices. Results from researchers who focused on the dynamics that may effect the impact of a child's mental health diagnosis on parents, including parental anxiety, parental coping styles, and parental self-efficacy, will also be summarized within the chapter. First, the stress-coping model will be reviewed as a theoretical foundation explaining the impact of children with mental health disorders on their parents.

Theoretical Foundation

Taking care of a child with a mental health disorder can create many stressors and the impact of a child's disorder on their parents is best understood within a stress-coping framework. Understanding stress and coping is important to health education, the endorsement of positive health choices, and avoidance of disease (Glanz, Rimer, & Lewis, 2002). Stress, as outlined by Lazarus and Folkman (1984), is "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing" (p. 19). A stressor is recognized to be a demand that originates from the internal or external environment that can upset an individual's equilibrium (which includes physical as well as psychological wellbeing; Lazarus & Cohen, 1977).

Stress does not affect individuals in a similar manner. In some individuals, stress can to negative experiences or illnesses (Glanz et al., 2002). For example, stress can lead

to illnesses in a direct manner through physiological effects on an individual's body; however, stress can also lead to illnesses in an indirect manner through harmful health behaviors (such as overeating and alcohol abuse; Glanz et al., 2002). Additionally, stress can lead to positive outcomes such as learning valuable life lessons as a result of a stressful situation as well as experiencing personal growth (Folkman & Moskowitz, 2000).

The way that a person chooses to cope with a stressful situation can be an influential factor in determining the outcomes that will occur on their physical and mental health. Coping is a process that is focused on changing an external stressful situation and making it more tolerable (Cwikel, Segal-Engelchin, & Mendlinger, 2010). It is a protective factor that can assist in maintaining the resiliency of an individual dealing with a stressor (Seltzer, Greenberg, Floyd, & Hong, 2004). Researchers have suggested that coping is a mediating variable between stress and the ability to adjust to a situation that is stressful, such as raising a child diagnosed with a mental health illness (Lee, 2009).

Coping refers to an individual's thoughts and actions that are used to deal with an intimidating situation. It is an intricate process that is dependent on many variables, including the specific situation, an evaluation of the situation, and the available resources an individual has to deal with the situation. Coping is an ever-evolving response to continually changing circumstances (Contrada & Baum, 2011). However, there is a distinction in an individual's coping style and coping behavior. For instance, an individual's coping style is his or her cognitive, affective, or behavioral response to a

traumatic life event, whereas coping behaviors refer to what an individual does when faced with a life stressor (Flaskerud, 2012).

Stressful situations lead to either adaptive or maladaptive coping responses. For example, the use of denial can be a maladaptive type of coping (in situations when an individual does not want to face something that requires action). However, denial can also be an adaptive form of coping (in situations when an individual cannot process a traumatic experience all at once; Lazarus, 1984).

The transactional model of stress and coping, introduced by Lazarus (1966), is a structure for analyzing the process of coping with stressors. It provides a framework to analyze the specific factors that may serve to protect an individual from the experience of stress. The central theme of the model is that different individuals will perceive a given situation in a different manner. Individual perception, and not the specific stressor, is the main influence on behavior as well as overall health.

Stressful experiences in life are analyzed as a transaction between a person and his or her environment. The impact of the stressor (or demand) is arbitrated by the way the person appraises the stressful situation and includes the resources (such as social, cultural, and psychological) that are available to the individual (Glanz et al., 2008). Appraisals are an individual's way to evaluate a situation that incorporates information about a stressor as well as information from an individual (Glanz et al., 2008). For example, most individuals are not alarmed when using an elevator; however, for individuals who are claustrophobic, riding an elevator is appraised quite differently.

When a person is faced with a stressful situation, he or she evaluates the situation (primary appraisal) and proceeds to evaluate the skills necessary to alter the situation and deal with his or her emotions (secondary appraisal). Primary and secondary appraisals do influence one another (Contrada & Baum, 2011). The coping efforts that an individual employs are based on these primary and secondary appraisals. Therefore, understanding these appraisals in detail is important.

Primary Appraisal

A primary appraisal is an evaluation made by an individual of a stressor. An individual can perceive a stressor to be negative, positive, irrelevant, or controllable. For example, if one perceives a stressor as threatening, it may cause an individual to feel distress. However, if one perceives a stressor as positive or irrelevant, the individual experiences little to no distress. For instance, if a student is required to take an oral comprehensive exam prior to graduation, he or she may enjoy this style of testing and look at the exam as a positive challenge while another student may look at the exam as a negative, anxiety-producing experience.

There are two types of primary appraisals: perceptions of susceptibility to the stressor and perceptions of the severity of the stressor (Glanz et al., 2008). Perceptions of susceptibility refer to a person's awareness of the risk or the chances that a stressor may affect them (Witte, 1992). Perceptions of severity refer to the degree an individual recognizes a particular stressor as serious (Witte, Cameron, McKeon, & Berkowitz, 1996). As stated by the transaction model of stress and coping, an event that is perceived as negative or threatening prompts an individual to cope with the stressor. For example,

if a male perceives himself as susceptible to prostate cancer, he may be motivated to obtain medical testing as well as seek social support to help cope with his concerns. However, primary appraisals can also minimize the significance of a stressor and reduce the distress associated with a possible threatening situation. As an example, if a person is overweight and minimizes the health risks associated with obesity, he or she may be less motivated to change their diet.

Secondary Appraisal

A secondary appraisal is a measurement of the coping resources that are available to an individual that assist the individual in addressing a stressful situation. There are several examples of secondary appraisals, including a person's perception of their control over a stressful situation, a person's perception of their ability to control their emotions over a stressful situation, and an individual's perceptions of the effectiveness of their coping resources (self-efficacy) (Glanz, Rimer, & Viswanath, 2008). For example, if an individual gets laid off from his or her job and does not have any other job opportunities and no family support, he or she will see this a much more debilitating stressor than someone who is in a similar situation and has other job options as well as a strong support system.

Researchers have shown there is a positive association between the perception of control over a person's illness and his or her psychological adjustment to the illness as well as willingness to follow through with recommended treatment options (Kok, Hospers, Harternick, & de Zwart, 2007). Glanz et al. (2002) also explained that a person's viewpoints in regard to his or her proficiency to implement health behaviors

(self-efficacy) play a distinct role in the ability to accomplish those health behaviors. According to Bandura (1997), self-efficacy predicted success in following a diet plan, engaging in an exercise regiment, and in quitting smoking.

Coping Efforts

As per the transactional model of stress and coping, the effects of appraisals (primary and secondary) result in an individual choosing actual coping strategies (Lazarus & Folkman, 1984). Within this model, there is a distinction made amongst problem-focused and emotion-focused coping strategies. A problem-focused coping strategy focuses on the stressor itself and its physical impact (Contrada & Baum, 2011). When an individual employs a problem-focused coping strategy, he or she may attempt to remove the stressor, stop the stressor from happening, or decrease its physical impact. An example of problem-focused coping would be an individual attempting to avoid a flood by leaving his or her home for a safer place to stay, placing sand bags around their home, and obtaining supplies to survive in case power is lost. Emotion-focused coping targets the emotional distress that often occurs as the result of a stressor. The cornerstone of emotion-focused coping is to prevent or to diminish the distress correlated with a stressor, and is an appropriate strategy to use when an individual is faced with the death of a loved one (Contrada & Baum, 2011).

Even though there is a distinction made amid problem-focused coping and emotion-focused coping, there are times when that distinction does not easily relate to all coping responses. For example, individuals can look for support from family and friends to assist them in their problem-focused coping efforts (such as removing or avoiding a

stressful situation); however, social support can also assist an individual's emotion-focused coping strategies by diminishing the distress caused by a stressful situation.

According to Contrada and Baum (2011), the ability of an individual to control a situation can also play a part in which type of coping strategy is utilized. For instance, problem-focused coping tends to be more useful when a stressful circumstance appears to be controllable, whereas, emotion-focused coping strategies tend to be more useful when the stressful situation is out of an individual's control. Also, problem-focused and emotion-focused coping efforts tend to complement one another. For example, when an individual uses effective problem-focused coping strategies, those strategies have a tendency to decrease an individual's distress about a stressor (emotion-focused). In turn, when an individual uses effective emotion-focused coping strategies, an individual may experience less anxiety about the stressor and be more equipped to give rise to better problem-focused coping strategies. It is important to emphasize not all individuals will choose the best coping strategies for a particular situation. Using maladaptive coping strategies can lead to less adaptation to the stressor which, in turn, can affect mental and physical health (Contrada & Baum, 2011).

Applying the Transaction Model of Stress and Coping to Parenting

Coping strategies are imperative to understanding how caregivers of a child diagnosed with a mental health illness adjust to their life situation. Parents raising a child with a mental health illness can be forced to cope with a variety of issues including the child's disruptive behaviors, changes in the family's daily routines, the lack of the child's independence, tense family relationships, and financial hardships (Liu, Lambert, &

Lambert, 2007). The effective use of coping strategies has been shown to aid in maintaining levels of resilience in parents as well as assisting families in adjusting to raising a child with a mental health diagnosis (Liu et al., 2007; Raina et al, 2005; Seltzer et al., 2004).

Parents who are raising a child with a mental health diagnosis have to deal with frequent, repeated stressors that will not consistently require the same type of coping strategy, or style. The coping styles of parents may “affect their own health and provide a role model for their children either through health-promoting coping or aversive health behaviors” (Cwikel et al., 2010, p. 132). There are a variety of coping styles that parents can use that prove to be effective or ineffective centered on the type of situation in which those coping strategies are employed. A parent, for instance, may employ problem-focused coping strategies when attempting to figure out how he or she will pay for their child’s treatment and in identifying the appropriate school setting for their child. Active coping, or the attempt by a parent to use his or her own resources to deal with a situation that is stressful, has been found to be an effective strategy for parents of a child with a chronic disorder to use to deal with stress (Lee, Hwang, Hawkins, & Pingree, 2008). The use of accommodative coping involves the willingness to change goals in response to an ongoing stressful situation and can precede an improvement in the overall wellbeing in parents of children with a mental health diagnosis (Seltzer et al., 2004). A parent can also employ emotion-focused coping strategies when trying to deal with adjusting to their child’s diagnosis in an effort to alleviate their distress about the diagnosis (Goldbeck, 2001).

When a parent uses positive coping strategies, or reframing, the result can be a decrease in a parent's potential for developing depression or other psychological disorders (Lee, 2009; Zablotsky, Bradshaw, & Stuart, 2013). However, when parents employ less desirable coping behaviors, such as denial, avoidance, self-blame, or aggression, negative health outcomes may occur (Flaskerud, 2012). According to Lee (2009) and Zablotsky et al. (2013), parents that use avoidance coping, religious coping, or denial tended to report an increase in their level of stress, anxiety, and depression.

The motivation to use effective coping styles may be compromised when faced with a life stressor, including raising a child with a mental health illness (Cwikel et al., 2010). In findings by Churchill et al. (2010), the results pointed out that the manner in which a parent coped with the extra tasks and emotional needs of overseeing a child's chronic condition was a critical factor in determining whether parenting techniques were successful. Taania, Syrjala, Kokkonen, and Jarvelin (2002) found that parents who employed effective coping strategies sought further information in regard to their child's lasting condition, desired to maintain a strong family unit by looking for social and emotional support from others, and had an increase in their self-confidence as well as their self-efficacy. In fact, support from family, friends, and neighbors has been shown to decrease a parent's level of stress and improve their physical and mental wellbeing (Zablotsky et al., 2013).

In following the transaction model of stress and coping, a parent will evaluate each of the stressors associated with raising a child diagnosed mental health illness (primary appraisal). A primary appraisal is a parent's analysis of the importance of the

effect of the stressor as one that is stressful, positive, controllable, challenging, or irrelevant (Lazarus & Cohen, 1977). When faced with each of the stressors of raising a child with a mental health diagnosis, the second appraisal follows, which is the assessment of a parent's coping resources and available options (Glanz et al., 2008). The secondary appraisal focuses on the ways of handling emotions related to raising a child with a mental health diagnosis. Finally, a parent implements coping skills that focus on regulation of the stressor and leads to outcomes of the coping process. There are three principal types of coping outcomes for parents of a child with a mental health diagnosis, including emotional wellbeing, functional status, and health behaviors (Contrada & Baum, 2011). These outcomes can occur alone or in conjunction with one another.

Parenting a child with a chronic illness, such as a mental health diagnosis, is a significant family stressor (Barakat & Alderfer, 2011). Parents who raise child with a chronic illness, such as a mental health illness, face atypical parenting challenges that can have an impact on their physical and mental health (Seltzer et al., 2004). Choosing appropriate coping strategies may decrease the impact of these stressors. For example, in a study conducted by Seltzer, Greenburg, Floyd, Petee, & Hong (2001) problem-focused coping led to a decrease in depression among mothers of children with a developmental disability, but this type of coping strategy did not lead to a decrease in depression among mothers of children with a mental health diagnosis. In research focused on the coping styles of parents raising children with a chronic illness, it has been found that coping styles have a direct effect on a parent's psychological wellbeing (Billings, Folkman, Acree, & Moskowitz, 2000). Abbeduto et al. (2004) reported that higher levels of

problem-focused coping predicted a decreased level of psychological distress and closer mother-child relationships in mothers of children with a chronic illness; whereas emotion-focused coping predicted an increase in psychological distress and a distant mother-child relationship in the same population. In another study, Douglas, Hulson, and Trompeter (1998) concluded that parents of children with a chronic illness, such as a mental health disorder, tended to use passive coping strategies to manage the stress associated with their child's illness. Therefore, identifying coping styles that lessen the harmful effects of taking care of a child with a mental health illness on a parent's emotional and psychological wellbeing is important for parents and their children.

Self-efficacy

Self-efficacy is a person's confidence in his or her ability to be successful at certain tasks, such as parenting and self-care (Holland et al., 2011). According to Wright, Adams, Laforge, Berry, and Friedman (2014), self-efficacy is the self-assurance in the ability to participate in specific conduct under a variety of situations. It refers to the personal resources that are important for a parent's quality of life, self-competence, and self-control (Guillamón et al., 2013). For example, parents with high self-efficacy will attempt a new behavior modification program with their child and believe the program will improve the child's compliance as a result of consistently using the program. However, parents with low self-efficacy will avoid attempting a new behavior modification program for lack of self-confidence and accept their child's noncompliance. Self-efficacy can also assist a parent with raising a child with a mental health illness, successfully managing life's circumstances, and adjusting to the stress of having a

chronically ill child (Harper et al., 2013; Merkel & Wright, 2012; Steffen, McKibbin, Zeiss, Gallagher-Thompson, & Bandura, 2002).

The influence of a parent's personal resources and how he or she manages their physical, emotional, and social wellbeing is also affected by self-efficacy (Carless, Melvin, Tonge, & Newman, 2015; Guillamón et al., 2013; Yousafzai, et al., 2011). For example, in studies focused on parents of both chronically ill children and well children, Harper et al. (2013) and Sevigny and Loutzenhiser (2010) found that a parent who encompassed a high level of self-efficacy reported less distress as well as less psychopathology.

Parents in families with and without children with chronic conditions have shown the benefits of high self-efficacy. In general, parents with a high self-efficacy exhibit a higher level of engagement and level of interaction with their child as well as displaying the ability to effectively monitor their child's behaviors (Sevigny & Loutzenhiser, 2010). High parental self-efficacy is also positively correlated with their child's self-esteem, school performance, and socialization skills (Warren et al., 2011). Alternatively, parents with a low self-efficacy tend to give up on challenges prematurely, have poorer levels of communication, and do not readily engage with their child (Carless et al., 2015; Warren et al., 2011). Low parental self-efficacy is likewise associated with an increase in a parent's symptoms of anxiety and depression (Warren et al., 2011).

It is critical to note that high self-efficacy in one area does not necessarily lead to high self-efficacy in all areas of a parent's life. For example, a parent may describe their confidence as high in their ability to communicate effectively with their child's

psychiatrist, but may be less certain about their abilities to dispense prescribed psychotropic medications to their child (Holland et al., 2011).

In general, a parent's confidence about their aptitude to fulfill the caretaking behaviors necessary to have control over their situation plays a part in the performance of their parental responsibilities. This may also be applicable to parents of children with a mental health diagnosis. A minimal number of researchers have specifically determined the self-efficacy in parents of children with a mental health diagnosis (Kwok & Wong, 2000). Researchers have supported that insufficient parental self-efficacy is related to low parental participation in their child's healthcare treatment; however, only one study, the Vanderbilt Family Empowerment Project (FEP), has specifically focused on a parent's self-efficacy and his or her participation in their child's mental health treatment (Bickman, Heflinger, Northup, Sonnichsen, & Schilling, 1998). In addition, Heflinger, Bickman, Northup, and Sonnichsen (1997) conducted the only known study that focused on increasing the empowerment of caregivers of children with a mental health illness and found that there was a significant increase in a parent's self-efficacy when parents were provided education on available mental health services. According to Reich, Bickman, and Heflinger (2004) and Taub, Tighe, and Burchard (2001), there have not been any studies that examined the specific components that improved a parent's self-efficacy as a means to increase the contribution of parents in their child's mental health treatment and whether improved self-efficacy led to more optimistic results for the child diagnosed with a mental health illness.

As self-efficacy influences the feelings and choices of parents as well as their motivation, it is essential that professionals focus on building stronger self-efficacy in parents as close to their child's initial mental health diagnosis as possible as a means to improve the family's level of functioning. Improved self-efficacy may also lead to parents more consistently following through with a mental health professional's treatment recommendations for their child; this in turn, may improve the child's potential mental health treatment benefits.

In summary, as it is assumed that raising a child with a mental health disorder can be challenging and constitute a stressful situation for parents, the theoretical framework chosen for this study is the transactional model of stress and coping (Lazarus & Folkman, 1984). Parents raising a child with a mental health diagnosis must learn to cope with their life situation in order to adjust to a variety of issues (including physical, psychological, and financial) that are now at the forefront of their lives. A variety of coping strategies can be employed to assist parents in mitigating the stress associated with their child's mental health diagnosis. A parent's self-efficacy may also assist him or her in coping with the daily stressors of rearing a child with a mental health diagnosis. The belief that a parent has the ability to successfully take care of their child will not only affect the parent's emotional wellbeing, but may influence the benefit of the child's mental health treatment outcomes as well. As a parent's socioeconomic status can also affect the types of treatments available for a child with a mental health illness, the economic impact of raising a child will be explored in the following section.

Economic Impact of a Child's Mental Health Illness on Parents

The cost of parenting a child with a chronic physical or mental health condition is markedly higher than the cost of parenting a child without a chronic illness (Parish & Cloud, 2006). There are three types of costs for the family unit correlated with raising a child with a mental health illness, including direct (out-of-pocket) costs, indirect costs (such as decisions about employment), and the long-term costs related to the child's ability to financially contribute to society (Stabile & Allin, 2012). Stabile and Allin (2012) found that raising a child with a mental health illness can cost a family an additional \$30,500 per year. Caregivers of children with a chronic illness can encounter significant fiscal and job-related burdens when compared to caregivers of children without unique healthcare needs (Saunders et al., 2015). The everyday care needs of children with mental health issues, such as providing transportation to and from appointments, administering medication, and coordinating care with multiple service providers, can consume a lot of a parent's time. Researchers have found that children who have chronic emotional, behavioral, developmental, and educational needs required significantly more hours of care from parents (Maes, Brockman, Dosen, & Nauts, 2003). The constant parental attention that the child requires can negatively affect a parent's ability to maintain employment as well as financial stability (Parish & Cloud, 2004).

Van Dyck, Kogan, McPherson, Wessman, and Newacheck (2004) discovered that families with children diagnosed with a mental health illness were more prone to be classified as low-income families, as the children's mental health needs exceed the family's financial resources. According to Parish and Cloud (2006), 28% of families who

had children with chronic illnesses or disabilities reside in households below the federal poverty level. Parish et al. (2004) found that the income of parents of a child with a disability averaged 32% (or \$12,000 dollars) lower than that of parents without a child with a disability and that these families had a more difficult time meeting the expenses of taking care of a child with a disability. Income poverty in families of children with medical or mental healthcare needs was elevated when compared to other families as these families experienced an increase in the economic constraints due to high cost of healthcare (Newacheck, McManus, Fox, Hung, & Halpon, 2000).

Researchers have indicated that there are differences in the access and uses of therapeutic supportive services based on whether parents of children with a chronic mental health illness have insurance or are uninsured (Bumbalo, 2005). Mentally ill children in families with public health insurance were likely to employ therapeutic supportive services and use psychotropic medications since families with private insurance or who are uninsured may not have the financial ability to fund the services and medication (Newacheck et al., 2000). In turn, those families with private insurance may have higher out-of-pocket expenses and co-pays which could negatively impact a family's financial stability. Families raising children with a chronic illness may not only necessitate therapeutic support services for their children, such as counseling and respite care, but also spend up to four times as much money on everyday items (including activities, toiletries, medical items, and a child's possessions), as children with a mental health diagnosis require more items to entertain them, occupy their attention, and to stimulate their senses (Benedict & Farel, 2003; Bumbalo, 2005).

In summarizing the literature on the economic influence of a child's mental health illness on parents, it has been found that childhood mental health disorders include multiple immediate and long-term financial costs that influence the wellbeing of the child, family members, and society (Stabile & Allin, 2012). The medical expenses of raising a child with a mental health diagnosis can be debilitating for a parent who may struggle to maintain employment as a result of the constant care required for their child. Society is also impacted as children diagnosed with a mental health illness may not attain a high level of education or acquire work-related skills that would assist in maintaining long-term employment, thus affecting their ability to contribute to the economy. Thus, given both the direct and indirect costs associated with childhood mental health disorders, focusing on mental health promotion, mental health disorder prevention, and mental health treatment services, the personal and financial costs associated with childhood mental health disorders may be reduced. Next, the writings on the impact of raising a child with a mental health diagnosis on a parent's psychological health will be reviewed.

Impact of a Child's Mental Health Illness on a Parent's Psychological Health

Mental health diagnoses can affect individuals at any time in their lives; however, children with a mental health diagnosis can pose several challenges for their parents. According to Barker et al. (2012) and Scharer (2009), when a child with special care needs is born, the experience exposed the members of the family to an increased level of stress, depression, anxiety, feelings of frustration, and emotional strain. Members of the family unit also experienced grief, fear, and a sense of loss (Richardson, et al., 2013; Wade, 2006). This may result in chronic sorrow (Mohr & Regan-Kubinski, 2001), also

known as chronic grief, which is a natural reaction in parents of children with a chronic illness and is characterized by a profound sadness over the loss of the parent's opportunity to have a perfect child, the parent's realization of the child's lifelong dependency, and the acknowledgement of the certainty and stability of their child's chronic illness (Hobdell, 2004; Hummel & Eastman, 1991). According to Eakes (1995), eight out of ten parents of mentally ill children experienced chronic sorrow, as a result of their perpetual caregiving responsibilities. As a means to deal with their trauma and sorrow, mothers of children with a mental health diagnosis preferred that mental health professionals permit them the opportunity to express their sadness and desired positive feedback on whether they handled a psychiatric episode in an effective manner (Gordon, 2009).

Following a mental health diagnosis for a child, there is a period of adjustment to the novel situation and it will often challenge the family unit to learn to cope with the changes in the family's daily routine (Guillamon et al., 2013). The family unit is forever altered as the roles, relationships, and organization within the family shifts (Leyser, 1994). Living with a child with a mental health illness can be very taxing for the parents, as the caretaking process involves constant attention to the child, supporting the child, and having additional daily responsibilities when compared to tending to a healthy child (Ambikile & Outwater, 2012). Parents of children with a mental health diagnosis have the responsibility of ensuring their children's needs are met, including their child's mental health needs. Parenting entails balancing an individual's own wants with the needs of a child; however, these needs can be amplified in children with a mental health

diagnosis. At times, parents of children with a mental health diagnosis provide care to their child at the expense of their own physical and mental health (Byrne, Hurley, & Cunningham, 2010; Storch et al., 2009). However, parents can also experience relief after receiving a diagnosis for their child's mental health illness. Relief for parents can be the result of the recognition as well as the acknowledgement from mental health professionals of their child's symptoms and finally understanding what treatment is necessary for their child.

As with many other aspects of healthcare, responsibility for the child's mental healthcare and treatment is placed on the primary caregiver (Grey, 2006). As mothers are the customary caregivers for their children, they tend to make the majority of the aftercare decisions about their child's care, school placements and accommodations, therapeutic interventions and behavioral techniques used in the home, school, and community (Scharer, 2009). However, researchers in this area have not consistently indicated that mothers are more emotionally affected by raising a child with a mental health diagnosis than fathers. Several researchers indicated that there is no difference between mothers and fathers in this area (Barker, 1994; Goldberg, Morris, Simmons, Fowler, & Levison, 1990; Uskun & Gundogar, 2010). Conversely, two studies conducted by Azeem et al. (2013) and Scharer (2005), found that mothers, compared to fathers, tended to be more emotionally affected by their child's mental health illness as they worried about the wellbeing of their child even into adulthood. Thus, taking care of a child with mental health issues can be stressful for both parents, no matter who takes the primary caregiver role.

The experienced stresses of parents of children with a mental health diagnosis can include the following: physical demands, time constraints, an extended time necessary to care for the child, the stigma of raising a child with a mental health illness, the uncertainty of the child's long-term prognosis, strained intra-familial relationships, and financial concerns (Leyser, 1994; Marcenko & Meyers, 1991). Children with long-lasting emotional, behavioral, or developmental problems tend to have caretakers who are four times more likely to experience stress as well as are at an enhanced risk of acquiring a mental health condition (Hatton & Emerson, 2009; Kerr & McIntosh, 2000; Kim, Viner-Brown, & Garcia, 2007). When mothers of mentally ill children feel stressed, they tended to have a more difficult time coping with their child's behavioral outbursts and experience an increase in their level of anxiety (Scharer, 2009). Understanding the psychological health of parents raising children with mental health illnesses and exploring ways to decrease their levels of anxiety, stress, and depression will not only improve the quality of care for the child, but will also help to maintain the stability of the family unit (Kong et al., 2012).

Depression in parents of children with a mental health issue is a noteworthy matter, as it can be a critical determinant in the emotional and physical development of the child (Churchill, Villerale, Monaghan, Sharp, & Kieckhefer, 2010). Approximately 35-53% of parents of children with a disability experienced depression (Breslau et al., 1982). Most of the researchers exploring the mental health of parents of children with mental health illnesses have uncovered an increase in the rate of maternal depression when compared to control groups of parents raising children without mental health

illnesses (Breslau et al., 1982; Dumas, Wolf, Fisman, & Culligan, 1991). However, according to Gerkenmeyer et al. (2011), depressive symptoms in caregivers, specifically mothers of children with a mental health diagnosis, often go undiagnosed by mental health professionals. Furthermore, researchers have found that specific attributes such as a person's education, income level, marital status, and severity of a child's mental health illness may affect depression levels (Resch et al., 2012).

Depression in parents raising children with a mental health diagnosis can lead to less effective parenting skills and it can have an impact on the parent-child relationship, as the functioning of the family unit can be negatively affected (Leung & Slep, 2006; Najman et al., 2000). Researchers have found that parents who are suffering from symptoms of depression may display a more negative attitude toward their child and experience challenges adjusting to their child (Rusch et al., 2006). According to Schor (2003), parents suffering from depression interacted less with their children, displayed less support, and exhibited a higher level of negative interactions with their child. Rusch et al. (2006) also found that depression in parents of children with a disability affected their sense of personal empowerment and control. Furthermore, in a study led by Gerkenmeyer et al. (2011), parents who displayed symptoms of depression, more specifically mothers, had more difficulty providing the necessary mental healthcare treatment and care for their child. Thus, parental depression affects both the parent and their child.

The stress caused by the additional responsibilities carried out by the parents of a child with a mental health illness can also lead to increased levels of anxiety (Uskun &

Gundogar, 2010). Researchers have discovered that parents of children with varying types of disabilities experienced an increase in anxiety disorders when compared to parents of healthy children (Cirpar, 2010). In a study by Ben Thabet et al. (2013), anxiety disorders were found in 70.7% of mothers and 55.6% of fathers of children with a chronic illness; and having multiple children with a chronic illness within the family increased the chance for anxiety disorders. Anxiety disorders can make it more difficult to take care of the child's everyday needs (Kilic, Gencdogan, Bag, & Arican, 2013).

Researchers have discovered that parental anxiety increased after their child was diagnosed with a health condition (Picci et al., 2013). There are several contributing factors that led to anxiety in parents of a child with a mental health diagnosis including the negative attitudes of society and the social stigma associated with raising a child with any type of disability (Uskun & Gundogar, 2010). Parents also expressed anxiety over their child's future experiences of living with a mental health illness as well as the complexity of the everyday responsibilities in taking care of the child's needs (Ambikile & Outwater, 2012). Parents who reported anxiety tended to have children with poorer treatment outcomes and tended to report higher levels of anxiety experienced by their children (Bodden et al., 2008; Creswell, Willetts, Murray, Singhal, & Cooper, 2008). However, in studies conducted by Berman, Weems, Silverman, and Kurtines (2000), the previously stated findings have not always been consistent as a parent's self-reported symptoms of anxiety did not consistently result in poorer treatment outcomes or higher levels of anxiety in older children or for children participating in group therapy mental health treatment.

Not all parents who experience anxiety will receive a diagnosis for an anxiety disorder. Anxiety exists on a continuum and even parents without an anxiety disorder may periodically experience increased levels of anxiety. It is important to distinguish between two categories of anxiety: state and trait. Trait anxiety is reflected by a stable tendency to react with anxiety or fear in different types of situations (Conner, Maddox, & White, 2013). Trait anxiety, or a general level of stress, is specific to an individual and may be related to personality (Ristvedt & Trinkaus, 2005). This type of anxiety can vary based on how an individual has conditioned himself or herself to respond to as well as manage stress (Forsberg & Bjorvell, 1993). Trait anxiety has been correlated with anxiety disorder diagnoses, which tend to be ongoing in nature (Conner et al., 2013). According to Conner et al. (2013), parents with an increase in trait anxiety believe that circumstances concerning their children as more alarming and they attempt to gain a higher level of parental control. For example, trait anxiety is the overall propensity for a parent to respond to his or her child's diagnosis with a chronic feeling of concern (Keyser-Dekker et al., 2012). Conversely, state anxiety, is the degree of a person's level of apprehension at any given moment. State anxiety can be very high during certain moments even in those with low trait anxiety. For example, right before jumping off a cliff before bungee jumping. State anxiety fluctuates from situation to situation and is therefore less stable than trait anxiety. For example, state anxiety may flare in a parent when watching a child do something dangerous, but will come down quickly after the danger has dissipated.

Anxiety has also been found to be an important factor that influences an individual's healthcare utilization, as it is the emotion that typically responds to a particularly threatening situation and it is a key component in healthcare seeking. (Ristvedt & Trinkaus, 2005; Keyzer-Dekker et al., 2011). An individual's level of anxiety is a moderating factor between health care seeking and health utilization behaviors (Eastin & Guinsler, 2006). According to Ristvedt and Trinkaus (2005), both low and high anxiety delayed an individual's healthcare utilization practices. However, in conflicting research, Hu et al. (2002), stated that individuals with high, not low, levels of anxiety were more prone to seek healthcare services.

Trait anxiety can affect healthcare utilization (Ristvedt & Trinkaus, 2005). This type of anxiety can vary based on how an individual has conditioned himself or herself to respond to as well as manage that stress (Forsberg & Bjorvell, 1993). Research conducted by Ristvest and Trinkaus (2005) and Cameron et al. (1998) indicated that trait anxiety increased health care utilization because it influenced an individual's response to somatic symptoms, increased worry over his or her symptoms, and activated coping mechanisms to respond to the somatic cues. Garcia, Cejudo, Salguero, and Blasco (2011) also added to this body of research and indicated that a high level of trait anxiety was a significant predictor of visits to a physician. In regard to parents raising a child with a mental health diagnosis, trait anxiety was the general predisposition to respond to the child's diagnosis with a chronic feeling of concern (Keyser-Dekker et al., 2012).

There are also several other aspects that may be a factor in healthcare utilization including socioeconomic factors, demographic factors, and epidemiological factor

(Geitone et al., 2007). Of relevance to this study of mothers of children with mental health disorders is the role that gender plays in healthcare utilization. Researchers have demonstrated that women used more healthcare services when compared to men (Glaesmer et al., 2012; Bertakis et al., 2000). In a study conducted by Kazanjian, Morettin, and Cho (2004), the key findings indicated that women were two times as likely as men to visit a family physician. Gender can influence patterns of healthcare utilization through a variety of mechanisms. For example, women showed differences in somatic complaints, had more minor illnesses, suffered from a higher level of nonfatal chronic diseases, and were affected by the most common mental health illnesses (Glaesmer, 2012). Women also tended to share their health concerns with family members, close friends, and healthcare professionals more often when compared to men (Mackenzie, Knox, Gekoski, & Macauley, 2004). Therefore, women were more inclined to visit a doctor for their health concerns, which led to a higher level of healthcare utilization (Glaesmer et al., 2012).

Investigation in this area is necessary due to the rise in costs of the use of the healthcare system. Simon et al. (1995) concluded that anxiety was correlated with significantly higher healthcare costs, even after adjusting for medical comorbidity. Berger et al. (2009) also found that individuals with anxiety had higher levels of healthcare utilization than individuals without anxiety. At this time, researchers have not established a clear understanding of the importance of trait anxiety and its impact on healthcare utilization among mothers of children with a mental health diagnosis (Gumankin et al., 2007). Therefore, given the fact that anxiety does affect healthcare utilization, it is

essential to study a mother's dysfunctional coping styles and level of self-efficacy as these two factors could be important in decreasing healthcare use in this population. This, in turn, may lead to lower healthcare costs.

Understanding the trials that parents deal with when raising a child with a mental health diagnosis can assist in identifying ways to improve the family unit. Researchers have suggested that mental health professionals should focus on the wellbeing of parents as a contributing factor to the health promotion of their children (Bond & Burns, 1998). Parents of children with a mental health illness must seek additional healthcare services as well as educational assistance that can help relieve parental depression, stress, and anxiety (Bennet, et al., 2012). Ambikile and Outwater (2012) suggested two ways to decrease psychological distress for parents: (a) encourage continual communication between the parents and mental health professionals, and (b) provide home-based therapeutic services for the child that involve each member of the family in the treatment process. The goal of these services is to reduce the distress experienced by parents of children with a mental health illness as well as to improve the symptomology and the socialization outcomes for the affected children (Hill, 1998).

In conclusion, it can be particularly traumatic to learn that a child has a mental health illness and the stress of raising the child often has a negative impact on the family unit. More specifically, the psychological health of the parents, regardless of who takes on the primary caregiver role, may be compromised. Thus, in learning how to adapt to raising a child with a mental health illness, it is imperative for parents to gain insight into the specific needs of the family unit as a way to tailor intervention strategies to

complement the family's needs. Researchers have found that efforts to decrease a parent's level of stress and anxiety have been associated with an improvement in the child's mental health illness (Weissman et al., 2006). By parents learning how to manage their own stress and psychological health, both they and their children will experience a greater sense of wellbeing. However, raising a child with a mental health diagnosis may not only affect a parent's psychological wellbeing, but physical health as well. The existing literature on the effect of a child's mental health illness on a parent's physical health will be discussed in the next section.

Impact of a Child's Mental Health Illness on a Parent's Physical Health

The physical health of parents of children with chronic illnesses (such as those children who require mental health and medical health services beyond that required by children generally) has been an understudied issue in social research (Beckencamp, Groothof, Bloemer, & Tomic, 2014). In studies to date, caregiver health problems have been linked to taking care of an elderly parent or caring for a child with recurrent cancer; however, few inquiries have specifically concentrated on the physical health of parents of children with a mental health illness (Miodrag & Hodapp, 2010). Therefore, in this section I will first review how stress in general affects health and next how caregiver burden may affect health.

Parents of mentally ill children deal with a wide array of difficulties, including chronic stress, which may affect their physical health. Several researchers have indicated that chronic stress may be associated with negative health outcomes among all of us, not limited to parents of children with a mental health diagnosis (Grant et al., 2002; Vitaliano

et al., 2012; Zautra, Burleson, Matt, Roth, & Burrows, 1994). Chronic stressors can affect many parts of the body, particularly the cardiovascular, immune, and gastrointestinal systems (Nadkarni, 2012). For example, researchers discovered that chronic stress increased risk of heart damage, mild hypertension, and coronary heart disease (Miodrag & Hodapp, 2010).

Chronic stress can affect sleep and result in an individual having difficulty falling asleep and difficulty staying asleep (Kiecolt-Glaser & Glaser, 1998). It may lead to sleep deprivation that has been associated with somatic complaints, including exhaustion, chronic fatigue, and lower levels of energy (Allik, Larrson, & Smedje, 2006; Bekenkamp et al., 2014; Hevod, Annernen, & Wikblad, 2000). Chronic stress may be associated with dysfunction of the immune system, which can result in an increased rate of morbidity and mortality (Miodrag & Hodapp, 2010; Nadkarni, 2012). Researchers showed that chronic stress negatively affected an individual's response to a vaccine, increased the risk of infection, as well as increased the risk of getting a cold (Grant et al., 2002; Vitaliano et al., 2012; Zautra et al., 1994). The constant strain on an individual's immune system can lead to systemic inflammation, which can lead to rheumatoid arthritis, type II diabetes, and cancer (Miodrag & Hodapp, 2010). Chronic stress can also affect an individual's gastrointestinal system, the most common illness being irritable bowel syndrome (IBS) (Miodrag & Hodapp, 2010). Thus, stress has a wide range of effects on health in general and given that parents of children with mental health disease are experiencing many stressors, this likely is true for them as well.

There are some data supporting that parents of children with chronic disorders have poor health outcomes. In a study conducted by Busch and Barry (2007), the mothers of children exhibiting chronic emotional, developmental, or behavioral issues reported having mediocre health when compared to mothers of children without chronic illnesses (Busch & Barry, 2007). The stressors of caring for a child with a mental health diagnosis can also have an impact on a parent's ability to adequately care for themselves and several negative outcomes to a parent's physical health can occur (Bourke-Taylor, Howie, & Law, 2010). The everyday stress experienced by a parent with a mentally ill child can even lead to poorer health for the parent in the later years of their life (Murphy, Christian, Caplin, & Young, 2006).

Parental health outcomes have been linked to the severity of a child's mental health illness, the age of a child, and whether behavioral problems coincide with the child's mental health diagnosis (Hastings, 2002; Karst & Van Hecke, 2012). Researchers have indicated that the child's illness and associated symptoms may impact a parent's health. In turn, the health complaints of parents can lead to limitations in their capability to physically take care of their child, problems in a parent's ability to deal with their child's mental health diagnosis, and impairment in a parent's daily functioning (Ha, Hong, Seltzer, & Greenberg, 2008). Additionally, researchers have shown that multiple inpatient hospitalizations for the child and the unwelcome decision to have the child live outside of the family's home can be the result of a parent's health status (Murphy, Christian, Caplin, & Young, 2006). Thus, chronic stress and physical health may have bidirectional relationships.

At times, parents present with unspecified somatic complaints and can suffer from symptoms that can be disabling and cause distress. These symptoms are often correlated with psychosocial stressors (such as raising a child with a mental health illness), functional impairment, and the use of avoidant coping styles (Cruz, 2006). Unexplained somatic complaints are also frequently accompanied by comorbid anxiety and depressive disorders (Nadkarni, 2012; Perugi et al., 2011) as discussed previously. To date, the amount and type of health issues faced by caretakers of children with mental health illnesses is unknown (Miodrag & Hodapp, 2010). The research reviewed here suggested that raising a child with mental health issue may increase somatic symptoms and perceived ill-health. Therefore, identifying a parent's physical health needs is important to the child's functioning along with the stability of the family unit.

Summary

In conclusion, as the researchers discussed previously indicated, chronic stress and trait anxiety are usually related to greater levels of healthcare seeking and also impact parents of children with a mental health diagnosis. Mothers raising a child with a mental health illness, however, may have acquired knowledge of healthcare services and have learned better coping styles, as they have had to learn to deal with the anxiety of rearing a child with a mental health diagnosis as well as dealing with the anxiety of seeking treatment for their children. These mothers might likewise have a higher level of self-efficacy, or the belief that they can care for themselves and not rely on others or outside healthcare services. This higher level of self-efficacy can originate from a more evolved understanding of healthcare services and the confidence of initiating and following

through with the treatment recommendations for their children. Hence, it may be anticipated that high levels of coping and self-efficacy among mothers of children with a mental health diagnosis mediate the association between trait anxiety and healthcare seeking.

The study's objective was to investigate the function that trait anxiety, coping styles, and self-efficacy plays in healthcare utilization of mothers raising a child with a mental health diagnosis. There is a necessity for exploration in this matter because of the rise in costs associated with the use of the healthcare system. Therefore, given the fact that anxiety does affect healthcare utilization, it is imperative to develop an understanding a mother's dysfunctional coping styles and level of self-efficacy as these two factors could be important in decreasing healthcare use in this population. This, in turn, may lead to lower healthcare costs.

Next, Chapter 3 provides a comprehensive description of the design of the study. It also focuses on a description of the study's materials, the processes covered, and details of the basis for the selection of the participants. Finally, a summary of the chapter will be presented.

Chapter 3: Research Method

Introduction

The aim of this quantitative study, which embodied a cross-sectional research strategy, was to explore the ramifications of trait anxiety on the healthcare utilization of mothers raising a child with a mental health diagnosis. This study also analyzed the role of a mother's coping styles and self-efficacy in regard to her use of the healthcare system. Mothers, as opposed to other caretakers, were the identified study group because mothers experience a greater personal impact as a result of their child's mental health diagnosis, tend to blame themselves for their child's mental health illness, and are held most accountable for their child's behaviors (Rodrique et al., 1990; Sharpley et al., 1997; Tarabek, 2011). Weissman et al. (2006) discerned that it was imperative to understand the components that may decrease a mother's anxiety as those factors may give rise to an enhancement in a child's quality of life. The IV for the study was trait anxiety and the DV was healthcare utilization. The mediating variables for the study included coping styles and self-efficacy.

Incorporated in this section are the research design, research method and justification, the location of the study, sample size, and data collection tools. Additionally, the chapter includes an account of the methods used to collect the data and analyses for each of the three hypotheses. Finally, this chapter will focus on steps that were taken to protect the rights of the study's participants.

Research Design and Approach

The goal of this study was to establish whether trait anxiety, coping styles and self-efficacy were associated with healthcare utilization among mothers of children with a mental health diagnosis. This study was considered correlational research and used a cross-sectional research design, based on a convenience sample. If a correlation between the variables was found, this study determined the direction as well as the magnitude of the correlations. Data were collected through surveys, with the use of Survey Monkey along with paper and pencil surveys. The use of a web-based survey was the appropriate instrument and research tool to be able to reach a broad sample of mothers in a specific geographical area. According to Denscombe (2006), there are several advantages to the use of a web-based questionnaire administered through email or the Internet.

However, there were several disadvantages to the use of web-based questionnaires. For example, certain populations may not have had access to the Internet and therefore may have been less likely to respond to a web-based survey. The lack of a trained interviewer may have led to less reliable data and the researcher would not be certain who actually responded to the web-based questionnaire. According to Edwards, Dillman, and Smyth (2014), a respondent to the web-based survey may have also been concerned with computer viruses, online privacy, and website reputability, which may have prevented them from participating in the study.

Research Questions and Hypotheses

The following are the research questions and hypotheses that were established based on a review of the existing literature.

Research Question 1 : Is trait anxiety (as measured by the STAI-D-AD) significantly associated with healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental health diagnosis?

H₀1: There is not a significant association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental diagnosis.

H₁1: There is a significant association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire) among mothers of children with a mental diagnosis.

Research Question 2: Does coping styles (as measured by the Brief COPE Inventory) mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis?

H₀2: Coping styles (as measured by the Brief COPE Inventory) do not mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

H₁2: Coping styles (as measured by the Brief COPE Inventory) do mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

Research Question 3: Does self-efficacy (as measured by the Health Self-Efficacy Measure) mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis?

H₀₃: Self-efficacy (as measured by the Health Self-Efficacy Measure) does not mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire), among mothers of children with a mental health diagnosis.

H₁₃: Self-efficacy (as measured by the Health Self-Efficacy Measure) does mediate the association between trait anxiety (as measured by the STAI-D-AD) and healthcare utilization (as measured by the Healthcare Utilization Measure), among mothers of children with a mental health diagnosis.

Setting and Sample

The sampling frame was comprised of all women (over the age of 18 years) who were mothers of children (ages 3 to 18 years) previously diagnosed with a mental health disorder. The selection of the participants was based on the above-mentioned age criteria. The participants were also required to be residents of Lawrence County, Pennsylvania at the point of data collection. However, mothers of children with the most severe mental health diagnoses requiring placement in a residential treatment facility or therapeutic foster home, were excluded from the study (as the focus of the study was on mothers who were the main caretakers of their children).

The recruiting process for this study consisted of employees of Human Services Center (in particular the outpatient therapists and intake workers) who provided a Survey Invitation Letter (Appendix A) to the mothers of children who were in treatment at the agency. The Survey Invitation Letter (see Appendix A), which provided the link to the self-administered web-based survey, was provided to the potential participants in paper form. The survey was administered through [sureveymonkey.com](https://www.surveymonkey.com). However, participants also had the option to contact me to request a paper copy of the survey. Once the survey was filled out, the raw data was downloaded into the Statistical Package for Social Sciences (SPSS) Version 21 (Green & Salkind, 2010).

During a scheduled outpatient therapy appointment for their child, the outpatient therapists (or intake workers) offered the mothers a Survey Invitation Letter (see Appendix A). The sole role of the outpatient therapists and intake workers was to distribute the Survey Invitation Letter (see Appendix A). The outpatient therapists and intake workers did not explain the study or answer questions about the study. If interested, the outpatient therapist or intake worker provided a Survey Invitation Letter (see Appendix A) to the mother which encompassed a detailed account of the intent of the study as well as the information on how to access the survey via the Internet. The letter also contained my personal phone number and email address in case the participant had questions or did not have access to the Internet and would prefer a paper copy of the survey. If a mother contacted me, a paper copy of the survey (with a study ID number placed in the corner of the survey) was mailed to the potential participant with a self-addressed stamped envelope as a means for the mother to return the survey.

Participants who chose to complete the survey online self-administered the survey at their own convenience, within a six-week time frame, using the website Survey Monkey. Participants only had to access the survey link provided on the Survey Invitation Letter (see Appendix A) one time to complete the survey. During the six-week data collection period, mothers were offered a Survey Invitation Letter (see Appendix A) (as a reminder to complete the survey) each time her child had a therapy appointment at the agency.

Data Collection Instruments

Prior to the beginning of the data collection process, approval from Walden University's Institutional Review Board (IRB) was sought. The approval number from the IRB was 05-03-16-0317004 (Appendix B). There were three instruments used to answer the research questions and test the hypotheses. These instruments included the Brief COPE (Carver et al., 1989), the State-Trait Anxiety Inventory for Adults (STAI-AD) (Spielberger, 1983), and the Health Self-Efficacy Measure (Lee et al., 2008a). For each of the three instruments, the type of instrument as well as the concepts measured by the instrument, will be explained within the following section of this chapter. The methods used by participants to complete each of the questionnaires as well as the validity and reliability of each instrument will also be discussed. Two other instruments for data collection for this study included a maternal report of a child's mental health diagnosis and questions given to the participants in regard to healthcare utilization (developed by the Stanford University Patient Education Research Center) (Lorig, 1996). In regard to the State-Trait Anxiety Inventory for Adults (STAI-AD) (Spielberger, 1983),

permission for reproduction and administration was sought and acquired (Appendix C). Access to the following instruments was open and no permission was required for their use: Brief COPE (Carver et al., 1989; Appendix D), the Health Self-Efficacy Measure (Lee et al., 2008a; Appendix E) and questions given to the participants in regard to healthcare utilization (developed by the Stanford University Patient Education Research Center).

Maternal Report of a Child's Mental Health Diagnosis

All demographic information, including age, gender, race of mother and child were collected as a part of the survey process administered by Survey Monkey (the same information was collected from those mothers that chose to complete the survey in paper form). Each mother was also asked to confirm whether she currently resided in Lawrence County, Pennsylvania and whether her child was currently being treated in a residential treatment facility. In addition, mothers were asked to report on their child's mental health diagnosis.

State-Trait Anxiety Inventory for Adults (STAI-AD)

The State -Trait Anxiety Inventory for Adults (STAI-AD) was used in the study to collect data about a mother's level of trait anxiety when making choices about their own personal healthcare utilization practices (Spielberger, 1970). For this study, a Remote Online Survey License/License to Reproduce was purchased (see Appendix C). This License provided permission to retype and reformat the STAI-AD for online administration as well paper and pencil administration ("State-Trait Anxiety Inventory for Adults", 2015).

The STAI-AD is a 40-item self-report questionnaire. The S-Anxiety Scale (STAI-Form 1) includes twenty statements used to analyze how an individual feels at the present time (Spielberger, 2010). The T-Anxiety Scale (STAI-Form 2) includes twenty statements that analyze how an individual feels in general (Spielberger, 2010). The STAI-T Anxiety Scale has been clinically proven to identify individuals with high levels of neurotic anxiety (Spielberger, 2010). The STAI-AD's target population is individuals ages 16 years or older with a sixth grade reading level (Spielberger, 2010). The STAI-AD for the study was individually administered.

The participants completed the STAI-AD. The responses for the questions of the STAI-AD are based on the follow four-point scale: 1 (*Almost Never*), 2 (*Sometimes*), 3 (*Often*), 4 (*Almost Always*). An example question is "I feel calm". The STAI-AD is divided into two sections: a section that measures the state anxiety (or, short-term anxiety) of the mothers and a section that measures the trait anxiety (or, long-term anxiety) of the mothers. The important qualities of an individual analyzed by the STAI-AD included feelings of uneasiness, worry, nervousness, and tension (Spielberger et al., 1983). The STAI-AD typically took the mothers 10-20 minutes to complete.

According to Spielberger (2010), each item on the STAI-AD is assigned a weighted score from one to four. A self-reported rating of four designates the existence of a high level of anxiety for ten of the S-Anxiety items and eleven T-Anxiety items (for example, "I feel upset"). A high rating of four pointed out the lack of anxiety for the residual ten S-Anxiety items and nine T-Anxiety items (for example, "I feel relaxed"). The sum of the anxiety scales can span from 20-80 (Spielberger, 2010).

To score the anxiety-present items, the self-reported numbers of the printed inventory form correspond with the number assigned for the item. For example, if a respondent self-reports a three for a particular statement, the number assigned for that item when scoring is a three. However, to score the anxiety-absence items, the self-reported numbers must be reversed. For example, if a participant assigns a number one to an item on the questionnaire, it is scored as a four. The anxiety-absent items in which the scoring weights must be reversed include the following:

S-Anxiety: 1, 2, 5, 8, 10, 11, 15, 16, 19, 20

T-Anxiety: 21, 23, 26, 27, 30, 33, 34, 36, 39

In general, scores on the STAI-AD increase as a result of a person's response to physical danger or psychological stress. Consequently, scores on the STAI-AD decrease with an individual's use of relaxation techniques (Spielberger, 2010). For this study, the scores from the 20-item part of the STAI-AD that measured trait anxiety were analyzed. A higher score on the STAI-AD was assumed to indicate that a mother had a high level of trait anxiety, whereas a lower score on the STAI-AD assumed the mother experienced a lower level of trait anxiety.

It was central to determine if the STAI-AD was a valid measure. Construct validity was supported through a study comparing various neuropsychiatric patient groups and normal subjects (Spielberger et al., 1983). The neuropsychiatric patient groups had substantially higher T-Anxiety scores when likened to the normal subjects. This offered confirmation that the STAI differentiates amid normal study groups and neuropsychiatric patient groups (when anxiety was reported as a symptom). Further

differentiation in this study occurred with subjects undergoing general medical and surgical procedures with psychiatric diagnoses (Spielberger et al., 1983). These subjects had higher T-Anxiety scores when compared to general medical patients without psychiatric diagnoses (Spielberger et al., 1983). Metzger (1976) showed that the STAI-AD distinguished between high and low stress situations in an individual's life. According to Elliot, Shewchuk, and Richards (2001), the STAI was a predictor of caregiver distress over time. This indicated that the STAI identified respondents with emotional problems. Furthermore, the STAI correlated highly with other measures of anxiety such as the IPAT Anxiety Scale (Cattell & Schierer, 1963) and the Taylor Manifest Scale (TMAS; Taylor, 1953). These correlations range from 0.85 to 0.73 (Spielberger et al., 1983). Thus, the STAI has good validity. However, if a respondent did not answer three or more questions on the survey, the validity of the measure could be questioned (Spielberger, 2010).

Reliability of the STAI is moderate to good. Internal consistency coefficients for the STAI extended from 0.86 to 0.95 (Spielberger et al., 1983). Test-retest reliability coefficients ranged from 0.65 to 0.84 over a period of two months (Spielberger et al., 1983). More specifically, in a study of male and female high school students ($N = 351$), the test-retest reliability after 30 days was 0.71 for the male students and 0.75 for the female students (Spielberger et al., 1983). After 60 days, the test-retest reliability was 0.68 for the male students and 0.65 for the female students (Spielberger et al., 1983). In another study conducted with male and female college students ($N = 197$), the test-retest reliability after one hour was 0.84 for the males and 0.76 for the females (Spielberger et

al., 1983). After 104 days, the test-retest reliability for the male college students was 0.73 and 0.77 for the female college students (Spielberger et al., 1983).

Brief COPE Inventory

The COPE Inventory was developed to analyze the various methods that people use when reacting to stressful situations (Carver et al., 1989). The instrument measures multiple specific aspects of coping behavior; more specifically, problem-focused, emotion-focused, and dysfunctional coping (Wade et al., 2001). For the Brief COPE, the test content was replicated and utilized for non-commercial research and scholastic purposes without pursuing written permission (Carver, 1997a; see Appendix D).

The COPE Inventory is a 60-item self-report questionnaire. It consists of five scales that quantify specific aspects of problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, and seeking social instrumental support), five scales that measure emotion-focused coping (seeking emotional social support, positive re-interpretation, acceptance, denial, and reliance on religion), and three scales that measure dysfunctional coping styles (venting emotions, behavioral disengagement, and mental disengagement). The responses are measured on a scale from one to four (1 = "I usually don't do this at all"; 2 = "I usually do this a little bit"; 3 = "I usually do this in a medium amount"; and 4 = "I usually do this a lot"). An example question is "I have been using alcohol or drugs to make me feel better". When scoring the COPE, there is no reversal of coding.

The current study employed the Brief COPE, a 28-item condensed version of the COPE Inventory that measured 14 coping reactions to stressful situations (Carver,

1997a). This instrument had been proven appropriate to use in health-related research (Carver, 1997b). The following 14 dimensions, or coping reactions (which are classified as either problem-focused, emotion focused, or dysfunctional coping styles), were included in the Brief COPE: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. For the purpose of this study, the following dysfunctional coping styles were considered: venting (items 9 and 21), behavioral disengagement (items 6 and 16) and substance use (items 4 and 11).

The Brief COPE excludes two scales from the full version of the COPE Inventory, decreases items to two scales, and includes a new scale on self-blame. This version of the COPE Inventory has been used with breast cancer patients as well as individuals recovering from Hurricane Andrew. The Brief COPE was developed due to individuals becoming impatient when responding to the full version of the COPE (Carver, 1997b). The Brief COPE asks participants to respond to the items on the questionnaire centered on a specific event. For example, in this study, the mothers were requested to answer the items based on the ways that they coped with raising a child with a mental health diagnosis.

Yusoff, Low, and Yip (2009) discussed previous research that ascertained the reliability and validity of the Brief COPE. The Cronbach's alpha values were high for some of the dimensions, including Religion ($\alpha = 0.82$) and Substance Use ($\alpha = 0.90$) (Yusoff et al., 2009). Dimensions with acceptable values for Cronbach's alpha included

the following: Active Coping ($\alpha = 0.68$), Planning ($\alpha = 0.73$), Positive Reframing ($\alpha = 0.64$), Acceptance ($\alpha = 0.57$), Humor ($\alpha = 0.73$), Using Emotional Support ($\alpha = 0.71$), Using Instrumental Support ($\alpha = 0.64$), Self-Distraction ($\alpha = 0.71$), Denial ($\alpha = 0.54$), Venting ($\alpha = 0.50$), Behavioral Disengagement ($\alpha = 0.65$), and Self-Blame ($\alpha = 0.69$) (Yusoff et al., 2009).

In a study on 168 individuals impacted by Hurricane Andrew, the Brief COPE was administered three different times. Despite the fact that this was a small sample size, it had the advantage of being a nonstudent sample of individuals who experienced a real life stressor (Carver, 1997b). The initial data were collected ($N = 168$) three to six months after Hurricane Andrew, the second set of data ($N = 124$) were collected six months later, and the third set of data ($N = 126$) were collected one year later. According to Carver (1997b), each of the assessments was utilized independently to analyze the reliabilities of the scales. During the reliability analysis of the scales, the alpha reliabilities were averaged across the three data collection sessions of the Brief COPE in this sample (Carver, 1997b). According to Carver (1997b), even though each of the scales consist of just two items each, their reliabilities met or were greater than 0.50, which was regarded as minimally acceptable. Reliabilities for each scale (except for Venting, Denial, and Acceptance) were greater than 0.60.

The Brief COPE was also used by Yusoff et al. (2010) in a study of 37 Malaysian women diagnosed with breast cancer. For the intent of analyzing the reliability and validity of the Brief COPE, there were two phases for the study. During the first phase, the Brief COPE was given to the women diagnosed with breast cancer two to three weeks

after surgery (and before the first round of chemotherapy). During the second phase, the Brief COPE was given to the women diagnosed with breast cancer ten weeks after surgery (and during the third round of chemotherapy). The test-retest reliability was evaluated with the use of the Intraclass Correlation Coefficient (ICC); the ICC ranges from 1 (perfect reliability) to 0 (Yusoff et al., 2010). The internal consistency of each of the scales was determined by Chronbach's alpha. The effect size was also assessed for each dimension of the Brief COPE using the Effect Size Index.

For the study, the internal reliability for each of the scales ranged from 0.25 to 1.00. The range for the ICC for each of the scales was 0.05 to 1.00, whereas the effect size for each of the scales ranged from 0 to 0.53 (which indicates a low to moderate effect size). According to Yusoff et al. (2010), the wide variation for the internal reliability, ICC, and effect size was attributed to the different phases of treatment during which the Brief COPE was administered and not due to the low sensitivity of the scale itself.

Cooper, Katona, and Livingston (2008) determined reliability, convergent validity and concurrent validity of the Brief COPE. In a study of family caregivers of individuals with dementia, the Brief COPE was administered during three data collection sessions (Cooper et al., 2008). During the initial data collection session, 125 family caregivers completed the Brief COPE. The second data collection session occurred one year later ($N= 92$) and the third data collection session occurred two years later ($N = 74$) (Cooper et al., 2008). The internal consistency scores were sound for the Emotion-Focused, Problem-Focused, and Dysfunctional Coping subscales of the Brief COPE ($\alpha = 0.72$, 0.84 , 0.75 , respectively; Cooper et al., 2008). The test-retest reliability after one year was

established for each of the three subscales among the members of the study in whom Burden scores did not alter significantly ($r = 0.58$, $r = 0.72$, $r = 0.68$, $p < 0.001$; Cooper et al., 2008). However, after two years, the change in Burden score correlated with alterations in the Problem-Focused and Dysfunctional Coping subscales ($r = 0.33$, $r = 0.32$; $p < 0.01$), but not with a modification on the Emotion-Focused subscale (Cooper et al., 2008).

Convergent and concurrent validity of the Brief COPE was determined through a regression analysis (Cooper et al., 2008). The outcome of the regression analysis specified that Emotion-Focused Coping was predicted by Secure Attachment ($\beta = 0.23$) as well as Problem-Focused Coping ($\beta = 0.68$). Dysfunctional Coping was predicted by Burden ($\beta = 0.36$), Less Secure Attachment ($\beta = 0.25$) and Problem-Focused Coping ($\beta = 0.36$). For each of the aforementioned, $p < 0.05$, which indicated statistical significance. The regression analysis also indicated Problem-Focused Coping was predicted by Avoidant Attachment ($\beta = 0.22$), Social Support ($\beta = 0.10$), Less Secure Attachment ($\beta = -0.25$), Emotion-Focused Coping ($\beta = 0.53$), and Dysfunctional Coping ($\beta = 0.25$).

Health Self-Efficacy Measure

The objective of the Health Self-Efficacy Measure is to analyze an individual's beliefs about their capability to manage their health (Lee et al., 2008a). The Health Self-Efficacy Measure was constructed during an investigation between the association of adverse emotions and health self-efficacy in regard to an individual's use of health information (Lee et al., 2008a). For the Health Self-Efficacy Measure, the test content

was replicated and utilized for non-commercial research and scholastic purposes without pursuing written permission (Lee et al., 2008a).

An individual's health self-efficacy is assessed employing five items requesting individuals to demonstrate their level of agreement on a five-point scale. The five-point scale ranges from 0 ('Disagree Very Much') to 4 ('Agree Very Much'). Items of the Health Self-Efficacy Measure focused on asking individuals about their self-confidence, goal setting, goal attainment, current practices, and feelings of control related to health (Lee et al., 2008b). An example question is "I am confident that I have a positive effect on my health". In a sample of 122 newly diagnosed breast cancer patients given the Health Self-Efficacy Measure, the baseline data indicated a mean of 2.88, a standard deviation of 0.69 and the Cronbach's alpha (which is a measure of internal consistency) was 0.84. Post-survey data (collected after a two-month period) resulted in a mean of 2.93, a standard deviation of 0.53, and a Cronbach's alpha of 0.75 (Lee et al., 2008b). A Cronbach's alpha of 0.70-0.90 indicated an acceptable level of internal consistency (Tavokol & Dennick, 2011). However, one weakness of this instrument was the lack of validity data. As this questionnaire has been used by previous researchers (even without the validity data), the lack of validity will not be addressed in this study (Lee et al., 2008a; Petrovic, Burney, & Fletcher, 2011; Tucker-Seeley, Mitchell, Shires, & Modlin, 2015).

Healthcare Utilization Questionnaire

In this study, questions were presented to participants on their healthcare utilization practices. According to Grotle, Garrett, Jenssen and Stuge (2012), self-report

questionnaires used for analyzing health-related issues displayed a high level of internal consistency, test-retest reliability, and construct validity. For example, reliability has been investigated in studies of alcohol (Shillington & Clapp, 2000; Winters, Stinchfield, Henly, & Schwartz, 1991) and drug use (Brenner et al., 2002); the results indicated that the reliability levels were high for the self-reported measures assessed.

Validation studies of health-related self-report questionnaires administered in various settings (including the workplace and schools) suggested that self-report questionnaires reflected actual health-related behaviors (Cook, Bernstein, & Andrews, 1997). However, the accuracy of self-reported health behaviors varied by the populations surveyed. For example, Magura and Kang (1997) found that individuals within the criminal justice system provided the least reliable data on health behaviors. However, in a study conducted by Sussman, Dent, Burton, Stacy, and Flay (1995) students provided the most valid responses.

A Healthcare Utilization Questionnaire consisting of four questions (created by the Stanford University Patient Education Research Center), was provided to the participants (Lorig, 1996). For the Healthcare Utilization Questionnaire, the test content was replicated and utilized for non-commercial research and scholastic purposes without pursuing written permission (Lorig, 1996). The four questions included the following: “In the past six months, how many times did you visit a physician (do not include emergency room visits or hospital stays)?”; “In the past six months, how many times did you visit a hospital emergency room?”; “How many different times did you stay in a

hospital overnight or longer in the past six months?"; and "How many nights did you spend in the hospital the past six months?".

Each of the questions was scored separately, as participants were required to provide a numeric response. The psychometric properties, provided by Lorig (1996) for each of the questions are as follows (the test-retest reliability for each question was six months): physician visits: $N = 1,128$, $M = 5.33$, $SD = 5.23$, test-retest reliability = 0.76; emergency department visits: $N = 1,128$, $M = 0.40$, $SD = 0.93$, test-retest reliability = 0.94; times hospitalized: $N = 1,128$, $M = 0.23$, $SD = 0.76$, test-retest reliability = 0.89; nights hospitalized: $N = 1,130$, $M = 1.31$, $SD = 5.33$, test-retest reliability = 0.97.

Data Analysis

In this study, the research variables included the following: anxiety (IV), healthcare utilization (DV), and coping styles and self-efficacy (the mediating variables). There were three subscales for coping styles: emotion-focused coping, problem-focused coping, and dysfunctional coping. However, the only subscale used in this study as a mediating variable was dysfunctional coping. In general, dysfunctional coping, more so than the other scales, has been shown to be linked to increased levels of healthcare utilization (McCrae, 1997; Rood, McConnell, & Pantalone, 2015) and worse health outcomes (Drossman et al., 2000; Woodhead, Cronkite, Moos, & Timko, 2014).

The level of education and age of the mothers were used as control variables to investigate possible confounding relationships. The level of a woman's education was included as a control variable as it may influence her access to better healthcare insurance, which may lead to availability of therapeutic services to assist in learning

effective coping styles to deal with anxiety (Frankfort-Nachmias & Nachmias, 2008).

Age was also incorporated as a control variable because persons of the same age were born during the same time period (thus placing them into a generation different from those of another age). This difference may account for bias; women from different generations may have had different beliefs about the way to cope with anxiety as well as beliefs about the healthcare system (Creswell, 2009).

The data were examined using the Statistical Package for Social Sciences (SPSS) Version 21 (Green & Salkind, 2010). For research question 1 a binary logistic regression was performed to determine if healthcare utilization (DV) (as measured by a Healthcare Utilization Questionnaire; Lee et al., 2008) could be predicted from trait anxiety (IV) (as measured by the STAID-AD; Spielberger, 1983), while controlling for level of education and the mother's age. As there were four questions the participants answered in regard to healthcare utilization, a separate binary logistic regression was run for each of the questions.

For research questions 2 and 3 mediation was tested using the Sobel test, which verified the significance of a mediation effect. The Sobel test analyzed whether a mediator carried the influence of the IV to the DV. To gather the data for the Sobel test, the following statistical tests were conducted: a regression analysis was run with trait anxiety (IV) predicting coping styles, a regression analysis was run with trait anxiety (IV) predicting self-efficacy, a regression analysis was run with trait anxiety (IV) and coping styles predicting health care utilization (DV) and a regression analysis was run with trait anxiety (IV) and self-efficacy predicting healthcare utilization (DV).

Threats to Study Validity

There were several risks to the validity of the study. As stated by Creswell (2009), there are multiple stages of the research process in which internal threats to validity can occur including the following: the procedures for the experiment, the treatments put into place during the study and the experiences of each of the study's participants. Any danger to the internal validity of a study will make it problematic for an investigator to make valid deductions from the group of participants. Internal validity emphasizes eliminating study variables that are not well-defined and that may influence the results of the study (Frankfurt-Nachmias & Nachmias, 2008). In this study, internal validity could have been compromised if a correct assessment was not made that a change in the IV (anxiety) was accountable for the observed variation in the DV (healthcare utilization). Internal validity may also have been affected if a correct assessment was not made that variation in healthcare utilization may have been attributed to other causes.

Creswell (2009) also discussed threats to the external validity of a study. These threats can happen when an incorrect inference is made from the researcher based on the sample used in the study. External validity entails taking a study's findings and applying them to bigger populations and to multiple settings (Frankfurt-Nachmias & Nachmias, 2008). In this study, external validity may have been compromised, as the results obtained from the mothers residing in Lawrence County, Pennsylvania may not have been applicable to the general population of mothers in other settings. Two additional categories of threats to validity include statistical conclusion validity (which happens

when statistical suppositions are erroneously made) and construct validity (which happens when variables are not competently outlined). In a study, a threat to statistical conclusion validity can occur if a researcher makes an incorrect conclusion about a relationship in his or her observations. For example, it is possible that a researcher can conclude that there was a relationship between a study's variables when there was not a relationship or can conclude that there was not a relationship between a study's variables when a relationship did exist. Construct validity may also be compromised if a researcher did not think through the study's concepts and define them in a thorough manner.

There are also several factors that can affect the validity of self-report questionnaires. For example, self-report questionnaires rely on the honesty of the participants, as individuals tend to want to appear in a positive manner (also known as, social desirability). Participants may also lack insight or an accurate historical account of their behaviors to be able to respond to the questions accurately. The respondent's privacy and confidentiality may affect the provided responses, as fear of reprisal (especially if the behaviors are not socially acceptable) may affect the responses provided. Another issue affecting the validity of self-report questionnaires is that a participant may not fully understand the questions, depending on the topic of the questions asked.

Sample Size

In a study, the sample must have sufficient statistical power to yield significant results. The sample size for this study was calculated using the following three criteria: the power of the study, the effect size, and the level of significance. The appropriate

sample size for the study was determined with the use of the G*Power statistical program (Faul, Erdfelder, Buchner, & Lang, 2009). The test family used in the calculation was a Z test and the statistical test used was the logistic regression. G*Power analysis was conducted with the use of 5% alpha, 80% power, and a squared effect size of 0.0784 (Mazoni, Pagnini, & Molinari, 2008). The effect size was comparable to a study carried out by Gurmankin et al. (2007) that was based on similar variables, including anxiety and healthcare utilization (Cohen's $d = 0.58$; effect size = 0.280). The results of the G*Power analysis disclosed a required sample size of 113, a critical Z of 1.96, and an actual power of 0.952.

Protection of Participant's Rights

Participants in the study were provided Informed Consent (Appendix F) information before any data were collected. Informed Consent (see Appendix F) included specific information in regard to the purpose of the study as well as an explanation of each participant's right, including the right for each participant to discontinue their commitment to the study at any time. Each participant was also advised that the information gathered was to be used for research purposes only and that each participant would be kept anonymous. If a participant decided to leave the study at any time, no further communication between the potential participant and myself was pursued and any partly collected data were addressed statistically during the data analysis. The completion and return of the survey indicated the participant's acknowledgement of consent.

No identifying information was collected from participants. The web-based surveys did not record the participant's name, address, or phone number to ensure privacy. The data collected from the web-based surveys was stored on a thumb drive and placed in a locked filing cabinet at all times. All surveys completed by pencil and paper were completed anonymously and each was identified only through the use of a study ID number. No link was kept between the study ID number and the participant's name or other identifying information. The information obtained (both on the thumb drive and paper copies of the completed questionnaires) was stored in a locked file (for paper and pencil questionnaires) and electronically on a password-protected computer in a password-protected file. Only I will have access to the completed surveys.

Ethical and Confidentiality Considerations

During completion of the instruments, it was a possibility that the participants of the study may have experienced emotional reactions to the questions or that the questions made the participants feel uncomfortable. Within the Informed Consent Form (see Appendix F), I explained to each participant that she had the right to skip questions if those questions made her feel uneasy or she could choose to discontinue participation in the study at any time. Also, within the content of the Informed Consent form (see Appendix F), the telephone number to Human Services Center, located in Lawrence County, Pennsylvania, as well as the telephone number for the Crisis Intervention line was provided to the participants. Each participant was encouraged to use the provided numbers if she experienced stress induced by the questions on the questionnaires. Overall, the ethical concerns were negligible and the advantages of the study emerged to

offset the risks, as the results of the study were generalized and assisted in improving healthcare utilization in the identified population. The Walden University Institutional Review Board (approval number 05-03-16-0317004; see Appendix B) reviewed the risks and benefits of the study.

Summary

This study intended to evaluate the impact of trait anxiety on the healthcare utilization practices of mothers of children with a mental health diagnosis. Trait anxiety was measured through the use of the trait anxiety subscale of the STAI-AD (Spielberger, 1983), coping styles were measured using the Brief COPE Inventory (Carver et al., 1989), and self-efficacy was measured through the use of the Health Self-Efficacy Measure (Lee et al., 2008). A mother's healthcare utilization practices were measured using a self-report questionnaire (Lorig, 1996). Demographic information, including a mother's age and level of education, was also collected. It was considered that the relationships between the mother's trait anxiety, healthcare utilization, coping styles, and self-efficacy (after controlling for a mother's age and level of education) was analyzed using a binary logistic regression.

Next, Chapter 4 provides a comprehensive account of the study's results. It also focuses on a description of the study's data collection procedures, distributions of the variables, hypotheses testing, and Sobel tests for mediation. Finally, a summary of the chapter will be presented.

Chapter 4: Results

Introduction

The intent of the study was to evaluate whether trait anxiety, coping styles, and self-efficacy tended to be associated with healthcare utilization among mothers of children with a mental health diagnosis. This potential association was determined by evaluating whether there were associations among (a) a mother's Brief COPE (Carver et al., 1989) survey data, (b) a mother's STAI-D-AD (Spielberger, 1983) survey data, (c) a mother's Health Self-Efficacy Measure (Lee et al., 2008a) survey data, and (d) a mother's Healthcare Utilization Questionnaire (Lorig, 1996) survey data. In addition, I evaluated whether the IV, anxiety, caused a change in the DV, healthcare utilization, by exerting influence through two mediating variables (coping styles and self-efficacy). The level of education and age of the mothers were used as control variables to investigate possible confounding relationships. The results in Chapter 4 are presented in six sections: data collection, sample descriptives, normal distribution of the variables, hypotheses testing, Sobel tests of mediation, and a summary.

Data Collection

This study involved the collection of primary data from 152 mothers (over 18 years of age) of children (3 to 18 years of age) who had previously been diagnosed with a mental health disorder. Participants were recruited from Human Services Center, located in New Castle, Pennsylvania between May 2, 2016 through June 13, 2016. Employees of Human Services Center (more specifically, the outpatient therapists and intake workers) provided a Survey Invitation Letter (see Appendix A) to mothers of children with a

mental health disorder during one of their pre-scheduled appointments at the agency. The Survey Invitation Letter (see Appendix A) clarified the purpose of the study, provided a link to take part in the study, and contact information in case the potential participant had any questions or did not have access to the Internet and would have preferred a paper copy of the survey. The outpatient therapists and intake workers did not explain the study or answer questions about the study.

Sample Descriptives

The sample descriptives are summarized in Tables 1 (mothers) and 2 (children). The mothers in this study ($N=152$) were primarily ages 30-49 years (90.8%), Caucasian (57.9%) and high school graduates (63.2%). Mothers reported about their children who were primarily ages 3-6 years (34.2%) and Caucasian (49.3%). All of the children (100%) were residing in their mother's homes in Lawrence County, Pennsylvania at the time of data collection.

Table 1

Descriptive Characteristics of Mothers Raising Children with a Mental Health Diagnosis

Demographic	Level	$N = 152$
Age (years)	18-29 years	13 (8.6%)
	30-49 years	138 (90.8%)
	50 years and older	1 (0.70%)

(table continues)

Demographic	Level	N = 152
Education	Some high school	10 (6.6%)
	High school graduate	96 (63.2%)
	Some college	12 (7.9%)
	Technical training	15 (9.9%)
	College graduate	17 (11.2%)
	Post graduate work	1 (0.70%)
	Post graduate degree	1 (0.70%)
Race	Asian	2 (1.3%)
	African American	50 (32.9%)
	Caucasian	88 (57.9%)
	Hispanic	5 (3.3%)
	Multiracial	7 (4.6%)

Table 2

Descriptive Characteristics of Children with a Mental Health Diagnosis

Demographic	Level	N=152
Age (years)	3 or younger	0 (0%)
	3 to 6 years	52 (34.2%)
	7 to 10 years	23 (15.1%)
	11 to 14 years	34 (22.4%)
	15 to 18 years	43 (28.3%)
Race	Asian	4 (2.6%)
	African American	31 (20.4%)
	Caucasian	75 (49.3%)
	Hispanic	4 (2.6%)
	Multiracial	38 (25.0%)

Normal Distribution of the Variables

Prior to data analysis, the variables were assessed for normality. As most statistical tests rely upon the assumption of normality, any deviations from normality may

lead to those statistical tests being inaccurate (Shurtz, 2001). A normal distribution indicated that the data were plotted in a symmetrical manner and the grouping of the data occurred at values that were close to the mean and tailed off symmetrically away from the mean (D'agostino, Belanger, & D'agostino., 1990). Skewness, or the measure of the data set's symmetry, was assessed. A perfectly symmetrical (normal) data set has a symmetry of zero (Shurtz, 2001). A positive skewness shows that the size of the right-handed tail is larger than the left-handed tail, while a negative skewness specifies the opposite (Joaness & Gill, 1998). If skewness is larger than 1 or -1, symmetry may be substantial (Shurtz, 2001). Kurtosis is the degree of the heaviness of the tails of a distribution. According to DeCarlo (1997), "positive kurtosis indicates heavy tails and peakedness relative to the normal distribution, whereas negative kurtosis indicates light tails and flatness" (p. 292).

The IV, anxiety, was normally distributed. The scores for trait anxiety ranged from 32 to 65 ($M = 50.1$, $SD = 7.26$), with skewness of -0.232 ($SE = 0.20$) and kurtosis of -0.361 ($SE = 0.39$). The mediating variables for the study included coping styles and self-efficacy. The scores for coping styles ranged from 8 to 21 ($M = 14.3$, $SD = 2.27$). Coping styles was normally distributed, with skewness of 0.028 ($SE = 0.20$) and kurtosis of -0.176 ($SE = 0.39$). The scores for self-efficacy ranged from 4 to 19 ($M = 13.1$, $SD = 3.58$; see Figure 1). Self-efficacy was non-normally distributed, with skewness of -0.156 ($SE = 0.20$) and kurtosis of -0.551 ($SE = 0.39$). A negative skewness for self-efficacy indicated that the size of the left-handed tail was larger than the right-handed tail (Joaness & Gill, 1998; see Figure 1). A skewness of -0.156 indicated that the data were fairly

symmetrical (Groeneveld & Meeden, 1984). As the kurtosis for self-efficacy was less than zero (-0.551), it indicated that the distribution was light-tailed and lacked outliers (see Figure 1).

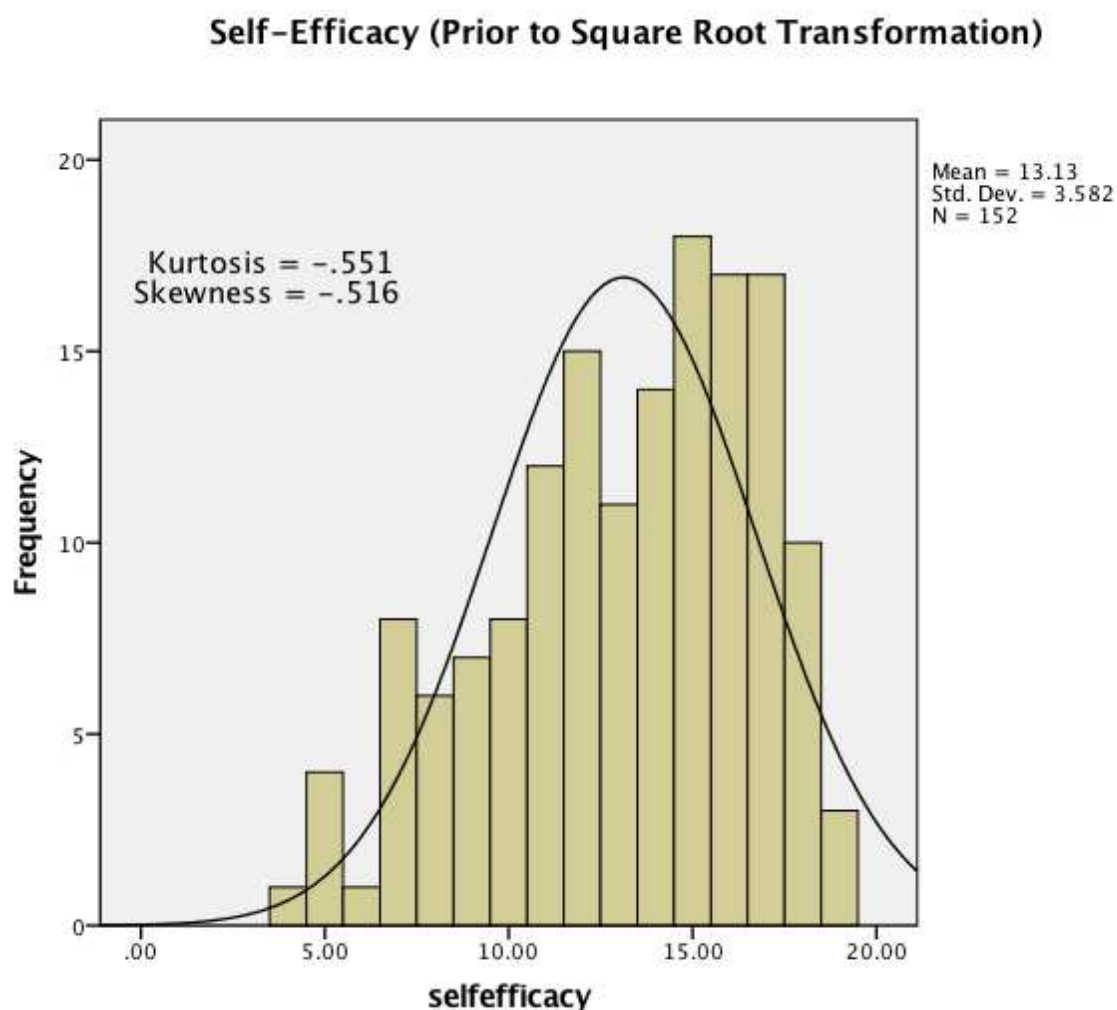


Figure 1. *Histogram of the Raw Distribution of the Self-Efficacy Scores (Prior to the Square Root Transformation) of Mothers of Children with a Mental Health Diagnosis Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.*

As seen in Figure 2, self-efficacy was normalized with a square root transformation as evidenced by improved kurtosis and skewness. After normalization, the

scores for self-efficacy ranged from 2 to 4.36 ($M = 35.6$, $SD = 0.53$), with skewness of -0.824 ($SE = 0.20$) and kurtosis of 0.064 ($SE = 0.39$).

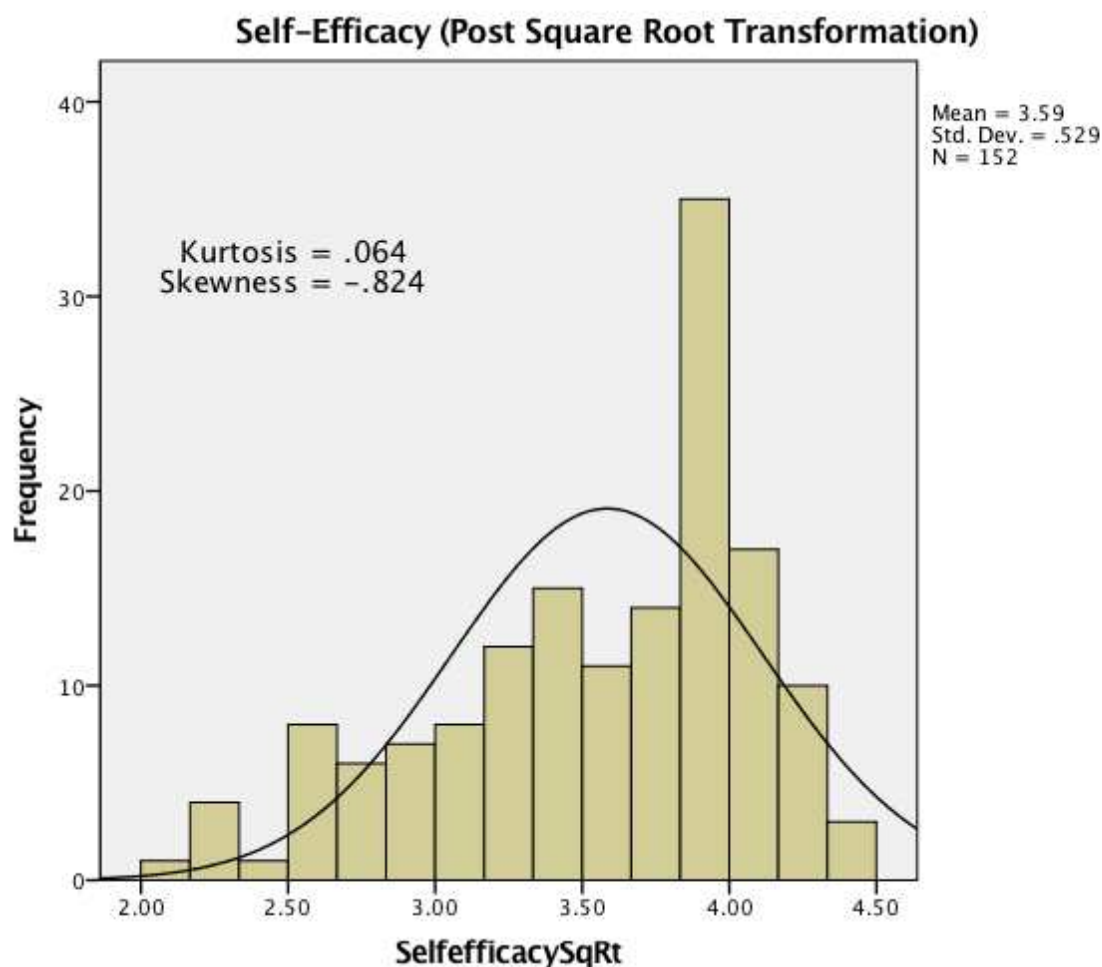


Figure 2. Histogram of the Raw Distribution of the Self-Efficacy Scores (Post Square Root Transformation) of Mothers of Children with a Mental Health Diagnosis Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.

The DV, healthcare utilization, was measured by four questions: “In the past six months, how many times have you visited a physician?” (Question 1), “In the past six months, how many times did you go to the hospital or emergency room?” (Question 2), “How many different times did you stay in a hospital overnight or longer in the past six

months?” (Question 3) and “How many total nights did you spend in the hospital in the past six months?” (Question 4). As is usually found with healthcare utilization data, all four questions were non normally distributed with most participants making none to few healthcare visits (see Figures 3, 4, 5, and 6). Several attempts were made to normalize the data, including a square root transformation, a log transformation, and an inverse transformation. However, the data remained non normal. In an attempt to use the data for analyses, the variables were dichotomized as most participants reported one visit (median score) and very few had more than one visit. Minimal responses for some of the choices on the healthcare questionnaire did not yield enough data to make a meaningful interpretation. Details are given below for each healthcare utilization questions.

Healthcare Utilization Question 1: "In the Past Six Months, How Many Times Have You Visited a Physician?" (Prior to Dichotomizing the Variable)

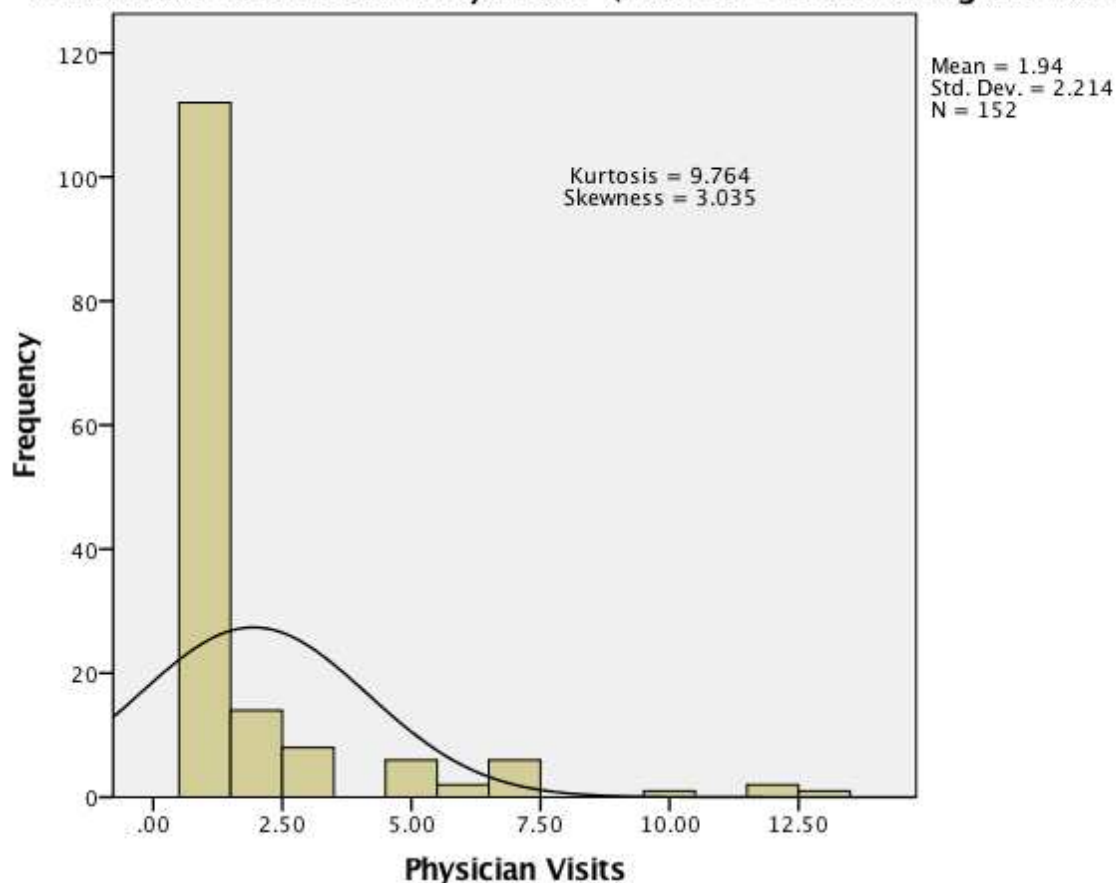


Figure 3. *Histogram of the Raw Distribution of the Healthcare Utilization Question 1 (number of physician visits) (Prior to Dichotomizing the Variable) is Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.*

Prior to dichotomizing the variable, the scores for Healthcare Utilization Question 1 (number of physician visits), ranged from 1 to 13 ($M = 1.94$, $SD = 2.21$; see Figure 3). A response of zero was not included in the range, as none of the participants provided a response of zero for this question. Number of physician visits was non normally distributed, with skewness of 3.035 ($SE = 0.20$) and kurtosis of 9.764 ($SE = 0.39$). A

skewness of 3.035 indicated that the data were highly skewed (Groeneveld & Meeden, 1984). As the kurtosis for physician visits was greater than zero (9.764), it indicated that the distribution was heavy-tailed.

The healthcare utilization variable for the number of physician visits was dichotomized, as 73.7% of the participants responded that they had one doctor visit within the previous six months. The variable was dichotomized by coding one physician visit as “1” ($n = 112, 73.7\%$) and all other numbers of physician visits as “2” ($n = 40; 26.3\%$).

Healthcare Utilization Question 2: "In the Past Six Months, How Many Times Did You Go to the Hospital Emergency Room?" (Prior to Dichotomizing the Variable)

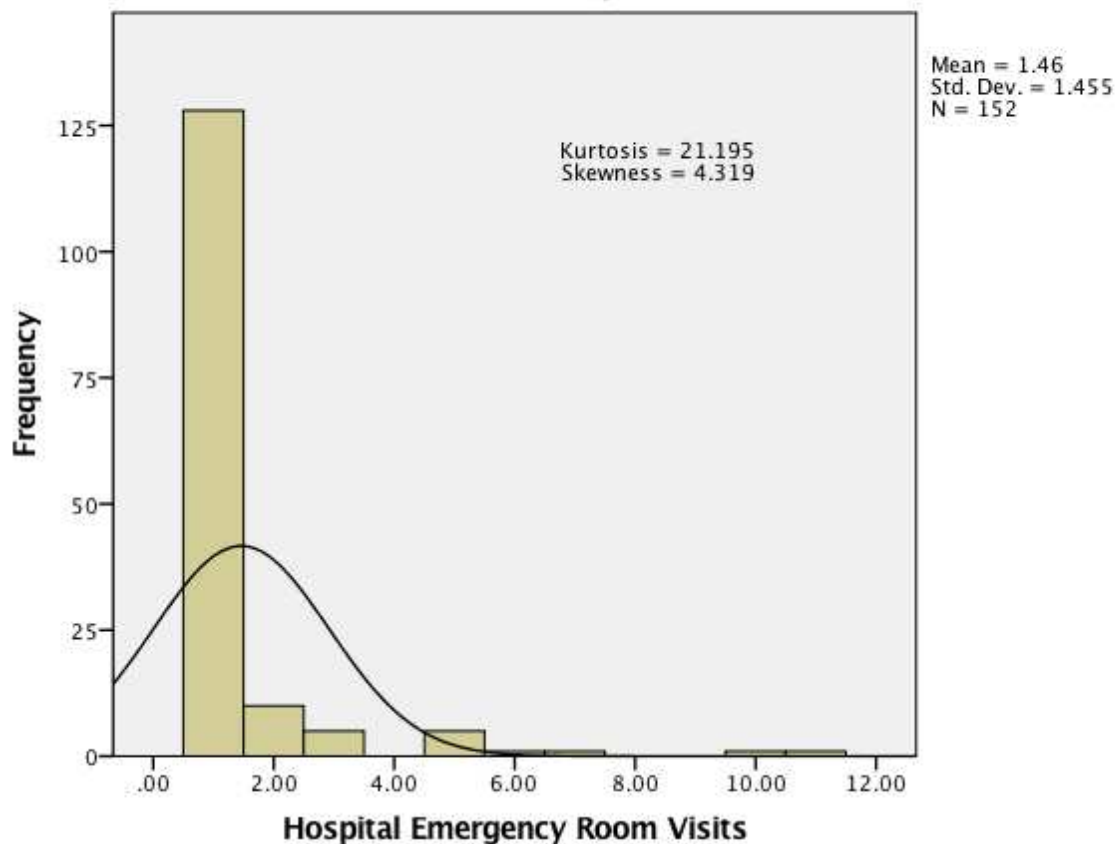


Figure 4. *Histogram of the Raw Distribution of the Healthcare Utilization Question 2 (number of hospital emergency room visits) (Prior to Dichotomizing the Variable) of Mothers of Children with a Mental Health Diagnosis Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.*

Prior to dichotomizing the variable, the scores for Healthcare Utilization Question 2 (number of hospital emergency room visits) ranged from 1 to 11 ($M = 1.46$, $SD = 1.46$; see Figure 4). A response of zero was not included in the range as none of the participants provided a response of zero for this question. The number of hospital emergency room visits was non normally distributed, with skewness of 4.319 ($SE = 0.20$) and kurtosis of 21.195 ($SE = 0.39$). A positive skewness indicated that the size of the right-handed tail was larger than the left-handed tail (Joaness & Gill, 1998). A skewness of 4.319 indicated that the data were highly skewed (Groeneveld, 1984). As the kurtosis for the number of hospital emergency room visits was greater than zero (21.195), it indicated that the distribution was heavy-tailed.

The healthcare utilization variable for the number of hospital emergency room visits was dichotomized, as 84.2% of the participants responded that they had one hospital emergency room visit within the previous six months. The variable was dichotomized by coding one hospital emergency room visit as “1” ($n = 112$, 84.2%) and all other numbers of hospital emergency room visits as “2” ($n = 40$; 15.8%).

Healthcare Utilization Question 3: "How Many Different Times Did You Stay in the Hospital Overnight or Longer in the Past Six Months?" (Prior to Dichotomizing the Variable)

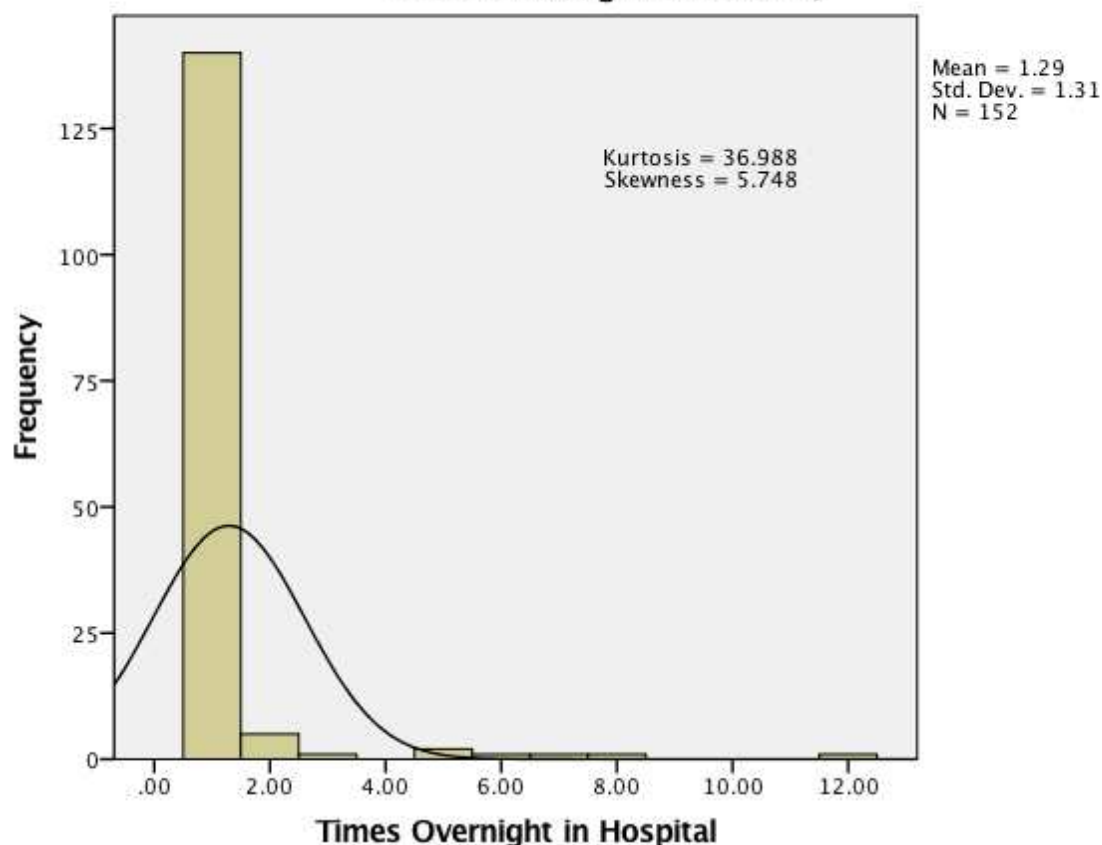


Figure 5. *Histogram of the Raw Distribution of the Healthcare Utilization Question 3 (number of times in a hospital overnight or longer) (Prior to Dichotomizing the Variable) of Mothers of Children with a Mental Health Diagnosis Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.*

Prior to dichotomizing the variable, the scores for Healthcare Utilization Question 3 (number of times in a hospital overnight or longer) ranged from 0 to 12 ($M = 1.29$, $SD = 1.31$; see Figure 5). The number of times in a hospital overnight or longer was non normally distributed, with skewness of 5.748 ($SE = 0.20$) and kurtosis of 36.988 ($SE = 0.39$). A positive skewness indicated that the size of the right-handed tail was larger than

the left-handed tail (Joaness & Gill, 1998). A skewness of 5.748 indicated that the data was highly skewed (Groeneveld, 1984). As the kurtosis for the number of times in a hospital overnight or longer was greater than zero (36.988), it indicated that the distribution was heavy-tailed.

The healthcare utilization variable for the number of times in a hospital overnight or longer was dichotomized, as 92.0% of the participants responded that they had spent zero or one time in a hospital overnight or longer within the previous six months. The variable was dichotomized by coding 0 or 1 physician visits as “1” ($n = 140$, 92.0%) and all other numbers of times overnight or longer within the previous six months as “2” ($n = 12$, 8.0%).

Healthcare Utilization Question 4: "How Many Total Nights Did You Spend in the Hospital in the Past Six Months?" (Prior to Dichotomizing the Variable)

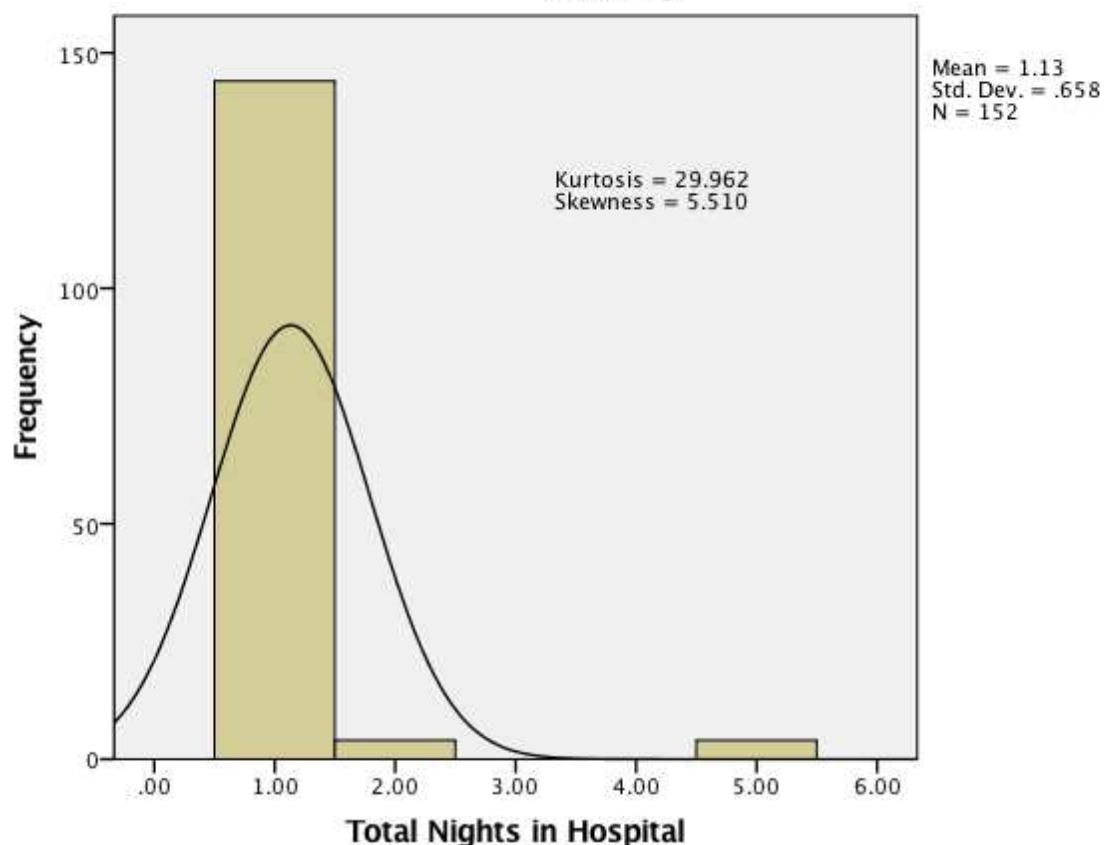


Figure 6. *Histogram of the Raw Distribution of the Healthcare Utilization Question 4 (number of total nights in a hospital) (Prior to Dichotomizing the Variable) of Mothers of Children with a Mental Health Diagnosis Superimposed by a Theoretical Normal Distribution Curve with Kurtosis and Skewness Included.*

Prior to dichotomizing the variable, the scores for Healthcare Utilization Question 4 (number of total nights in a hospital) ranged from 0 to 5 ($M = 1.13$, $SD = 0.66$; see Figure 6). The number of total nights in a hospital was non normally distributed, with skewness of 5.510 ($SE = 0.20$) and kurtosis of 29.962 ($SE = 0.39$). The sample

frequencies are summarized in Table 6. A positive skewness indicated that the size of the right-handed tail was larger than the left-handed tail (Joaness & Gill, 1998). A skewness of 5.510 indicated that the data were highly skewed (Groeneveld, 1984). As the kurtosis for the number of total nights in a hospital was greater than zero (29.962), it indicated that the distribution was heavy-tailed.

The healthcare utilization variable for the total number of nights in the hospital the previous six months was dichotomized, as 94.7% of the participants responded that they spent zero or one total night in the hospital within the previous six months. The variable was dichotomized by coding 0 and 1 total night in the hospital as “1” ($n = 144$, 94.7%) and all other total number of nights in a hospital as “2” ($n = 8$; 5.3%).

Hypotheses Testing

To test the hypothesis for hypotheses one that there was a significant association between trait anxiety (as measured by the STAI-D-AD; Spielberger, 1983) and healthcare utilization (as measured by the Healthcare Utilization Questionnaire; Lorig, 1996) among mothers of children with a mental diagnosis four separate binary regression analyses were run for each healthcare utilization question. The main effects of the proposed mediators, coping styles, and self-efficacy, were also tested.

A binary logistic regression analysis was performed on healthcare utilization outcome Question 1 (“In the past six months, how many times have you visited a physician?”) and three predictors: coping styles, self-efficacy, and trait anxiety, while controlling for mother’s age and mother’s level of education. A test of the full model with all five predictors against a constant-only model was not statistically significant ($X^2(1, N$

= 152) = 3.12, $p = 0.682$). Table 3 shows regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for odds ratios for each of the five predictors.

According to the Wald criterion, none of the five predictors significantly predicted healthcare utilization.

Table 3

Logistic Regression Analysis of Healthcare Utilization (Question 1) as a Function of Predictor Variables

Variables	B	Wald-Chi Square	Odds Ratio	95% Confidence Interval for Odds Ratio	
				<i>Lower</i>	<i>Upper</i>
Dysfunctional coping	-0.032	0.145	0.969	0.821	1.142
Self-efficacy	0.071	0.040	1.073	0.535	2.153
Trait anxiety	-0.029	1.228	0.971	0.922	1.023
MomAge	-0.431	0.487	0.650	0.194	2.181
MomEd	-0.191	1.270	0.826	0.593	1.152
Constant	1.942	0.580			

A second binary logistic regression analysis was completed on healthcare utilization outcome Question 2 (“In the past six months, how many times did you go to the hospital emergency room?”) and three predictors: coping styles, self-efficacy, and trait anxiety as well as two control variables (mother’s age and mother’s level of education). A test of the full model with all five predictors against a constant-only model was not statistically significant ($X^2(1, N = 152) = 3.30, p = 0.653$). Table 4 displays regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for

odds ratios for each of the five predictors. According to the Wald criterion, none of the five predictors significantly predicted healthcare utilization.

Table 4

Logistic Regression Analysis of Healthcare Utilization (Question 2) as a Function of Predictor Variables

Variables	B	Wald-Chi Square	Odds Ratio	95% Confidence Interval for Odds Ratio	
				<i>Lower</i>	<i>Upper</i>
Dysfunctional coping	0.130	1.584	1.138	0.930	1.393
Self-efficacy	-0.096	0.051	0.909	0.535	2.081
Trait anxiety	-0.038	1.398	0.963	0.950	1.025
Mother Age	0.335	0.146	1.398	0.250	7.827
Mother Ed	-0.024	0.016	0.976	0.674	1.415
Constant	-1.916	0.348			

A third binary logistic regression analysis was performed on healthcare utilization outcome Question 3 (“How many different times did you stay in the hospital overnight or longer in the past six months?”) and three predictors: coping styles, self-efficacy, and trait anxiety as well as two control variables (mother’s age and mother’s level of education). A test of the full model with all five predictors against a constant-only model was not statistically significant ($X^2(1, N = 152) = 5.058, p = 0.751$). Table 5 demonstrates regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for odds ratios for each of the five predictors. As per the Wald criterion, not any of the five predictors significantly predicted healthcare utilization.

Table 5

Logistic Regression Analysis of Healthcare Utilization (Question 3) as a Function of Predictor Variables

Variables	B	Wald-Chi Square	Odds Ratio	95% Confidence Interval for Odds Ratio	
				<i>Lower</i>	<i>Upper</i>
Dysfunctional coping	0.054	0.154	0.695	0.806	1.381
Self-efficacy	0.527	0.712	1.694	0.498	5.761
Trait anxiety	-0.043	1.034	0.957	0.881	1.041
Mother Age	-0.357	0.120	0.700	0.093	5.280
Mother Ed	-0.442	1.549	0.643	0.321	1.289
Constant	-1.279	0.278			

A fourth binary logistic regression analysis was performed on healthcare utilization outcome Question 4 (“How many total nights did you spend in the hospital in the past six months?”) and three predictors: coping styles, self-efficacy, and trait anxiety and two control variables (mother’s age and mother’s level of education). A test of the full model with all five predictors against a constant-only model was not statistically significant ($\chi^2(1, N = 152) = 5.389, p = 0.370$). Table 6 displays regression coefficients, Wald statistics, odds ratios, in addition to 95% confidence intervals for odds ratios for each of the five predictors. According to the Wald criterion, none of the five predictors significantly predicted healthcare utilization.

Table 6

Logistic Regression Analysis of Healthcare Utilization (Question 4) as a Function of Predictor Variables

Variables	B	Wald-Chi Square	Odds Ratio	95% Confidence Interval for Odds Ratio	
				<i>Lower</i>	<i>Upper</i>
Dysfunctional coping	0.113	0.452	1.119	0.806	1.554
Self-efficacy	0.711	0.834	2.037	0.442	9.378
Trait anxiety	-0.061	1.372	0.940	0.849	1.042
MomAge	-0.974	0.727	0.378	0.040	3.542
MomEducation	-0.742	1.755	0.185	0.159	1.427
Constant	-0.603	0.014			

After the logistic regressions for each of the Healthcare Utilization questions yielded no significant results, correlations (Table 7) were run for the following variables: mother's age, mother's education, trait anxiety, coping styles, and self-efficacy. Healthcare utilization was not included in the correlation analysis as it was a dichotomous variable. There was one significant result between a mother's age and trait anxiety ($r = -.20$, $p = .01$), but it is not clear what this means.

Table 7

Correlation Coefficients Among MotherAge, MotherEducation, Trait Anxiety, Coping Styles, and Self-Efficacy

	MotherAge	MotherEd	Trait Anxiety	Coping	Self-Efficacy
MotherAge	--	--	--	--	--
MotherEd	.04	--	--	--	--
Trait Anxiety	-.20*	-.01	--	--	--
DysCoping	.05	-.12	.13	--	--
Self-Efficacy	.06	.03	-.05	-.09	--

Note. * $p < 0.05$

Sobel Test of Mediation

In an effort to test hypotheses two and three, a series of Sobel tests of mediation were performed (Soper, 2012). These tests of mediation examined whether coping styles (Figure 7) and self-efficacy (Figure 8) acted as possible mediators between trait anxiety and healthcare utilization.

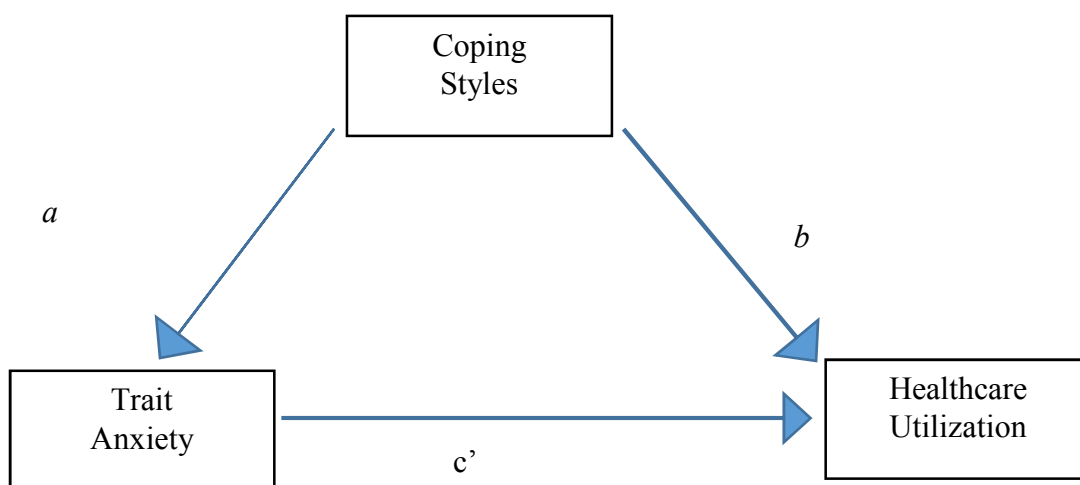


Figure 7. *Illustration of mediation in which trait anxiety affects healthcare utilization (a = IV (trait anxiety) to mediator (coping styles), b = direct effect of mediator (coping styles) on the DV (healthcare utilization), c' = direct effect of IV (trait anxiety) on DV (healthcare utilization).*

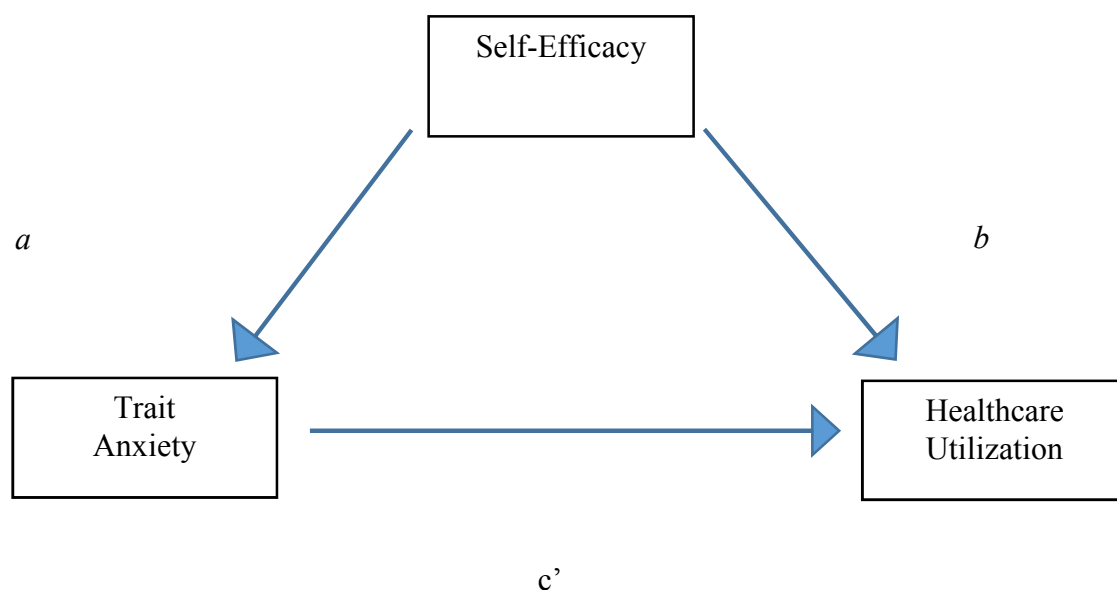


Figure 8. *Illustration of mediation in which trait anxiety affects healthcare utilization (a = IV (trait anxiety) to mediator (self-efficacy), b = direct effect of mediator (self-efficacy) on the DV (healthcare utilization), c' = direct effect of IV (trait anxiety) on DV (healthcare utilization).*

According to Baron and Kenny (1986), a mediator (in this study, coping styles and self-efficacy) is an independent variable that influences a dependent variable (in this study, healthcare utilization) by mediating to some degree the effect of an independent variable (in this study, trait anxiety). The Sobel test of mediation was chosen for its ability to identify an interaction between two variables and the possibility that a third variable may influence that relationship. If the mediators significantly influenced the association involving the IV (trait anxiety) and the DV (healthcare utilization), then a mediation effect would have been detected (Baron & Kelly, 1986). To determine if the

mediation was significant, a Sobel test was conducted for each of the healthcare utilization questions on the two mediating variables, dysfunctional coping styles and healthcare utilization.

Mediator Model Results for Coping Styles

For Healthcare Utilization Question 1 (“In the past six months, how many times have you visited a physician?”), Healthcare Utilization Question 2 (“In the past six months, how many times did you go to the hospital emergency room?”), Healthcare Utilization Question 3 (“How many different times did you stay in the hospital overnight or longer in the past six months?”) and Healthcare Utilization Question 4 (“How many total nights did you spend in the hospital in the past six months?”) a Sobel test of mediation was conducted. In Table 8, a represents the raw (unstandardized) regression coefficient for the association concerning trait anxiety (IV) and coping styles (the mediator), whereas S_a represents that standard error of a (Preacher & Leonardelli, 2001). In order to obtain a and S_a , a regression analysis was run with trait anxiety (IV) predicting coping styles (the mediator) (Preacher & Leonardelli, 2001). Also in Table 8, b stands for the raw coefficient for the association between coping styles (the mediator) and healthcare utilization (DV), whereas S_b represents the standard error of b (Preacher & Leonardelli, 2001). In order to obtain b and S_b , a regression analysis was run with trait anxiety (IV) and coping styles (the mediator) predicting healthcare utilization (DV) (Preacher & Leonardelli, 2001). When analyzing the results of the Sobel test, if the p -value falls below an alpha value of 0.05, then the mediation effect is significant (Preacher & Hayes, 2004). In this study, the results of the Sobel test of mediation for coping styles

and Healthcare Utilization Questions 1, 2, 3, and 4 indicated that coping styles did not have a significant mediation effect between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis as none of the p -values for the Healthcare Utilization Questions fell below the alpha level of 0.05 (Table 8).

Table 8

Mediator Model (Sobel Test) Results for Coping Styles Healthcare Utilization Questions 1, 2, 3 and 4

	Physician visits	ER visits	Hospital visits	#nights hospitalized
a	.041	.041	.041	.041
S_a	.025	.025	.025	.025
b	-.005	.018	.005	.006
S_b	.016	.013	.010	.008
Z	-.307	1.06	.478	.682
p -value	.759	.290	.632	.495

Mediator Model Results for Self-Efficacy

For Healthcare Utilization Question 1 (“In the past six months, how many times have you visited a physician?”), Healthcare Utilization Question 2 (“In the past six months, how many times did you go to the hospital emergency room?”), Healthcare Utilization Question 3 (“How many different times did you stay in the hospital overnight or longer in the past six months?”) and Healthcare Utilization Question 4 (“How many total nights did you spend in the hospital in the past six months?”), a Sobel test of mediation was conducted. In Table 9, a represents the raw (unstandardized) regression coefficient for the association between trait anxiety (IV) and self-efficacy (the mediator), whereas S_a represents that standard error of a (Preacher & Leonardelli, 2001). In order to

obtain a and S_a , a regression analysis was run with the trait anxiety (IV) and self-efficacy (the mediator) (Preacher & Leonardelli, 2001). Also in Table 9, b stands for the raw coefficient for the association between self-efficacy (the mediator) and healthcare utilization (DV), whereas S_b represents the standard error of b (Preacher & Leonardelli, 2001). In order to obtain b and S_b , a regression analysis was run with trait anxiety (IV) and self-efficacy (the mediator) predicting healthcare utilization (DV) (Preacher & Leonardelli, 2001). When analyzing the results of the Sobel test, if the p -value falls below an alpha value of 0.05, then the mediation effect is significant (Preacher & Hayes, 2004). The results of the Sobel test of mediation for self-efficacy and Healthcare Utilization Questions 1,2,3, and 4 indicated that self-efficacy did not have a significant mediation effect between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis as none of the p -values for the Healthcare Utilization Questions fell below the alpha level of 0.05 (Table 9).

Table 9

Mediator Model (Sobel Test) Results for Self-Efficacy Healthcare Utilization Questions 1, 2, 3, and 4

	Physician visits	ER visits	Hospital visits	#nights hospitalized
a	-.003	-.003	-.003	-.003
S_a	.006	.006	.006	.006
b	.010	-.017	.031	.025
S_b	.068	.056	.042	.035
Z	-.141	.260	-.414	-.410
p -value	.889	.795	.679	.682

Summary

In Chapter 4, statistical analyses were conducted to address the questions associated with trait anxiety and healthcare utilization among mothers of children with a mental health disorder. The key variables investigated in this study were to what extent, if any, does trait anxiety, coping styles, and self-efficacy affect the healthcare utilization practices in mothers of children with a mental health diagnosis. The statistical model used to test the prediction between trait anxiety and healthcare utilization was a binary logistic regression. The Sobel test of mediation was used to assess the mediation effects of coping styles and self-efficacy between trait anxiety and healthcare utilization.

The first research question asked whether trait anxiety was significantly associated with healthcare utilization among mothers of children with a mental health diagnosis. The outcome of the binary logistic regression revealed that trait anxiety was not significantly associated with healthcare utilization in the identified population. The second research question asked whether coping styles mediated the association between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis. The results of the Sobel test revealed that coping styles did not mediate the association between trait anxiety and healthcare utilization in the identified population. The third research question asked whether self-efficacy mediated the association between trait anxiety and healthcare utilization. The results of the Sobel test revealed that self-efficacy did not mediate the association between trait anxiety and healthcare utilization in mothers of children with a mental health diagnosis.

Chapter 5 will provide a discussion and synopsis of the study. A clarification of the findings, the study's limitations, proposals based on the results, and implications of the study will also be included. Finally, a summary will be presented.

Chapter 5: Recommendations, Implications, and Conclusion

Introduction

Nearly 20% of children in the United States have been diagnosed with a mental health illness (Scharer, 2009). As with many other aspects of healthcare, the majority of the responsibility for a child's mental health treatment is placed on the child's principal caretaker (particularly the mother) (Grey, Knafl, & McCorkle, 2006). Typically, the main focus of mental healthcare is provided to the child; therefore, a mother's needs are rarely taken into consideration (Downey & Coyne, 1990).

The aim of this quantitative study was to evaluate trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis. Previous researchers found that being a mother of a child with a mental health illness was correlated with higher levels of stress and depression (Scharer, 2009). Furthermore, in research conducted by Avsaroglu (2012), when compared to fathers, mothers of mentally ill children have increased levels of both state and trait anxiety. Anxiety has been previously associated with increased healthcare use but has not been examined in a population at increased risk of anxiety such as mothers of children with a mental illness (Gumankin et al., 2007). The intent of this quantitative design study was to investigate the association between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis. This study filled the gap in the literature on whether trait anxiety, coping styles, and self-efficacy affect healthcare utilization practices of mothers of children with a mental health diagnosis. It also added to the limited existing body of

information on the factors that affect healthcare utilization practices among the identified population.

Interpretation of the Findings

Research Question 1 of this study hypothesized that trait anxiety would be significantly associated with healthcare utilization among mothers of children with a mental health diagnosis. However, the results of the current study found that trait anxiety was not significantly associated with healthcare utilization among mothers of children with a mental health diagnosis. These findings were not consistent with past studies conducted on anxiety's role in healthcare utilization. For example, Keyzer-Dekker et al. (2012), Ristvedt and Trinkaus (2005), and Wittchen (2002) discovered that anxiety did influence a person's use of the healthcare system. Fischer et al. (2002) also found that individuals with a mental health diagnosis (including anxiety) have been found to have an increase in the use of the healthcare system when compared to individuals without a mental health diagnosis. In addition, research conducted by Gumankin et al. (2007) found that individuals with anxiety were more aware of cues provided to them by their bodies that, in turn, may influence their use of the healthcare system. More specifically, Ristvedt and Trinkaus (2005) stated that both high and low trait anxiety have been found to increase the use of the healthcare system. However, in conflicting research, Hu et al. (2002) found that only high levels of trait anxiety were more apt to lead to an individual's use of the healthcare system. In contrast, research conducted by Kullowatz, Kanniess, Dahme, Magnussen, and Ritz (2007) was not able to confirm the relationship between anxiety and healthcare utilization.

When comparing the current study with past research, there were multiple factors that could explain why my findings were different from previous researchers. For example, studies conducted by Gumakin et al. (2007) and Wittchen (2002) used medical records to collect data on healthcare utilization. The use of medical records could have provided more accurate information when compared to the current study that relied on the mother's recollection of the previous six months. Furthermore, the current study measured healthcare utilization as the number of visits to a physician, emergency room visits, and overnight stays in a hospital. However, research conducted by Hu et al. (2002) used additional categories of healthcare utilization and included in their data the use of over-the-counter medications and the use of alternative medications. The use of more types of healthcare utilization may have yielded different results. It can be expected that over-the-counter medications may be used more often than visiting a physician or visiting an emergency room. Also, the majority of research in the area of anxiety and healthcare utilization used both males and females in the sample group who were diagnosed with either physical health or mental health issues (Fischer et al., 2002; Gumakin et al., 2007; Hu et al., 2002; Keyser-Dekker et al., 2012; Kullowatz et al., 2007; Ristvedt & Trinkaus, 2005; Wittchen, 2002). Males and females may deal with anxiety differently or seek the use of healthcare services for different reasons.

The majority of past researchers who studied anxiety and healthcare utilization focused on adults diagnosed with illnesses that affected their personal physical health rather than the mental health illnesses of their children (Consedine & Butler, 2014; Hutti, Armstrong, & Myers, 2011; Liu et al., 2011; Oldroyd et al., 2013; Rutledge et al., 2013)

as well as the influence of anxiety among mothers of children with a physical health illness (Darbasie, 2000; Eyigor, Karapolat, Yesil, & Kantar, 2011; Lucia et al, 2003). Very few researchers have assessed the impact of anxiety on mothers of children with a mental health diagnosis (Edman, 2004; Liakopoulou et al., 2010). Anxiety in those afflicted with an illness compared to those who are caretakers of an individual with an illness may have influenced healthcare decisions differently.

When comparing the absolute values of the healthcare utilization variable to the existing literature, the mothers in the current study used the healthcare care system more often than women in past research (Owens, 2008; Redondo-Sendino, Gualler-Castillon, Banegas, & Rodriguez-Artalejo, 2006; Salganicoff, Ranji, Beamesderfer, & Kurani, 2014). It might be the argument that mothers raising a child with a mental health diagnosis make more visits to a healthcare provider and consult a doctor more often because they are more comfortable seeking treatment after the experience of having to seek treatment for their children. This comfort level with using the healthcare system may nullify the effect of anxiety on healthcare utilization.

There was also an additional issue with the answer categories of the healthcare utilization variable that may have seriously limited the ability to find associations. For each of the four healthcare utilization questions, several attempts were made to normalize the data; however, the data remained non normal resulting in the variable being dichotomized. According to Fedorov, Mannino, and Zhang (2009), while dichotomizing a variable is a common practice, it can be harmful to statistical estimation as well as the testing of research hypotheses. Dichotomization of variables may lead to the loss of

valuable information, which can impact the results of statistical testing. This loss of important data may also give rise to the loss of a study's power (Fedorov et al., 2009). MacCullum, Zhang, Preacher, and Rucker (2002) also added that the negative association with dichotomization includes "a loss of information about individual differences, loss of effect size and power, the occurrence of spurious significant main effects or interactions, risks of overlooking nonlinear effects, and problems in comparing and aggregating findings across studies" (p. 29). As a means to avoid dichotomizing variables in future studies on anxiety and healthcare utilization, researchers may want to use a higher sample size as well as to increase the study's power. Finally, collecting data from mothers via the practice of self-report surveys (asking mothers to recall their use of the healthcare system in the previous six months) versus extracting the information on healthcare utilization from medical records could have influenced the accuracy of the data.

Research Question 2 of this study hypothesized that coping styles would mediate the association between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis. Even though coping strategies may assist parents in adjusting to raising a child with a mental health diagnosis (Auslander, Bubb, Rogge, & Santiago, 1993; Lui et al., 2007; Raina et al., 2005; Selter et al., 2004), the results of the current study found that coping styles did not mediate the association among mothers of children with a mental health diagnosis. According to Sanders, Labott, Molokie, Shelby, and Desimone (2010), studies on coping and healthcare utilization have had mixed results. For example, Anie, Steptoe, and Bevan (2002) and McCrae and Lumley (1998) stated that coping was not a substantial predictor of healthcare utilization. However,

Cwikel et al. (2010) found that effective coping styles were a component that influenced a mother's healthcare utilization practices. Pearce et al. (2002) also reported greater use of coping, specifically religious coping, was associated with fewer outpatient physician healthcare visits. More specifically in regard to mediation, Barakat, Schwartz, Simon, and Radcliffe (2007) found that coping mediated the connection of pain with anxiety in youths diagnosed with sickle cell disease. In contrast, coping was found to be a mediator between sociocultural factors and health-promoting behaviors in men diagnosed with HIV (Bianchi, Zea, Poppen, Reisen, & Echeverry, 2004). However, the current study's results may have conflicted with previous research as the majority of past researchers who studied coping and healthcare utilization focused on individuals afflicted with a physical health illness or on caregivers of individuals with a physical health illness (Anie et al., 2002; Barakat et al., 2007; Bianchi et al., 2004; Cwikel et al., 2010; Lui et al., 2007; McCrae & Lumley, 1998; Raina et al., 2005; Sanders, 2010). Considering the current study utilized a different perspective (caretakers of children with a mental health illness), the results may have differed from previous research. Whereas the current study utilized self-report questionnaires based on a mother's recall of the previous six months, Raina et al. (2005) utilized in-person interviews with parents of children diagnosed with cerebral palsy while Sanders et al. (2010) gathered data through reviewing medical records of younger and older adults diagnosed with sickle cell disease. The use of interviews and medical records may have improved the accuracy of the data; however, the participants were either caretakers or individuals affected by physical health and not mental health illnesses.

Research Question 3 of this study hypothesized that self-efficacy would mediate the association between trait anxiety and healthcare utilization among mothers of children with a mental health diagnosis. The results of the current study found that self-efficacy did not mediate the association among mothers of children with a mental health diagnosis. Again, these conclusions did not coincide with past research on self-efficacy. Harper et al. (2013), Steffen et al. (2002), and Merkel and Wright (2012) each reported that self-efficacy assisted a caretaker with raising a child with a mental health diagnosis as well as assisted the caretaker to competently adjust to the stress of having a child with a chronic illness. Yousafzai et al. (2011) stated that self-efficacy was an important determinant for a mother's health when raising a child with a physical health illness. Harper et al. (2013) also added that a high self-efficacy led to a decrease in negative health-related symptoms in pediatric cancer patients and their parents. In addition, Warren et al. (2011) studied parents and reported that a low self-efficacy led to an increase in their level of anxiety. More specifically in regard to mediation, Woodward and Wallston (1987) found that self-efficacy mediated the age differences in health-related need for control in well adults. However, Roddenberry and Renk (2010) found that self-efficacy did not mediate the relationship between stress, sickness, and consumption of health services in university students. According to Kowk and Wong (2000), minimal inquires have focused specifically on self-efficacy in parents of children with a mental health diagnosis; thus, it would be beneficial for future researchers to focus on this topic.

Limitations of the Study

There were various limitations within this study. First, the use of a convenience sample taken from New Castle, Pennsylvania recruited at one mental health facility in Lawrence County, Pennsylvania may not have been typical of a bigger population of mothers of children with a mental health diagnosis, thus hindering external validity. However, this is the leading study to explore healthcare utilization and anxiety in mothers of children with mental health disorders and adds important information to the caregiver literature. Second, this study employed a retrospective research design, which relied on a mother's recollection of events prior to the beginning of the study. It was also cross-sectional, or time-specific, and dependent on a small time frame in the mother's lives; therefore, there was not a guarantee that this snapshot in time was representative of the mother's typical behaviors. Another disadvantage to the use of a cross-sectional study was that it did not help to determine cause and effect.

Additionally, the study did not use an experimental or quasi-experimental research design or incorporate a control group that consisted of mothers of mentally healthy children. Therefore, there was not a direct way to compare responses from a control and experimental group of mothers of healthy children and mothers of children with a mental health diagnosis. Future researchers should focus on this comparison. Also, according to Steele et al. (1999), the mothers in the study may have also reported responses they felt would be more socially acceptable when provided the self-report questionnaire.

The current research study was also not able to differentiate why mothers chose to seek healthcare services and why they chose not to seek healthcare services. The use of a qualitative research design that would focus on gathering data on the underlying motivation of mothers to seek or not to seek healthcare services may help to fill the gap in literature on this topic. This should be examined by future researchers to find a more profound core cause of healthcare utilization.

Recommendations

Recommendations for continued research in this area are founded on the outcomes of this study and literature of healthcare utilization practices of mothers of children with a mental health diagnosis. Even though there were not any significant findings in this study, it is still imperative to study this topic as increased knowledge about which women use or do not use healthcare services and why women choose to seek healthcare services will aid policy makers and healthcare providers in developing services for specific populations of women.

For example, it may be helpful for future researchers to focus on whether healthcare professionals that provide psychoeducation to the mothers of children with a mental health diagnosis will have an impact on that mother's level of anxiety. Fisher (2001) stated that parents of chronically ill children have a strong desire to obtain information on their child's diagnosis and treatment options. Therefore, if literature is provided to the mothers at the initial intake appointment on such topics as stress management, coping styles, time management, and ways to control anxiety, the literature may influence a mother's level of anxiety.

Additionally, future researchers may benefit from expanding the sample of mothers to include not only those mothers who seek treatment at a community mental health facility, but also those mothers who choose to seek treatment for their children at private practices. Limiting the study to only mothers that utilize community mental health facilities may exclude mothers who have different characteristics, such as differing levels of education or differing levels of socioeconomic status. These factors may play a role in a mother's level of trait anxiety, her use of effective coping styles and her level of self-efficacy.

In summary, it is recommended that program directors, healthcare educators, mental health professionals, insurance companies, mental health agencies, and hospital administrators should continue to study ways to improve the lives of mothers taking care of children with a mental health diagnosis. The research in this area should lead to the training of healthcare professionals on the unique characteristics of mothers raising children with chronic mental health issues and may include the development of social policies on healthcare utilization. Finally, Gumankin et al. (2007) pointed out that additional research needs to be conducted to discover what role anxiety plays, if any, in healthcare utilization.

Implications

As there were not any significant findings with the variables (trait anxiety, coping styles, and self-efficacy) chosen for this study, other variables may need to be studied. For example, stress, personality type, expressive writing, and skepticism of mothers of children with a mental health diagnosis may be other variables that would be valuable for

researchers to study as they may influence healthcare utilization. In a study of parents of children in the United States, it was discovered that an elevated level in parental stress was associated with increased healthcare utilization for their children (Raphael, Zhang, Liu, & Giardino, 2010). It may be beneficial to study parental stress to assess whether this variable affects a parent's own healthcare utilization practices. In studies conducted on adults (males and females) in the general population, Michal, Wiltink, Grande, Beutel, and Braehler (2011) reported that a person with Type D personality was correlated with increased healthcare utilization whereas Fiscella, Franks, and Clancy (1998) reported that skepticism was associated with fewer physician visits and fewer emergency room visits. As studies on personality type and skepticism have not been conducted on mothers of children with a mental health diagnosis, future research using these specific variables will add to the gap in the existing literature. In research conducted by King and Miner (2000) on healthy people, expressive writing was found to significantly reduce healthcare utilization. As expressive writing can be considered a specific type of coping skill, it would be thought-provoking to study in mothers of children with a mental health diagnosis. Also, qualitative studies, such as case study analyses, may be useful research techniques and would provide researchers the opportunity to assess for trends in why mothers of children with a mental health diagnosis choose to use or not use the healthcare system.

This study may contribute to positive social change, as the more knowledge of factors that contribute to the use or nonuse of the healthcare system that is gained about mothers parenting a child with a mental health illness, the more effective therapeutic

interventions and supportive services will be developed to assist in supporting the needs of these mothers. For the purpose of dissemination of the study's findings to influence positive social change within a microsystem (for example, a single mental health provider), the mental health agency where the study's sample was extrapolated would be the first agency to approach with these findings. It would be reasonable that this agency would be an appropriate venue to introduce new therapeutic support services for mothers seeking mental health treatment services for their children.

Conclusion

Parenting a child with a mental health illness may affect a parent's physical and psychological health as well as lead to economic constraints on the family unit. Oftentimes, treatment for a child with a mental health diagnosis is focused on the identified child while the needs of the parents are often not acknowledged by healthcare professionals. The focus of this study was to assess whether trait anxiety in mothers raising a child with a mental health diagnosis impacted their use of the healthcare system. A mother's coping styles and self-efficacy were also examined as possible mediators between trait anxiety and healthcare utilization. The theoretical foundation for this study was the transactional model of stress and coping, that provided a framework to assess the factors that may protect an individual from stress (Lazarus, 1966).

It was postulated that trait anxiety would be significantly associated with healthcare utilization among mothers of children with a mental health diagnosis. However, the present study discovered that there was not a significant association between trait anxiety and healthcare utilization in mothers of children with a mental

health diagnosis. Also, coping styles and self-efficacy were not found to mediate the relationship between trait anxiety and healthcare utilization. Although the present study did not yield significant results for the identified variables, the research contributed to positive social change as it is imperative to continue to study the factors that influence an individual to seek healthcare services. In the wake of the rising costs of healthcare services and medical insurance, knowledge from future researchers can assist healthcare professionals in identifying the needs of mothers of children with a mental health diagnosis as well as developing programs or interventions that could serve as models for other populations in the use or nonuse of healthcare services.

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Appendix A: Survey Invitation Letter

Volunteers Needed for Research Study

Participants are needed for a research study:

“Anxiety and Healthcare Utilization among Mothers of Children with Mental Health Disorders”



Description of Project: The focus of the research study is mothers of children diagnosed with a mental health disorder and the factors that influence the mother’s use of the healthcare system. Your participation will take about 20 minutes. *All participants will remain anonymous.* You will be asked to complete an online survey, which can be accessed through the following link:

<https://www.surveymonkey.com/r/8TPSTGN>

To participate: You must be at least 18 years old and have a child (3 years-18 years) diagnosed with a mental health disorder.

To learn more (or to request a paper copy of the survey), please contact the principle researcher of the study, Maria Perrotta MA MEd, at 724-651-4562 or maria.perrotta@waldenu.edu.

This research is conducted under the direction of Dr. Miranda van Tilburg, Psychology Department, and has been reviewed and approved by the Walden University Institutional Review Board.

Appendix B: IRB Approval Letter

Dear Ms. Perrotta,

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "Anxiety and Healthcare Utilization among Mothers of Children with Mental Health Disorders."

Your approval # is 05-03-16-0317004. You will need to reference this number in your dissertation and in any future funding or publication submissions. Also attached to this e-mail is the IRB approved consent form. Please note, if this is already in an on-line format, you will need to update that consent document to include the IRB approval number and expiration date.

Your IRB approval expires on May 2, 2017. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application document that has been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden website: <http://academicguides.waldenu.edu/researchcenter/orec>

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Sincerely,
Libby Munson
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Email: irb@waldenu.edu
Fax: [626-605-0472](tel:626-605-0472)
Phone: [612-312-1283](tel:612-312-1283)

Office address for Walden University:
100 Washington Avenue South, Suite 900
Minneapolis, MN 55401

Information about the Walden University Institutional Review Board, including instructions for application, may be found at this link: <http://academicguides.waldenu.edu/researchcenter/orec>

Appendix C: STAID Permission to Reproduce

For use by Maria Perrotta only. Received from Mind Garden, Inc. on February 27, 2016

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her thesis or dissertation research.

Instrument: State-Trait Anxiety Inventory for Adults

Authors: Charles D. Spielberger, in collaboration with R.L. Gorsuch, G.A. Jacobs, R. Lushene, and P.R. Vagg

Copyright: 1968, 1977 by Charles D. Spielberger

Up to 5 sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,
Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix D: Brief COPE Inventory Permission to Reproduce

Brief COPE Inventory

PsycTESTS Citation:

Carver, C. S. (1997). Brief COPE Inventory [Database record]. Retrieved from PsycTESTS. doi: <http://dx.doi.org/10.1037/t04102-000>

Instrument Type: Inventory/Questionnaire

Test Format:

28 items; responses range from 0 (I haven't been doing this at all) to 3 (I've been doing this a lot).

Source:

Supplied by author.

Original Publication:

Carver, Charles S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, Vol 4(1), 92-100. doi: 10.1207/s15327558ijbm0401_6

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Appendix E: Health Self-Efficacy Permission to Reproduce

Health Self-Efficacy Measure

Note: Test name created by PsycTESTS

PsycTESTS Citation: Lee, S. Y., Hwang, H., Hawkins, R., & Pingree, S. (2008). Health Self-Efficacy Measure [Database record]. Retrieved from PsycTESTS. doi: <http://dx.doi.org/10.1037/t16802-000>

Instrument Type: Test

Test Format: Health Self-Efficacy Measure items are rated on a 5-point scale from 0 (disagree very much) to 4 (agree very much).

Source: Lee, Sun Young, Hwang, Hyunseo, Hawkins, Robert, & Pingree, Suzanne. (2008). Interplay of negative emotion and health self-efficacy on the use of health information and its outcomes. *Communication Research*, Vol 35(3), 358-381. doi: 10.1177/0093650208315962, © 2008 by SAGE Publications.

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Appendix F: Informed Consent Form

CONSENT FORM

Introduction

You are being asked to be in a study of mothers raising children with a mental health issue.

You were picked to take part in the study based on the following:

1. you are over the age of 18,
2. you are a mother with a child ages 3-18 with a mental health issue, and
3. your child is currently living in your home.

If your child is living in an out-of-home placement, you will not be able to take part in the study.

Please read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study

- Taking care of a child with mental health issues can be stressful. It can also take a mental and physical toll on caregivers.
- Caring for a child with a mental health issue may affect a parent's ability to care for themselves.
- The study will look at how well a mother copes with their child's mental health issues.
- The study will also look at how comfortable a mother is with making health-related choices.
- It is important to see how these factors affect use of the healthcare system.

Description of the Study Procedures

If you agree to be in this study:

- You will be asked to answer questions online that will take you about 15-30 minutes.
- If you like, you can ask for a paper copy of the questions (please see the information below).
- Four short surveys will make up the questionnaire.
- You will be asked to complete the questionnaire one time.

Here are some sample questions:

- I am confident that I can have a positive effect on my health.
- I have been taking action to try to make my situation better.
- In the past six months, how many times have you visited a physician?

Risks/Discomforts of Being in this Study

- Being in this study will not pose risk to your safety or wellbeing.
- You may skip any questions you do not want to answer.
- However, you may feel stress or become upset with some of the questions.
- If you feel stressed or are upset while answering the questions, please feel free to call the Human Services Center's Crisis Line at 724-652-9000.

Benefits of Being in the Study

- There is no direct benefit to you for taking part in this study.
- This study will help mothers by understanding factors that affect their use of the healthcare system.
- Understanding the factors may lead to new services to help support the needs of mothers.

Confidentiality

- No information about who you are will be gathered.
- All records from the study will be kept private.

Payments

There will no payment to mothers for who take part in the study.

Right to Refuse or Withdraw

- The choice to take part in this study is entirely up to you.
- You may refuse to take part in the study at any time.
- You have the right to not answer any of the questions, as well as to withdraw from the study at any point during the process.

Right to Ask Questions and Report Concerns

- You can ask questions about this study at any time.
- If you have questions, please feel free to contact the researcher, Maria Lynn Perrotta MA MEd ABD at maria.perrotta@waldenu.edu or by telephone at 724-651-4562.
- Ms. Perrotta is earning her PhD from Walden University.

- You may know Ms. Perrotta as a therapist, but this study is separate from that role.
- If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. Dr. Endicott (Walden University) can talk about your rights with you. Dr. Endicott's phone number is 612-312-1210. Walden University's approval number for this study is 05-03-16-0317004 and it expires on May 2, 2017.
- Please save a copy of this consent form for your records.

Obtaining Your Consent

By completing this online survey, you are agreeing to take part in the survey.