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Maternal Depression: The Impact of Perceived Social Support and Behavioral Health Rehabilitation Provider 50 Services

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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Tammy Lynn Gregorowicz

MA, Walden University, 2009

BS, Wilkes University, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of this study was to identify if the rate of behavioral health rehabilitation services (BHRS) impacts depressive symptoms of mothers with children receiving these services and if the perception of social support moderates the severity of depression. The stress-buffering hypothesis and Bowen's family systems theory were used for the theoretical framework. A quantitative, cross-sectional survey design was used to collect data from mothers of children receiving BHRS Provider 50 services in northeast Pennsylvania. The Beck Depression Inventory, Second Edition and Multidimensional Scale of Perceived Social Support were used to assess depression and perceived social support. A self-made demographic form was used to identify the rate of BHRS and demographic characteristics. Linear regression and hierarchical multiple regression analyses were used to identify relationships between the study variables. According to study results, the rate of BHRS did not predict the severity of maternal depression, and perceived social support did not moderate the relationship between rate of BHRS and maternal depression. However, it was found that perceived social support was negatively correlated with the severity of maternal depression. This study provides information to the behavioral health community about maternal depression and raises awareness of the importance of caregiver well-being within the BHRS Provider 50 programs. Specifically, mothers caring for a child with special needs may benefit from additional support within a wraparound program.

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Dedication

This dissertation is dedicated to my amazing children Aiden, Alivia, and Samuel who have been my source of motivation from the beginning of this journey. I am so grateful to have been blessed with three wonderful children that can understand the work that is required to be successful. Our educational journey was spent together over many years, but we can finally move to the next phase that will hold new challenges and adventures. I hope that I have been a positive role model and instilled personal characteristics that will push you to always work hard and strive for success.

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Chapter 1: Introduction to the Study

Introduction

Research on the prevalence and severity of depression in mothers of children in behavioral health rehabilitation services has been limited, especially for those individuals in Provider 50 services. However, it is known that caring for a child with emotional and behavioral problems is associated with an increased prevalence of mental health problems in caregivers (Gerkensmeyer et al., 2011; Horwitz, Briggs-Gowan, Storfer-Isser, & Carter, 2007). While caregiver strain has been associated with depression, the effects of this stressor can be buffered by psychological variables such as the perception of social support. The more efficient the social support is perceived, the less likely the individual will experience the adverse effects of the stressor (Cobb, 1976; Cohen & Wills, 1985).

When one member in a family is experiencing higher levels of anxiety or stress, this can cause tension that has an effect on the entire family (Bowen, 1978). Identifying and treating mental health issues within the family unit can help to reduce dysfunctional relationship patterns. For example, marital conflict or having a child with mental health issues can increase tension and anxiety and result in psychological distress (Bowen, 1978). The results of this study may increase awareness of mental health clinics and the importance of identifying maternal depression and the impact of caregiver mental health on the treatment outcomes of children in Behavioral Health Rehabilitation Service (BHRS) Provider 50 programs. Additionally, the results of this study can be used to inform mental health clinicians in Provider 50 programs about the importance of

collaborating with the families and other agencies to provide sufficient social support to caregivers of children in these programs.

In this chapter, I will provide a brief background about the research topic with a more detailed discussion in Chapter 2. The problem statement that prompted this research study will be included in this chapter as well as the purpose of the study and the research hypotheses. I will describe theories related to the study and the nature of the study in the theoretical framework. Relevant terms that will be used in following chapters will be defined. Additionally, the research study assumptions, delimitations, and limitations will be discussed.

Background

Major depressive disorder is one of the most common mental health issues that affects the general population and can have severe adverse consequences for the individual and their family (Turney, 2012). While depression impacts both men and women, women are more susceptible to depression, especially during their childbearing years. Additionally, women often do not seek treatment to manage their depressive symptoms (Acri et al., 2014; Riley et al., 2009; Turney, 2012). Depression is of particular concern for women because of the negative consequences on children of women who are clinically depressed. Depressed mothers are more likely to display harsh parenting practices and exhibit neglectful and emotional maltreatment (Kohl, Kagotho, & Dixon, 2011). These children tend to have deficits in cognitive and behavioral functioning that can last into adulthood (Turney, 2012). Kiernan and Huerta (2008) suggested that maternal depression was related to less nurturing or engaging parenting practices, and

this type of parenting style was associated with child cognitive deficits and behavior problems. Mothers with a healthy psychological well-being and who were more involved with their child through meaningful activities and positive interaction typically had stronger positive parenting skills that promoted successful child development. Children of nondepressed mothers showed less externalizing behavior and greater cognitive ability (Kiernan & Huerta, 2008).

However, there are mental health services available that provide interventions to children with emotional and behavioral problems (Painter, 2012). BHRS Provider 50 programs are the most intensive outpatient services available for children with mental health issues that can be implemented across home, school, and community settings (Painter, 2012). These services are also known as wraparound services because of the availability of interventions to be implemented in various settings with the child (Painter, 2012). Provider 50 services are based on core principles that promote a healthier mental health status and well-being for the child and caregiver when implemented appropriately (Van Loon, Granic, & Engels, 2011).

Several environmental factors are associated with the prevalence of maternal depression. Women with young children or multiple children are at a greater risk of experiencing depressive symptoms (Horwitz et al., 2007), which is elevated by the co-occurrence of having a child with mental health or medical issues (Gerkensmeyer, 2011). Mothers with poor physical health, lower socioeconomic status, and lower educational achievement tend to report higher levels of depression. (Gerkensmeyer, 2011; Horwitz et al., 2007; Mendes et al., 2011). A person's perception of social support can also have an

impact on the severity of depression in addition to caregiver strain, environmental factors, and biological factors (Balaji et al., 2007; Mendes et al., 2011). Mothers who perceive their social support as deficient are more likely to experience depressive symptoms than mothers who perceive their social supports as efficient (Grav, Hellzen, Romild & Stordal, 2011; Harknett & Hartnett, 2011). Prelow, Weaver, Bowman, and Swenson (2010) suggested that mothers who perceive their social support as efficient are more likely to have positive parenting practices and healthier overall psychological well-being.

Perceived social support can be assessed from several types of support, such as emotional, tangible, informational, and appraisal (Ajrouch et al., 2010; Grav, et al., 2011; Harknett & Hartnett, 2011; Scharer et al., 2009), but emotional and appraisal support have been indicated as important factors in depression and other mental health issues (Cohen, Clark, & Sherrod, 1986; Grav et al., 2011). While social support can be assessed through reported quantity and quality of received support, the perception of social support has been shown to have a stronger correlation with the individual's psychological well-being (Harknett & Hartnett, 2011). In addition to environmental and biological variables, child-related stressors and reported deficient social support are of particular importance when evaluating the relationship between these factors and maternal depression (Horwitz, Briggs-Gowan, Storfer-Isser, & Carter, 2007; Skipstein et al., 2012) within the BHRS Provider 50 programs. Behavioral interventions are not as effective for children with externalizing behavior when the child's mother is depressed (Van Loon et al, 2011).

Problem Statement

While mothers with children who have severe emotional disturbances often seek treatment for their children in programs such as wraparound services that provide support and assistance to the child and family (Fries, Carney, Blackman-Urteaga, & Savas, 2012), many mothers of children in wraparound services continue to report deficits in social support (Kernan & Morilus-Black, 2010). The lack of social support has been associated with maternal depression (Horwitz et al., 2007), but when wraparound treatment is implemented, mothers may experience improved mental health (Van Loon et al., 2011). While the lack of social support may be associated with maternal depression (Skipstein et al., 2012), there is insufficient research on whether the perception of social support and involvement of wraparound services has a positive impact on the severity of depression of mothers in the BHRS Provider 50 program.

Purpose of the Study

The purpose of this study was to gather information to bridge the gap in current research on maternal depression in BHRS Provider 50 programs. In this study, I focused on the mothers in these programs and used self-report assessments to identify the relationship between the reported severity of maternal depression and the rate of BHRS Provider 50 intervention. Additionally, I identified if the perception of social support moderated the reported severity of depression. The Beck Depression Inventory-II (BDI-II) was used to assess maternal depression in this study, and a demographic form was used to gather personal data and information about involvement in BHRS Provider 50

services. Perceived social support was measured by the Multidimensional Scale of Perceived Social Support (MSPSS).

Research Questions and Hypotheses

The research hypotheses for this study are indicated below. A more detailed explanation of the hypotheses and statistical analysis will be provided in Chapter 3.

Research Question #1: Does the rate of use of BHRS Provider 50 services predict the level of depression reported by mothers of children in BHRS Provider 50 services?

$H_1 1$: The rate of BHRS Provider 50 services reported by mothers of children in this program negatively predicts the level of maternal depression measured by the Beck Depression Inventory-II.

$H_0 1$: The rate of BHRS Provider 50 services reported by mothers of children in this program does not predict the level of maternal depression measured by the Beck Depression Inventory-II.

Research Question #2: Does perceived social support moderate the relationship between maternal depression and the rate of use of BHRS Provider 50 services?

$H_1 2$: Perceived social support as measured by the Multidimensional Scale of Perceived Social Support will moderate the relationship between depression as measured by the Beck Depression Inventory- II and rate of use of BHRS Provider 50 services as reported by mothers of children in Provider 50 programs.

$H_0 2$: Perceived social support as measured by the Multidimensional Scale of Perceived Social Support does not moderate the relationship between depression as

measured by the Beck Depression Inventory- II and rate of use of BHRS Provider 50

services as reported by mothers of children in Provider 50 programs.

Theoretical Framework

The theoretical framework for this study was based on the stress-buffering

hypothesis and family systems theory. The stress-buffering hypothesis was proposed by

Cobb (1976), and states that an individual's perception of social support can buffer the

effects of stressors on the individual's psychological well-being. Cohen and Wills (1985)

suggested that social support may protect the individual from the effects of stress by

altering the appraised threat of a situation. Researchers used the concept of stress-

buffering for studying the relationship between social support and psychological

disorders such as depression. The stress-buffering theory was chosen because of the

hypothesized relationship between the lack of perceived social support, caregiver stress,

and maternal health and well-being. This theory was applied to the current research

hypotheses to investigate if mothers who have major stressors and perceive their social

supports as deficient were more likely to experience mental health problems (Skipstein et

al., 2012). The stress-buffering hypothesis is discussed in more detail in Chapter 2.

Family system theory was developed from the general system theory proposed by

Bertalanffy (1968). Bowen (1978) stated that families are emotionally connected and the

behavior or dysfunction of one member of the family will have an effect on the other

members of the family. Bowen theorized eight concepts that explain dysfunctional

relationship patterns within the family. The concepts of triangles, differentiation of self,

and the nuclear family emotional system are discussed in Chapter 2 in the theoretical

foundation. The nuclear family emotional system is made up of groups of three or more individuals who are referred to as triangles, and when the tension is high in these groups, there tends to be greater discord. Often mental health issues such as depression arise from dysfunctional triangulation and have varying effects on each member of the family unit (Franck & Buehler, 2007). Guo and Slesnick (2011) suggested that having one or more children with behavior problems causes disruption in the nuclear family emotional system that has been linked to maternal depression. However, family cohesion has been identified as a preventative method to decrease maternal depression. Family systems theory and its application in the current study will be discussed further in the literature review.

Nature of the Study

Quantitative

This was a nonexperimental quantitative study using a cross-sectional survey design. The study design was consistent with other researchers in the field who used surveys to analyze variables similar to the variables indicated in this study. The independent variable was indicated as the duration and frequency of BHRS Provider 50 service intervention as reported on the demographic form by mothers of children receiving Provider 50 services. The dependent variable was the severity of maternal depression as reported on the BDI-II. The moderating variable was the level of perceived social support as reported on the MSPSS. The demographic form was used to identify demographic characteristics such as age, ethnicity, income, and marital status.

The demographic form, BDI-II, and MSPSS are brief questionnaires that were used to collect data from participants. The questionnaires were mailed to participants who agreed to participate. An incentive was given to those who participated and a dissemination letter was sent out to participants 1 month after the research was complete. Further details about data collection procedures will be provided in Chapters 3 and 4.

The study participants were a convenience sample of women 18 years or older with a child diagnosed with a mental health issue and receiving Provider 50 services within the northeastern regions of Pennsylvania. The use of a convenience sample has inherent potential threats to external validity that will be discussed further in Chapter 3. Additional ethical procedures regarding protection of participants and data usage will be indicated in Chapter 3. The data were analyzed using SPSS software using a linear regression model and hierarchical multiple regression model. Statistical analyses were conducted using the scores from the BDI-II, scores from the MSPSS, and personal characteristic information collected from the demographic form. The results of the data analyses will be discussed in Chapter 4.

Definitions

Appraisal support: Feedback or praise provided by others that buffers the effects of stress (Grav et al., 2011; Scharer et al., 2009).

Behavioral health rehabilitation services (BHRS) Provider 50 programs: Individualized, strength-based services that provide tailored intervention planning for children with emotional and behavioral mental health problems (Painter, 2012). These programs provide more intensive interventions than outpatient services for children that

can be used in the home, school, and community settings (Bruns et al., 2010; Walter &

Petr, 2011). The strength-based treatment approach provides a multisystem care model

for the child and family (Bradshaw, Brown, & Hamilton, 2008; Kessler & Ackerson,

2004).

Buffering effect: A protective quality that lessens the effects of stress on the

individual's psychological and physical well-being (Cobb, 1976).

Differentiation of self : The process in which an individual develops a unique

identity separate from the family unit (Bowen, 1978).

Emotional support: The availability of others to provide empathy, love, trust, and

companionship that promotes emotional regulation and stability (Harknett & Hartnett,

2011).

Informational support: Support with obtaining resources and providing advice,

guidance, or suggestions based on previous knowledge (Scharer et al., 2009).

Maternal depression: Mothers whom experience the symptoms of major

depressive disorder as described by the American Psychological Association (2013):

> A depressed mood and/or loss of interest or pleasure in life activities for a least 2
>
> weeks and at least five of the following symptoms that cause clinically significant
>
> impairment in social, work, or other important areas of functioning almost every
>
> day - depressed mood most of the day, diminished interest or pleasure in all or
>
> most activities, significant unintentional weight loss or gain, insomnia or sleeping
>
> too much, agitation or psychomotor retardation noticed by others, fatigue or loss

of energy, feelings of worthlessness or excessive guilt, diminished ability to think or concentrate, or indecisiveness, and recurrent thoughts of death. (p. 160)

Nuclear family emotional system: A family unit consisting of members that are emotionally connected to one another and contribute to the stability or dysfunction of the family system (Bowen, 1978; Franck & Buehler, 2007).

Perceived social support: An individual's perception of the quality or quantity of the identified tangible, informational, emotional, or appraisal supports instead of the actual received social support (Gjesfjeld, Greeno, Kim, & Anderson, 2010; Grav et al., 2011; Harknett & Hartnett, 2011).

Received social support: The quality or quantity of social support actually received from others (Balaji et al, 2007; Grav et al., 201;, Scharer et al., 2009).

Tangible support: Assistance with basic needs such as financial assistance, goods, and services (Grave et al., 2011).

Triangles: Three individuals that interact within a nuclear emotional family unit and have an impact on each other (Bowen, 1978).

Assumptions

It was an assumption of this study that each participant will complete the questionnaires in their entirety and provide independent and honest answers. This assumption was important because the participants reported personal experiences and perceptions related to the study variables. It was assumed that all participants in the study had the cognitive ability to understand the instruments used in this study and were able to

respond appropriately to the statements provided in the questionnaires and demographic form.

Scope and Delimitations

The scope of this study was limited to a quantitative study using data from participants with involvement in a specific behavioral health rehabilitation program in the northeast region of Pennsylvania. Data were collected from participants who met the criteria of being a women 18 years or older, having a biological or adoptive child diagnosed with a mental health disorder, currently living with the child in services, and having primary custody of the child who is enrolled in a BHRS Provider 50 program. The participants were obtained from a convenience sample, which limits the generalizability of the study results because participants who agreed to participate in the study may differ from those who chose not to participate in the study. All participants completed two self-report measures (BDI-II, MSPSS) and a demographic form.

The theoretical foundation of this research was based on the stress-buffering hypothesis related to mothers with children with mental health problems who are involved in intensive BHRS Provider 50 services. A delimitation of this study was that individuals with severe or chronic stressors are less likely to have positive psychological benefits from social support than individuals who have mild to moderate or acute stressors (Benson, 2006; Moskowitz et al., 2012). It was difficult to assess these factors in the current study and these factors may have impacted the participants' reported severity of depression and perception of social support.

Limitations

There were several limitations anticipated for this study. The nature of this study was a quantitative, correlational analysis of the independent, dependent, and moderating variables. While the study results provided information about the relationship between these variables, cause and effect relationships could not be determined based on the results of this study. Additionally, the population for this study was specific to mothers of children in BHRS Provider 50 services. The unique wraparound services provided in this program are not the same as other behavioral health services that provide either less intensive or more intensive treatment models of care. Therefore, the results of this study may not be applicable to mothers of children in other behavioral health programs or mothers in the general population that have children with mental health problems.

Significance

The results of this study provide additional research that can be used in several different ways. This study may raise awareness of personal and environmental factors that may contribute to maternal depression. Maternal depression is often overlooked as a treatment factor in wraparound services because the focus is on the child with severe emotional disturbances and not the parent caring for that child. While the goal of BHRS Provider 50 services is to provide support to at-risk youth and their families, researchers have shown that there has been a consistent lack of social support available to these individuals with only a slight improvement with services (Kernan & Morilus-Black, 2010).

In this study, I aimed to provide information that can be useful to mothers and mental health staff in Provider 50 programs. The research results may contribute to information already available to mothers about stressors associated with depression and protective factors that can buffer the negative effects of those stressors. Additionally, the results of this study may provide information that can be used by mental health providers to improve service intervention in the behavioral health field. In promoting social change, clinicians in behavioral health services may become more aware that while the child is the main focus of treatment, the mother's health must also be considered to promote effective treatment outcomes. Improving maternal mental health can increase positive parenting practices that benefit the child's cognitive, behavioral, and overall well-being (Kiernan & Huerta, 2008). The results of this study may be used to inform the mental health community about the importance of providing social support to caregivers and being aware of the impact of caregiver strain and mental health issues in wraparound services.

Summary

Depression is a serious mental health concern in adults that impacts women more often, especially during the childbearing years (Acri et al., 2014; Riley et al., 2009; Turney, 2012). Maladaptive personal characteristics, environmental stressors, and deficient perceived social support have been associated with an increased likelihood of experiencing depression (Balaji et al., 2007; Cobb, 1976; Cohen & Wills, 1985; Gerkensmeyer et al., 2011; Grav et al., 2011; Harknett & Hartnett, 2011; Horwitz et al., 2007; Mendes et al., 2011). Caregiver strain has been identified as an environmental

stressor that contributes to maternal depression (Gerkensmeyer et al., 2011; Horwitz et al., 2007). However, caregiver strain may be reduced through the involvement of programs such as BHRS Provider 50 services that provide intensive outpatient treatment to children with emotional and behavioral issues (Van Loon et al., 2011). The purpose of this study was to identify if the severity of maternal depression decreases when the rate of BHRS Provider 50 service involvement increases. Additionally, in this study, I identified if the perception of social support moderated the relationship between the rate of BHRS and maternal depression. The theoretical foundation of this study was based on the concepts of the stress-buffering hypothesis as it relates to mothers with children in BHRS Provider 50 services.

In this correlational study, I used nonexperimental quantitative methods to collect and analyze data. The BDI-II, MSPSS, and a demographic form was completed by participants and analyzed to identify the relationship between the study variables. It was assumed that the participants had the cognitive ability to complete the questionnaires and provided honest and independent responses. This research may be used to raise the awareness of mental health clinicians and caregivers in the BHRS Provider 50 programs and may not be generalizable beyond the scope of these services. The research results may provide needed information in the mental health field related to depression and mothers with children with mental health issues. Additionally, the results of this study may be used to raise awareness to the needs of caregivers in BHRS Provider 50 programs and the importance of providing support to caregivers to promote positive treatment outcomes.

Chapter 2 will provide an overview and synthesis of the literature supporting the current study. In the following chapter, I will highlight the theory that forms the foundation for this research and the variables that comprise the research hypotheses.

Chapter 2: Literature Review

Introduction

A mother's mental health can be influenced by individual and environmental factors that impact family members and others around them. Maternal depression is a serious mental health concern that affects about 1 in 10 women in the United States (Ertel, Rich-Edwards, & Koenen, 2011), and women in their childbearing years are especially susceptible to depression (Riley et al., 2009). Mothers of children with severe emotional disturbances are at greater risk of depression as well as mothers who perceive their social support as deficient (Horwitz et al., 2007). While researchers have shown that when children with emotional and behavioral disturbances receive Provider 50 services there is a reduction of symptoms (Fries et al., 2012), the impact of these services on maternal depression is not clear. This lack of research may be in part because the child is the focus of treatment, while the parent is typically an active participant of the treatment team and is used as a support for the child's treatment (Fries et al., 2012). Although Provider 50 services provide support to at-risk youth and their families, these individuals consistently report a lack of social support (Kernan & Morilus-Black, 2010).

In this literature review, I will examine the impact of perceived social support and rate of involvement in Provider 50 services on the reported severity of maternal depression. Research related to the relationship between perceived social support and maternal mental health, the outcomes and limitations of Provider 50 services, and risk factors and consequences of maternal depression is presented. While there are implications that the lack of social support is associated with maternal depression

(Skipstein et al., 2012), there is insufficient research on the relationship between the perception of social support, rate of Provider 50 services, and reported severity of maternal depression.

To better understand the impact of perceived social support and Provider 50 services on maternal depression, I emphasized the stress buffering, family systems, and social support theories in the theoretical framework of this literature review. I used the stress-buffering hypothesis and Bowen's family systems theory to explain the phenomenon in which psychosocial stress negatively impacts the individual's well-being when there is a deficit of perceived social support and lower level of family functioning (Bowen, 1978; Cobb, 1976). Additionally, I used research to explain how certain mechanisms buffer the effects of stress on mental and physical health (Cohen & Wills, 1985). In this literature review, I discussed theories related to the stress-buffering hypothesis; family systems theory; and research on the impact of family, stress, and social support on mental and physical health.

Literature Search Strategies

Several combinations of search terms were used to search the current literature on perceived social support, maternal depression, and Provider 50 services. These terms were *perceived social support*, *social support*, *maternal*, *mothers*, *wraparound, stress buffering*, *family systems theory, family systems, Bowen*, *differentiation of self, children, mental health issues, depression, parenting, behavioral, emotional,* and *maternal depression*. These terms were entered into several databases such as PsycINFO, Thoreau, ProQuest, SocIndex, and Academic Search Premier databases. Most of the resources

gathered for the review used current literature from within the last 10 years ranging from

2004-2014. The resources were mainly current peer-reviewed journal articles; however,

books and older journal articles were also accessed to establish the theoretical

framework.

Theoretical Foundation

The theoretical foundation for this research was based on the stress-buffering

hypothesis and family systems theory and these theories were used to support the

association of the research variables of maternal depression, involvement of behavioral

health intervention, and perceived social support. Social support theories emerged in the

late 1970s and early 1980s focusing on the types of received support, perception of social

support, intentions of the provider of social support, and social networks (Hupcey, 1998).

Although social support theories focused on received social support initially, researchers

have supported the need for a multidimensional view of social support that included the

influence of social networks, supportive behaviors, and perceived social support

(Hupcey, 1998). Social support is often associated with lower levels of stress. The impact

of stress has been an interest of researchers for many decades; however, Lazarus (1966)

theorized that stress occurs when a situation is appraised as threatening and the individual

does not have the appropriate coping response to manage the stressful situation

successfully. Although Lazarus theorized how stress occurs, other theorists were

interested in how the effects of stress can be reduced through social support.

Stress-Buffering Hypothesis

One theory that has been prominent in the literature on the effects of stress is the stress-buffering hypothesis. According to the stress-buffering hypothesis, the perceived availability of social support protects the individual from the pathogenic effects of stress (Cobb, 1976). Therefore, when social support is perceived as efficient, there are protective qualities against the effects of life stress in which the greater the social support the more likely the individual will successfully manage life stressors (Cobb, 1976). Cohen and Wills (1985) suggested that there are several mechanisms that buffer the effects of stress on mental and physical health, such as social support, which protects the individual from the effects of stress by altering the appraised threat of a situation and physiological response to the stressful stimuli. Additionally, social support from interpersonal relationships has been found to protect the individual from the negative psychological and physiological impact of stress (Cohen & McKay, 1984). However, the stress-buffering effects differ between the types of social support (Cohen et al., 1986). While the perception of tangible support does not seem to have protective qualities from the effects of stress on the individual's well-being, the perception of emotional support and appraisal have been shown to mediate the effects of stress (Cohen et al., 1986).

The stress-buffering hypothesis has been used in several studies on perceived social support and mental health. Moskowitz, Vittinghoff, and Schmidt (2012) used the stress-buffering hypothesis in an analysis of poverty and social support on self-rated health within a 5-year longitudinal study. Moskowitz et al. found that individuals experiencing high levels of stress did not report an elevation in psychological distress

when social support was efficient; however, there were differences between acute and chronic stressors. Additionally, it was indicated that social support may be less effective as a buffer from the effects of stress in poverty stricken areas. Benson (2006) used the stress-buffering hypothesis to research the relationship between stress proliferation from raising a child with autism, social support, and parent depression. The stress-buffering hypothesis was supported in which parents of children with low levels of autistic symptoms tended to experience less psychological distress with informal social support. Parents of children with severe autistic symptoms were less likely to have improvement of psychological well-being with social support. However, it was indicated that the stress-buffering hypothesis may have been inhibited by the extremely high-risk situations (Benson, 2006).

Although the stress-buffering hypothesis has been shown to have limitations in some situations, the limitations are not consistent across studies (Moskowitz et al., 2012). In addition, there are differing variables that may impact the stress buffering qualities of social support. There are also differences of protective qualities between the types of social support available. For example, received social support differs from perceived social support, which may influence the severity of reported psychological distress. Ajrouch, Reisine, Lim, Sohn, and Ismail (2010) demonstrated the difference in stress-buffering effects with varying types of social support. Ajrouch et al. found that instrumental social support provided greater protective qualities from everyday stress while emotional social support was associated with less psychological distress. However, acute stress from frequent daily stressors such as discrimination was not lessened by

social support. Despite these limitations, the stress-buffering hypothesis continues to be a useful theory that supports current research of social support and mental health.

Family Systems Theory

When factors such as perceived social support and anxiety impact a caregiver's psychological well-being, it can have a negative effect on the whole family (Balaji et al, 2007). This phenomenon can be understood using the family systems theory proposed by Bowen (1978), which is an extension of the general system theory proposed by Bertalanffy (1968), which states that many social problems or experiences could be conceptualized with a system context instead of an individual's pathology. Bowen's family systems theory is a theory that uses systems thinking to describe human behavior within a family unit. The family is viewed as an emotional unit that experiences complex interactions that can further be described through several theoretical concepts based in systems theory (Bowen, 1978). Families are interconnected in such a way that when one member's level of functioning changes, other members will also have a change in functioning. Members in the family system rely on each other for affection, attention, and support among other needs and desires. Families have expectations and needs from one another that promote emotional interdependence and connectedness. When one member experiences anxiety, the other family members will also have a reaction to the anxiety and psychological distress. The emotional connectedness between family members becomes strained when there is heightened tension and one or more of the members will experience psychological distress. The family member that accommodates to reduce the anxiety and tension in the family often is the one who is most likely to experience

problems such as depression or physical illness. According to family systems theory, the emotional system is a crucial factor in the development of clinical problems and understanding family emotional interdependence can be helpful in mental health treatment (Bowen, 1978). Family systems theory provides an explanation for discord and maladaptive functioning in a nuclear family emotional system that has multiple stressors, such as a child with mental health problems or a caregiver that is depressed (Guo & Slesnick, 2011; Kerr & Bowen, 1988; Rootes et al., 2010).

Bowen's Family System Theory Concepts

According to family systems theory, several theoretical concepts can be used to describe the emotional system within a family unit (Bowen, 1978; Rootes, Jankowski, & Sandage, 2010). Triangles, the nuclear family emotional system, and the differentiation of self are some of the concepts used in family systems theory (Bowen, 1978). Each of these concepts can be applied to the current research variables and contribute to the theoretical foundation in the discussion of maternal depression in the family context.

Triangles. Triangles refer to the relationship and emotional interaction between three individuals and are the foundation of an emotional system (Murray, Daniels, & Murray, 2006; Rootes et al., 2010). These relationships are stronger than dyad relationships, but also may cause some conflict because the anxiety in the triangle relationship is greater than the dyad. When tension rises, discord occurs within the triangle and typically one of the members will feel negative emotions such as rejection or depression (Franck & Buehler, 2007). For example, in a triangle of two parental figures and a child, the child may rebel against the parents if they are overly focused on the

child's negative attributes which can lead to externalizing behavior (Bowen, 1978; Rootes et al., 2010) often observed in children with emotional and behavioral issues. Franck and Buehler (2007) also found that children of parents that are experiencing marital conflict or hostility will often internalize their feelings and are more likely to experience anxiety and depression. These children are at risk of mental health issues when the parental figures are depressed. However, the risk of depression decreases in the family system when the parental figures are supportive to each other and the child (Franck & Buehler, 2007). Guo and Slesnick (2011) stated that child internalizing and externalizing problem behaviors are associated with maternal depression, but greater family cohesion can buffer against maternal depression even when the children have presenting problem behaviors.

Nuclear family emotional system. The nuclear family emotional system is a concept that describes dysfunctional relationship patterns that occur within a family unit (Bowen, 1978). It is assumed that these patterns of emotional connection increase stress and tension in the family and may lead to one or more members developing psychological problems or distress. The severity of psychological symptoms is often related to the level of stress that is present within the family unit, how the family adapts to the stressors, and the availability of social supports (Bowen, 1978).

When marital conflict arises in a family, tension and anxiety increase and these feelings are expressed inappropriately towards one another in a relationship (Bowen, 1978). Both individuals contribute to the marital conflict by resisting each other's assistance or efforts to control the situation or becoming overly aware of each other's

negative attributes (Bowen, 1978). Marital conflict has serious mental health consequences for the parental figures involved as well as the children (Clavarino et al., 2011). Clavarino et al. (2011) concluded from a longitudinal study of women and children's mental health over a 21 year period that long term effects, such as symptoms related to depression, are associated with marital discord and parental separation. However, the severity of depression differs for the mother and child (Clavarino et al., 2011). Mental health issues can also develop when stress levels are high in a family unit because one spouse displays dysfunctional behavior. In this situation one spouse is dominant over the other to a point that the subordinate spouse may become anxious and possibly develop significant clinical symptoms (Bowen, 1978). Clavarino et al. (2011) found women experience more depressive symptoms in a dysfunctional relationship than when they become separated from their spouse or partner, and show greater mental health when they establish a healthy relationship with another individual.

However, maladaptive relationship patterns may occur in the family when there is an impairment of one or more children (Bowen, 1978). In this situation the parental figures focus on the impaired child or children and experience increased anxiety because of their child's deficits. There is a reciprocal interaction between the parents and child in which the more the parent focuses on the child, the more the child focuses on the parent's expectations, needs, and emotions. This situation may negatively impact the child academically, socially, physically, and psychologically. The impaired child may not engage in differentiation from the family unit and will experience increased anxiety when family stress is high (Bowen, 1978). However, members of the family unit may also

engage in emotional distancing which is a maladaptive relationship pattern in family systems that occurs when individuals distance themselves from others to reduce anxiety and tension. While this may be beneficial at times, it can be harmful to the individual if they become so isolated that they have difficulty maintaining relationships with others. This may occur within the family and with others outside of the family unit (Bowen, 1978). All of these relationship patterns can be harmful to the psychological well-being of the individuals that are involved.

Differentiation of self. When an individual from the family system consciously chooses to change their behavior from previously learned behavior they are differentiating themselves (Bowen, 1978). Differentiation is a process that involves changing intrapersonal and interpersonal characteristics to promote change (Rootes et al., 2010). Schwartz, Thigpen, and Montgomery (2006) found that disapproving parenting styles were associated with less differentiation in children with the strongest negative influence being mothers that are disapproving of their child's emotional expression. Hooper and DePuy (2010) found that higher levels of differentiation of self are associated with greater ability to cope with emotional processes. Individuals with greater differentiation of self are less likely to experience negative effects from family or interpersonal discord and tend to have greater psychological health and functioning. The likelihood of experiencing depressive symptoms decreases when the individual is able to change intrapersonal and interpersonal characteristics resulting in positive behavior patterns (Hooper & DePuy, 2010). Therefore, mothers that have lower levels of differentiation of self may have a greater risk of experiencing depression.

The stress-buffering hypothesis and family systems theory provide a theoretical foundation for the theorized relationship between the lack of perceived social support, caregiver stress, and maternal depression. This theory can be applied to the current research hypothesis in which mothers who experience stress from raising a child with mental health problems and perceive their social support as deficient may be more likely to experience maternal depression. In addition, there may be discord within the family unit that increases the likelihood of experiencing depressive symptoms. In this study, I will build upon existing research supporting the stress-buffering hypothesis and family systems theory to understand the relationship between social support and psychological well-being.

Conceptual Framework

Depression is one of the most prevalent mental health disorders in the general population, but mothers with children that have mental health issues are at greater risk of experiencing depression because of increased caregiver strain and psychological distress (Horwitz et al., 2007). Women tend to be more susceptible to caregiver stain because they typically are responsible for the caregiving responsibilities. However, mothers with sufficient social support among other protective factors experience less negative psychological distress compared to mothers that perceive their social support as deficient (Balaji et al., 2007; Harknett & Hartnett, 2011; Horwitz et al., 2007). This phenomenon is described in the stress-buffering hypothesis, which states that social support protects the individual from the negative effects of stress inducing factors (Cobb, 1976; Cohen & McKay, 1984; Cohen & Wills, 1985). The risk of experiencing psychological problems

decreases when members of a family unit are functioning at a higher level (Hooper &

DePuy, 2010). Mothers may also experience less psychological distress with the support

of BHRS Provider 50 services. Provider 50 services provide intensive treatment and

support to children with severe emotional disturbances and their families in the school,

home, and community settings (Bruns et al., 2010; Walter & Petr, 2011). However,

treatment outcomes can be limited in Provider 50 services if the mother is experiencing

maternal depression because parents are essential to goal progress (Kessler & Ackerson,

2004). The consistent implementation of treatment interventions across settings is an

important part of Provider 50 services. Goal progress can be limited when interventions

are not provided consistently across settings (Bruns et al., 2010). Caregiver strain may

remain elevated and maternal depression may persist if the child's externalizing

behaviors persist (Guo & Slesnick, 2011).

The symptoms of maternal depression are similar to those of major depression.

Major depressive disorder is described as a depressed mood and loss of interest in

activities for a minimum duration of two weeks in addition to other issues such as

appetite and sleep changes, fatigue, negative emotions and self-evaluation, and cognitive

difficulties (APA, 2000). Major depression is more common in women who report a

deficiency in social support among other socioeconomic deficiencies and caregiver strain

(Balaji et al., 2007; Mendes et al., 2011). In the following section, I will describe how the

relationship between these factors and social support impact maternal depression.

Maternal Social Support

The definition of social support has changed over time with increased research

and greater understanding of various aspects of social support. Early theories referred to

social support as the information that an individual receives that provides emotional

reassurance, feelings of being valued, and feelings of being part of a network or group

(Cobb, 1976). However, more current theories suggest that social support can be

provided to mothers in several ways. Emotional support, informational support, tangible

support, and appraisal support are some of the most common types of social support

(Grav et al., 2011; Harknett & Hartnett, 2011; Scharer et al., 2009). The mother's support

network provides assistance in a variety of areas such as gaining information, acquiring

resources, caring for children, and managing daily life stressors (Balaji et al., 2007).

Balaji et al. (2007) also suggested that social support is strongly linked to maternal health

and well-being.

Types of Social Support

The benefits of social support vary depending on the type of support available.

Emotional support is the availability of others to provide support that promotes emotional

regulation and stability such as actively listening to the individual, caring about the

individual's well-being, and having empathy towards the individual (Harknett & Hartnett,

2011). Emotional support can be provided by family, friends, or other trusted individuals

that are available in the social network (Grav et al., 2011; Harknett & Hartnett, 2011;

Scharer et al., 2009). Women have an increase in depression and other mental health

issues when there is a lack of perceived emotional support (Grav et al., 2011). Therefore,

the availability of multiple forms of social support may be a crucial factor in the prevalence of depression among women.

The availability of social support can be beneficial, but emotional support differs from information support in several ways (Ajrouch et al., 2010). Informational support is another form of support that has been shown to be an important aspect in social networks (Scharer et al, 2009). Informational support is social support provided by an individual that assists with learning how to obtain resources or providing information based on previous knowledge (Scharer et al., 2009). The potential impact of maternal informational support was highlighted in a study of postpartum women in which the mothers who received informational support about coping with depression reported less depressive symptoms than mothers who did not receive informational support (Hey & Fu, 2003). Therefore, having the knowledge about potential stressors and how to manage those stressors may protect the individual from possible psychological disorders such as depression. In addition to informational support, other forms of social support have been identified as beneficial to an individual's overall well-being.

Tangible support differs from the previous supports in which the type of support that is provided involves assistance with basic needs and physical assistance to the individual such as goods and services (Grav et al., 2011). Harknett and Hartnett (2011) found that mothers reported a lack of tangible support, specifically financial support, when personal disadvantages such as poverty, childcare burden, and health problems were evident. Appraisal support offers another form of support to mothers that can buffer against the effects of stress. Appraisal support has been identified as a form of social

support in which positive feedback, constructive feedback, or praise is provided to the individual (Grav et al., 2011; Scharer et al., 2009). These forms of support are referenced throughout the literature both as received and perceived social support.

Perceived Versus Received Social Support

While types of social support are consistent throughout the literature, perceived social support differs from received social support in some ways. Perceived social support refers to the individual's perception of the quality or quantity of the identified social supports instead of the actual support received (Gjesfjeld et al., 2010; Grav et al., 2011; Harknett & Hartnett, 2011). Several factors have been associated with a lack of perceived social support. Mothers in poverty or with lower socioeconomic status showed a lack of perceived tangible support. One reason for this phenomenon is that the individuals in the social support network have a similar socioeconomic status as the mother and therefore are unable to provide tangible supports when the mother is in need (Harknett & Hartnett, 2011).

Received social support has been shown to have an impact on maternal mental health (Balaji et al, 2007, Grav et al., 2011, Scharer et al., 2009), but perceived social support has a stronger correlation with psychological well-being. Therefore, mothers experiencing depression may have the availability of social supports, but perceive these supports as deficient and experience distress based on their skewed perceptions (Harknett & Hartnett, 2011). Further analysis of the literature will focus on the impact of perceived social support rather than received social support since there is a stronger relationship

between perceived social support and psychological well-being (Harknett & Harknett, 2011).

Risk Factors of Perceived Social Support Deficiency

Personal and environmental factors can influence an individual's perception of social support. Mothers with poorer physical or mental health report less availability of social support than mothers who are not experiencing these issues (Harknett & Hartnett, 2011). Poor maternal health is associated with the perception of less availability of tangible support such as childcare and housing (Harknett & Hartnett, 2011). In fact, Mendes et al. (2011) stated that mothers with depression are more likely to express a lack of social support from their family, partner, and public health services than mothers who are not depressed.

Maternal mental, physical health, and other environmental factors impact the perception of social support. For example, socioeconomic stress is associated with the perception of less social support, and marital and maternal employment status is associated with a positive impact on maternal perception of available support (Gjesfjeld et al., 2010). Gjesfeld et al. (2010) studied the impact of economic stress and social support on maternal depression with a sample of 340 mothers that participated in the National Institute of Mental Health study. The participants were from five community mental health clinics that served low income populations, the biological or adoptive parent of a child under age 17 receiving treatment, and living with the child. Interviews were conducted with the participants and the BDI, Money subscale of the Hassles of Environmental Poverty Instrument (HOEP), and Social Support Survey from the Medical

Outcomes Study (MOS-SSS) were used to gather information about economic stress, social support, and depressive symptoms. Participant demographic information was also collected for analysis. Data were analyzed using a correlation matrix and test of mediation to determine the significance of stated hypotheses (Gjesfeld et al., 2010).

Gjesfeld et al. (2010) found that single mothers and stay-at-home mothers reported less social support than married mothers or mothers whom were employed outside of the home. These environmental factors may impact maternal psychological well-being through a deficit of perceived social support. However, according to Gjesfeld et al., study results are limited by cross-sectional data that does not provide an explanation for causality, other variables such as having a child with behavior problems or other life stressors, a moderate response rate of 63%, and the use of a convenience sample of mothers with children in mental health treatment (Gjesfeld et al., 2010). Therefore, additional research is needed to support these findings.

In addition to socioeconomic status, marital status, and employment status, several child related factors have been indicated in the literature that impact perceived social support. Mothers with multiple children or a child with mental or physical health problems, higher caregiver burden, and low socioeconomic status are more likely to report a lack of tangible and emotional support (Harknett & Hartnett, 2011). Mothers of children with mental health problems experience emotional strains in parenting and managing child behaviors (Scharer et al., 2009). Harknett and Hartnett (2011) found that mothers reported greater deficits in housing and child care support when caring for multiple children, and mothers caring for children with health problems reported less

emotional support. A review of the literature revealed differences in perceived social support deficits depending on the combination of personal and environmental factors. A mother's perception of social support can be influenced by a variety of factors such as the therapeutic intervention and support of a wraparound BHRS Provider 50 program..

Implication of Deficient Social Support

The presence of risk factors and lack of perceived maternal social support has been associated with negative consequences. Mothers who indicated having an insufficient social support network were more likely to experience mental health issues than mothers who reported a strong social support network (Balaji et al., 2007). Social support has an impact on mental health in the general population. Less social support has been associated with poorer quality of life and greater prevalence of anxiety and depression (Grav et al., 2011). Women tend to need more emotional support than other types of social support (Grav et al., 2011) and mothers experience increased caregiver strain and maladaptive parenting behavior when emotional support is deficient and mental health problems are present (Balaji et al, 2007).

Positive Impact of Social Support

Social support has protective qualities for mothers that reduce the negative effects of stressful stimuli (Cobb, 1976). Mothers with greater perceived social support experience less psychological distress. Mothers who perceive their support network as strong are able to maintain greater psychological functioning and positive parenting practices even when other stressors such as economic hardship are present (Prelow et al.,, 2010). Mothers who perceive their level of social support as high remain more engaged

with their child from youth through adolescence compared to mothers who perceive their social support as deficient. Consistent parental engagement with adolescent children has been shown to decrease their participation in delinquent behaviors (Ghazarian & Rhoche, 2010). Therefore, a greater perception of social support may protect mothers and children from psychological distress and engaging in risky behavior.

Maternal Depression

Depression is one of the most common mental health problems for women (Skipstein et al., 2012) and several environmental and personal risk factors have been linked to maternal depression (Ertel et al., 2011). The prevalence of maternal depression has been shown to increase to 50% for mothers of children with externalizing behavior problems such as behavior characteristics of attention-deficit/ hyperactivity disorder (ADHD) (Chronis-Tuscano et al., 2013). Women are more likely to experience depression than men, and the prevalence of depression increases for women who experience a high number of chronic stressors (Kohl et al., 2011). Mendes et al. (2011) suggested that many women experience depression at some point in their life and the level of risk increases for women with children and lower income. Additionally, the prevalence of depression is higher for women with multiple children, low social support, and more reported stressful life events (Horwitz et al., 2007).

Depression Risk Factors

Several environmental factors have been associated with maternal depression. Women with young children have a greater risk of depression because of factors such as parenting stress and low social support (Horwitz et al., 2007). Gerkensmeyer et al. (2011)

studied 139 biological, adoptive, and step-mothers who were primary caregivers and had a child with mental health problems. Information about depressive symptoms, income, child behavior problems, maternal distress, role disruption, parent perception, and social support was gathered through assessment and interview procedures. Gerkensmeyer et al. found that depressive symptoms were significantly higher for mothers with a child with mental health problems and lower income than mothers who did not experience these factors. Additionally, it was found that mothers with more depressive symptoms were more likely to report greater problems with their children regarding internalizing and externalizing behavior problems. These mothers reported higher levels of distress, role disruption, and perception of stigma and feeling blamed. The mothers with elevated depressive symptomology reported less family empowerment, satisfaction with family support, and perceived personal control than mothers with less depressive symptoms (Gerkensmeyer, 2011). However, according to Gerkensmeyer et al. (2011), study results had limited generalizability because a convenience sample consisting of mothers of children receiving mental health services was used.

Despite the limitations of generalizability, there is evidence that caring for a child with mental health problems is associated with increased stress on the caregiver and depressive symptoms in mothers. Women are at greater risk of depression than other caregivers because they tend to be the primary caregiver of the child with mental health problems (Gerkensmeyer, 2011). Mothers have additional responsibilities when caring for a special needs child that can impact maternal distress and well-being (Gerkensmeyer, 2011).

Negative Consequences of Maternal Depression

Mother's who are depressed may have a negative impact on the physical and mental health of children (Mendes et al., 2011). Mental abuse and emotional maltreatment occurs more frequently by mothers who are depressed compared to non-depressed mothers (Kohl et al., 2011). Mothers with greater psychological distress utilize more punitive parenting practices and have a negative impact on the child's health (Mendes et al., 2011; Prelow et al., 2010; Raposa et al., 2011). Depressed mothers tend to exhibit harsher, less nurturing parenting practices that negatively impact the child's cognitive and behavioral functioning that may last into adulthood (Kiernan & Huerta, 2008; Turney, 2012).

Chronis-Tuscano et al. (2013).studied the relationship between maternal depression and child mental health issues. The participants consisted of 98 mother-child dyads from ADHD groups, schools, and health providers. The mothers were chosen based on the criteria of a BDI-II score of 10 or higher and the absence of substance abuse, psychosis, and bipolar disorder. The children were between the ages of 6 and 12 years old with an estimated IQ of 70, and met the criteria for a diagnosis of ADHD. Participants were screened initially and then assessed again at the three and six month follow up appointments. Data were collected using the Disruptive Behavior Disorder checklist, Children's Impairment Rating Scale, Child Behavior Checklist, BDI-II, Structured Clinical Interview (SCID), and a comprehensive child ADHD assessment. Observational data was coded using the Dyadic Parent-Child Interaction Coding System (DPICS-III). The data were analyzed using a mixed model analysis of covariance (ANCOVA). The

study results support an integrated approach targeting mothers and children in treatment to reduce internalizing and externalizing behaviors, maternal depression, and successful treatment outcomes (Chronis-Tuscano et al., 2013).

The presence of maternal depression has been associated with a decrease in the effectiveness of interventions provided to children with externalizing behaviors (Van Loon et al., 2011) such as those in Provider 50 services. Van Loon et al. (2011) found that when there was an improvement in maternal depression, the child's externalizing behaviors also improved with behavioral intervention implementation. Kiernan and Huerta (2012) suggested that children of non-depressed mothers not only exhibit less externalizing behavior, but also tend to have greater cognitive ability. Van Loon et al. (2011) found overall benefits of behavioral health rehabilitation services; however, treatment progress increased when the child's mother was not experiencing depressive symptoms. Therefore, support through service intervention may be a beneficial factor in buffering psychological distress and improving overall functioning.

Protective Factors from Depression

Protective factors can buffer the effects of caregiver stress and reduce a caregiver's risk of developing mental health problems. Mothers who are physically healthier are less likely to develop mental health issues such as depression than mothers who have poor quality of health (Horwitz et al., 2007). Additionally, mothers with higher educational status and lower parental stress tend to have a lower risk of developing depressive symptoms as opposed to mothers who have less education and high parental stress (Horwitz et al, 2007). Another protective factor identified in the literature was the

prevalence of work in the home compared to out of the home. Mothers who work outside of the home tend to experience less depressive symptoms than mothers who work in the home or are unemployed (Gjesfjeld et al., 2010).

It is important for mothers to identify symptoms of depression, seek treatment for their depression, and understand risk factors for depression to prevent recurrent or ongoing depression. Mothers who seek treatment for their maternal depression have a positive impact on child well-being that has lasting effects (Chronis-Tuscano et al., 2013; Turney, 2012). Mothers that are psychologically healthy tend to be more involved with their child through meaningful activities, exhibit positive interaction, and practice positive parenting skills that promote successful child development (Kiernan & Huerta, 2012). Clinicians should be aware of these risk factors and protective factors of maternal depression to promote treatment progress for women and children in Provider 50 services.

Behavioral Health Rehabilitation Provider 50 Service Intervention

Caring for a child with mental health problems can be challenging for mothers and is associated with maternal physical and mental health problems (Gerkensmeyer et al., 2011). Additional services may be recommended to assist mothers with managing their child's behavior to promote healthier outcomes when challenging behaviors are present and the caregiver is unable to manage the symptoms (Gerkensmeyer et al, 2011). Provider 50 services are a form of intensive behavioral intervention that is utilized in the treatment of children with severe emotional and behavioral disorders (Painter, 2012). Multi-system case management is an important factor in the implementation of Provider

50 services to children with severe emotional disturbances and their families (Bradshaw, Brown, & Hamilton, 2008). While the goal of Provider 50 services is to provide support to at risk youth and their families, research has shown that there has been a consistent lack of social support available to these individuals with only a slight improvement with services (Kernan & Morilus-Black, 2010).

Principles

BHRS Provider 50 services and treatment interventions are based on several core values as stated in the Provider 50 treatment philosophy (Bruns et al., 2010; Walter & Petr, 2011). The voice and choice principle and youth and family team principle stress the importance of consistent involvement of the child and family in decision making in every stage of treatment. The community-based principle states that treatment must be provided in the school, home, and community to promote positive changes in all settings. BHRS Provider 50 services are individualized and strength-based services that are tailored to the client's needs and promote positive behavior change focused on the child's strengths. Natural supports are an integral piece of the Provider 50 process in which community and family supports are used collaboratively in treatment. Provider 50 program agencies have an unconditional commitment to provide services to the child and family as long as they are in need of the intensive intervention. Interagency collaboration is encouraged to provide successful intervention across all settings. The flexible resources and outcome-based service approach of the Provider 50 program infers that funding and approaches must be flexible and data must be collected to determine the client's progress and treatment outcome (Bruns et al., 2010; Walter & Petr, 2011). The core principles of

Provider 50 services describe a team based approach that has potential benefits and limitations in treatment.

Benefits and Challenges

Provider 50 services provide a multi-system care model that benefits the child in treatment and their family (Kessler & Ackerson, 2004). This strength-based treatment promotes positive behavior change through behavior modification techniques in a collaborative framework. The educational, psychological, medical, and family systems work together to develop treatment goals, discuss treatment progress, and address barriers to treatment. The parent is especially important to the treatment team and can greatly influence treatment progress. It is suggested that the parent's social support, mental health, and physical health be addressed in addition to the child's needs since the parent is such as integral part of the treatment process (Kessler & Ackerson, 2004). However, the effectiveness of Provider 50 services has been questioned and continued research has been recommended to clarify the impact of Provider 50 services on child and family well-being (Bruns et al., 2010).

Several factors have been indicated as impediments to treatment outcomes. According to Van Loon et al. (2011), maternal depression can negatively affect treatment outcomes for children with externalizing behavior problems. Maternal depression and parenting practices are associated with treatment outcomes of children diagnosed with disorders such as attention deficit hyperactivity disorder (Chronis-Tuscano et al., 2013). Maladaptive relationship patterns may occur and have a negative impact on the mother and child's psychological well-being when one or more children in a family unit have

impairment such as a mental health problem. For example, impaired children may not engage in differentiation from the family unit and experience increased psychological distress when family tension is high (Bowen, 1978). However, mothers may experience improved mental health and a greater sense of support when intensive behavioral health treatment interventions are implemented (Van Loon et al., 2011).

Conclusion

Maternal depression is a serious mental health concern among women in the United States (Ertel et al., 2011). Mothers may be at greater risk of depression when social support is perceived as deficient and prolonged stress occurs from raising a child with mental health issues (Horwitz et al., 2007). Assistance provided to the parent and child through Provider 50 services may alleviate some of the caregiver strain and decrease the child's externalizing behaviors (Painter, 2012). However, while Provider 50 services promote a team approach to treatment, research suggests that there continues to be a perceived deficit in social support despite the intensive intervention provided (Kernan & Morilus-Black, 2010). Research is needed to further explore the relationship between perceived social support and maternal depression, as well as, Provider 50 service intervention and maternal depression.

Several variables must be considered in the relationship between perceived social support and maternal depression. While other personal and environmental variables such as physical health and socioeconomic status may have an impact on maternal depression (Harknett & Hartnett, 2011), the perception of a strong support system may protect mothers from the negative influences of those stressors (Balaji et al., 2007). Improving

social support in Provider 50 services is essential to promoting treatment progress and improvement of the client's overall functioning (Kernan & Morilus-Black, 2010). The results of this study may be used to inform clinicians about the importance of considering maternal mental health in Provider 50 services and raise awareness for additional support to mothers in seeking treatment for their own mental health issues. Future research may include an analysis of interventions that promote social support to mothers in Provider 50 services. Additionally, it would be beneficial to determine if there is direct causality between Provider 50 service interventions, social support, and maternal depression. In the following chapter I will discuss the methodology used to study the relationship between Provider 50 services and maternal depression with the moderation of perceived social support.

Chapter 3: Research Method

Introduction

In the previous chapter, I provided a synthesis of the literature available in understanding how perceived social support impacts maternal depression and how BHRS Provider 50 behavioral health services impact maternal depression and perceived social support. The interaction between the study variables may be affected by extraneous variables, but researchers have showed that additional information is needed in this area to further understand the relationship of these variables. The purpose of this study was to identify if there was a relationship between the rate of involvement in BHRS services and maternal depression with the moderating variable of perceived social support. This chapter will provide a review of the quantitative methodology used in this study. I will describe the research design and rationale, target population, sampling and sampling procedures, recruiting procedures, participation, and data collection procedures. Additionally, I will provide detailed information about instrumentation, threats to the validity of the study, and ethical procedures.

Research Design and Rationale

In this study, I used a nonexperimental survey design with a cross-sectional analysis of a sample of mothers with children in BHRS Provider 50 services. In this study, the independent variable was the rate of involvement in BHRS services with the dependent variable identified as the severity of depression as indicated on the BDI-II. The moderating variable was the level of perceived social support as indicated on the MSPSS. Quantitative methods were used to analyze the interval variables of depression and

perceived social support and the ratio variable of the rate of involvement in BHRS

Provider 50 services.

A quantitative survey design was appropriate for this study because an analysis of

the relationship between the independent, dependent, and moderating variables were

expected to provide data needed to answer the research hypotheses. A correlational

regression was used to identify the relationship between the rate of involvement in BHRS

and the severity of depression. A multiple regression was conducted to identify if the

level of perceived social support moderated the relationship between depression and the

rate of BHRS Provider 50 services. The identified self-administered questionnaires had

established significant reliability and validity scores. These questionnaires were used to

measure the current study variables and provided necessary data to test the stated

hypotheses.

Population and Sampling Procedures

The target population for this study was mothers with children in BHRS Provider

50 services in the northeast region of Pennsylvania. The northeast region providing

BHRS Provider 50 services consisted of Luzerne, Lackawanna, Wyoming, and

Susquehanna counties as indicated by the Northeast Behavioral Health Care Consortium

(NBHCC), which is a nonprofit organization that manages behavioral health services for

members who receive medical assistance in the Health Choices behavioral health

programs (NBHCC, 2014). According to the NBHCC (2014) statistics, there are

approximately 4,200 BHRS Provider 50 clients in the northeast regions of Pennsylvania.

The sample size was generated from the target population estimate that would be required to provide an accurate representation of the population.

A priori power analysis was conducted using G*Power 3.1.9.2 software (Faul, Erdfelder, Lang, & Buchner, 2007) to determine a sample size for the research study. The sample size was determined with a moderate effect size of 0.15, an alpha level of 0.05, a power level of 0.95, and two tested predictors. The total sample size for a linear multiple regression analysis was indicated as 107. Therefore, approximately 107 participants needed to be recruited for the research study to detect significant correlations between predictor variables.

Participants were mothers with at least one child who had been clinically diagnosed with a mental health disorder between the ages of 3 and 18 and were currently enrolled and receiving services in a BHRS Provider 50 program in northeast Pennsylvania. The Provider 50 programs were located in community-based mental health agencies that provide intensive behavioral treatment to children with emotional and behavioral problems. The mothers ranged in age from 20 to 58 with varying ethnicity, marital status, education, and socioeconomic status. To be included in the study, the mothers had to be the biological or adoptive parent of the child in the BHRS program, have sole or shared custody of the child, and live with the child. The participants were obtained from a convenience sample based on their availability to participate in the study.

Recruitment and Data Collection Procedures

A recruitment letter was sent to agencies that provided BHRS Provider 50 services to obtain potential participants for the study. Information about the study was

detailed in the recruitment letter. Flyers (see Appendix B) were distributed by two local

agencies to their consumers and posted in the community to provide additional

opportunity to potential participants that did not receive a study flyer from a participating

agency. Based on the responses generated from the flyers, a convenience sample of

participants was obtained. The participants were provided contact information to

participate in the study. When potential participants contacted me, they were screened for

eligibility using a telephone transcript (see Appendix C).

Once eligibility was established, the participants provided a mailing address

where the questionnaires were sent to be completed. Informed consent forms were

distributed to participants along with the questionnaires with details about the study. The

questionnaires were coded for each participant, and directions were highlighted on each

questionnaire to ensure that the participant circled a response for each statement on the

BDI-II, MSPSS, and demographic form. A self-addressed, prepaid envelope was

provided to each participant to return the completed surveys. Data were collected over a

2-month period in which questionnaires were mailed, completed, and returned for

analysis. Incentives were mailed to participants upon receiving completed survey

information. Participants received one certificate for buy one item, get one free of equal

or lesser value from Rita's Ice Cream Shop. The incentives were sent out to the addresses

associated with the recorded survey code.

Data were entered into the computer and statistically analyzed using SPSS 21.0

software. A debriefing letter was sent to participants 1 month after the completion of the

study to the addresses provided by the participants. Letters were also sent to the

participating agencies to be distributed to consumers and staff as appropriate.

Instrumentation and Operationalization

Participants were given two self-administered questionnaires and a demographic

form that were used to collect data regarding perceived social support, depressive

symptomology and severity, and demographic information. The BDI-II and MSPSS

questionnaires are surveys that are designed to obtain information in a short period of

time. These instruments were the best fit for the study because they measure variables

that were being analyzed in the study and have statistically significant reliability and

validity (Beck et al., 1996; Dahlem, Zimet, & Walker, 1991; Dozois et al., 1998; Wang &

Gorenstein, 2013; Zimet et al., 1988). Permission was obtained to use the BDI-II in the

study (see Appendix F). The demographic form was a self-made questionnaire that

provided data that were used in the analysis of the rate of BHRS Provider 50 involvement

as well as background information such as child custody status, yearly household income,

and race.

Beck Depression Inventory – Second Edition

The BDI-II is a 21-item instrument that is designed to measure the severity of

depression in adolescents and adults age 13 years and older (Beck et al., 1996). The BDI-

II was revised from the original BDI to align more comprehensively with the *DSM-IV*

criteria for major depressive disorder (Quilty, Zhang, & Bagby, 2010). The BDI-II

assesses symptoms of (a) mood, (b) pessimism, (c) sense of failure, (d) self-

dissatisfaction, (e) guilt, (f) punishment, (g) self-dislike, (h) self-accusations, (i) suicidal

ideas, (j) crying, (k) irritability, (l) social withdrawal, (m) indecisiveness, (n) body image change, (o) work difficulty, (p) insomnia, (q) fatigability, (r) loss of appetite, (s) weight loss, (t) somatic preoccupation, and (u) loss of libido as reported in the previous 2-week period. A 4-point Likert scale is used for each symptom in which the examinee chooses the statement that best describes the current symptoms. The statements have a score between 0 and 3 in which the higher the score, the greater symptom severity (Beck et al., 1996).

The BDI-II can be administered orally or as a self-administered questionnaire (Beck et al., 1996). For self- administration, the examiner reads the instructions to the examinee and then the examinee answers the 21 items presented in the BDI-II. The completion time for the self-administered BDI-II is approximately 5-10 minutes for most individuals. The BDI-II is scored by adding the numbers accumulated for the 21 symptoms and then comparing the sum of the scores to the overall severity levels for depression. The maximum score is a 63 and the lowest score is a 0. There are four levels of depression indicated in the BDI-II. A score from 0 to 9 indicates minimal or subclinical severity, 10 to 16 indicates mild severity, 17 to 29 indicates moderate severity, and 30 to 63 indicates severe depression. These cutoff scores were obtained from statistical analysis of clinical ratings (Beck et al., 1996).

Reliability and validity. The BDI-II has shown high reliability and validity as indicated by current research analyzing the use of the BDI-II with varied participant samples (Wang & Gorenstein, 2013). Wang and Gorenstein (2013) analyzed 118 studies that used the BDI-II to identify depression in nonclinical, medical, and psychiatric or

inpatient samples. It was found that the BDI-II maintained sensitivity of criterion validity

and was a valid tool for indicating depression in various populations. However,

variability of cutoff scores was found between nonclinical, medical, and clinical samples.

Nonclinical samples had the lowest range (10 to 16), medical samples had a broader

range (7 to 20), and clinical samples had a higher range (19 to 31) of cutoff scores (Wang

& Gorenstein, 2013).

The BDI-II content and construct validity have been supported in the research

suggesting that the quality of the test is adequate and the test is related to measures of

theory-driven constructs (Dozois, Dobson, & Ahnberg, 1998; Wang & Grenstein, 2013).

The BDI-II has been improved from previous versions in which it has been shown to

have an increased correlation with the diagnostic statistical manual diagnosis of

depression; however, it has been suggested that this test should only be used as a

screening tool for depression. The cognitive-affective and somatic-vegetative dimensions

have been indicated across studies as consistent factor structures of the BDI-II. The

between-factor correlation for these dimensions for student and outpatient samples has

been shown to be $r = 0.62$ and 0.66. Additionally, the BDI-II scales showed high

convergent validity (0.66 to 0.82) when compared to other similar assessment tools such

as the Hamilton Depression Rating Scale (HAM-D), Center for Epidemiologic Studies of

Depression (CES-D), and the Montgomery-Asberg Depression Rating Scale (MADRS).

The BDI-II also showed significant convergent validity with other tools that assess

anxiety such as the Beck Anxiety Inventory (BAI), Hamilton, Anxiety Rating Scale

(HAM-A), and the State-Trait Anxiety Inventory (STAI) ranging from 0.37 to 0.83

(Wang & Gorenstein, 2013). The BDI-II has high internal consistency ranging from 0.83 to 0.96 and retest reliability ranging from 0.73 to 0.96 (Dozois et al., 1998; Wang & Gorenstein, 2013).

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS is a 12-item self-report scale that was developed to measure an individual's perceived social support from friends, family, and significant others (Herguner et al., 2014; Zimet et al., 1988;). The MSPSS responses are rated on a 7-point Likert scale with scores ranging from 12 to 84. Higher scores on the MSPSS indicate a higher perception of social support. Participants circle the number that best describes how they feel for each item ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). The MSPSS was initially administered to 275 Duke University undergraduates enrolled in introductory psychology courses. The participants ranged from 17 to 22 years of age ($M = 18.6$, $SD = .88$) which consisted of 136 women and 139 men. While 275 students participated in the initial assessment, 69 students participated in the retest procedures (Zimet et al., 1988).

Reliability and validity. The MSPSS has been shown to have good internal consistency with an overall score of .88 using Cronbach's coefficient alpha (Zimet et al., 1988). The family subscale had a reliability score of .87. The significant other subscale had a reliability score of .91 and the friends subscale had a reliability score of .85. A test-retest score of .85 was obtained for the MSPSS when administered to the participants after 2 to 3 months from the initial assessment, which showed strong internal reliability and stability within that time limit. When the MSPSS subscales were compared with the

depression and anxiety subscales of the Hopkins Symptoms Checklist (HSCL), there was a significant correlation ($r = -.25$, $p < .01$) that supported the construct validity of the MSPSS. (Zimet et al., 1988). Additionally, Dahlem, Zimet, and Walker (1991) found the MSPSS to have good internal reliability in a study of the moderating effects of social support between stressful life events and depression. Similar to the current study, Dahlem, et al. used the MSPSS in testing the buffering hypothesis with life stressors, depression, and perceived social support.

Behavioral Health Rehabilitation Provider 50 Services

The rate of BHRS Provider 50 service is defined as the number of years and number of weekly hours that a therapeutic staff support (TSS), mobile therapist (MT), and behavior specialist consultant (BSC) provide billable services with the client and family as prescribed and authorized by the behavioral health organization. TSS are bachelor level clinicians who provide intensive individualized interventions to clients in home, school, and community settings. While TSS provide direct intervention, they are supervised by master level clinicians such as an MT or BSC. The MT is a master level clinician that provides direct intervention, treatment planning, and service coordination to clients. The BSC is a master level clinician that performs treatment planning, coordination of services, and supervises therapeutic interventions in the home, school, and community settings.

For the purpose of this study, data regarding the rate of BHRS Provider 50 services was collected by a self-made demographic questionnaire (Appendix A). Two items on the questionnaire were used to collect the duration and frequency of services

provided that was multiplied during the data analysis to find the rate of services provided. The first question on the demographic form, "How many years has your child been receiving BHRS Type 50 services?" identifies the duration of services. The available responses for this question consisted of 0 to 1, 1 to 2, 2 to 3, 3 to 4, and 5+. The second question on the demographic form, "How many hours per week does your child receive BHRS Type 50 services?" identifies the frequency of services. The available responses for this question consisted of 0 to 5, 6 to 10, 11 to 15, 16 to 20, 21 to 25, 26 to 30, and 30+. Higher scores on these responses indicated greater duration and frequency of services. The product of these scores was used to identify the rate of involvement of BHRS Provider 50 services as reported by mothers of children receiving these services.

Data Analysis Procedures

Research Questions and Hypotheses

Data analysis will be performed to test the null and alternative hypotheses associated with each research question as presented below.

RQ1: Does the rate of use of BHRS Provider 50 services predict the level of depression reported by mothers of children in BHRS Provider 50 services?

$H_1 1$: The rate of BHRS Provider 50 services reported by mothers of children in this program negatively predicts the level of maternal depression measured by the Beck Depression Inventory-II.

$H_0 1$: The rate of BHRS Provider 50 services reported by mothers of children in this program does not predict the level of maternal depression measured by the Beck Depression Inventory-II.

RQ2: Does perceived social support moderate the relationship between maternal depression and the rate of use of BHRS Provider 50 services?

*H*₁2: The relationship between the rate of use of BHRS Provider 50 services as reported by mothers of children in Provider 50 programs and depression as measured by the Beck Depression Inventory- II will be moderated by perceived social support as measured by the Multidimensional Scale of Perceived Social Support.

*H*₀2*:* The relationship between the rate of use of BHRS Provider 50 services as reported by mothers of children in Provider 50 programs and depression as measured by the Beck Depression Inventory- II will not be moderated by perceived social support as measured by the Multidimensional Scale of Perceived Social Support.

Analysis

Statistical data were analyzed with the latest version of IBM SPSS statistical software for Windows. Data were inputted into SPSS and a linear regression analysis was conducted to test *Hypothesis 1* with the calculated rate of BHRS Provider 50 services as the predictor variable and depression scores measured by the BDI-II as the criterion variable. The probability value of this analysis was compared to an alpha level of .05 to interpret the analysis as supporting *Hypothesis 1*. According to Gravetter and Wallnau (2004) linear regression analysis is recommended to identify an equation that describes the relationship between two variables.

A moderator analysis was performed to test the predicted moderation of perceived social support as indicated in *Hypothesis 2*. A hierarchical multiple regression was performed with the rate of BHRS Provider 50 services as the predictor variable,

perceived social support scores measured by the MSPSS as the moderator variable, and depression scores measured by the BDI-II as the criterion variable. Fairchild and MacKinnon (2010) recommended centering predictor and interaction variables before conducting an estimation of moderation effects to control for multicollinearity and improve accuracy of interpretations.

Threats to Validity

The study was considered to have some threats to external validity. The participants were chosen based on a convenience sample in which it was assumed that there were pre-existing differences between the participants who volunteered for the study and those that chose not to participate in the study. The sampling procedure limits generalizability of the study results from the sample to the population because of concerns with over-representation or under-representation of the research results.

Protection of Participants

Ethical procedures were implemented during the research study to protect participants. Participants were screened and provided with information over the telephone prior to receiving information in the mail. Informed consent forms were distributed to participants as the first sheet in the packet of mailed surveys. The participants were advised that their participation in the study was voluntary and they received a small incentive for their participation. The participants were informed that participation in the study would not impact their child's behavioral health treatment or services and they had the right to decline or discontinue participation at any time. Participants remained anonymous and data collected from the participants was coded to

maintain confidentiality. An excel spreadsheet was created to record participant codes. Hardcopy data were entered into the computer and the electronic data were secured on a computer that was password protected. Hardcopies of data were destroyed once the information had been scanned and imputed into SPSS. The electronic data will be stored in the researcher's computer for the duration of 5 years and will then be destroyed following the 5 year period. Only the researcher will have access to the electronic data. The potential psychological, relationship, legal, economic, professional, or physical risks anticipated for this study were low. Contact information for low cost mental health services was provided on the informed consent form for participants that were in need of mental health treatment or crisis services.

Summary

The proposed cross-sectional, nonexperimental research study used quantitative methods to identify correlations between maternal depression and the rate of involvement in BHRS Provider 50 services with a moderating variable of perceived social support. A correlational analysis and linear regression analysis were used to predict the relative strength of data collected from the convenience sample (n = 104) of mothers of children receiving BHRS Provider 50 services in northeast Pennsylvania. Data were collected using the BDI-II, MSPSS, and demographic form and analyzed using SPSS software. Ethical standards were followed regarding informed consent, data collection and storage, and protection of participants. Potential threats to the validity of the study were identified and considered in data analyses. In Chapter 4, I will provide a detailed description of the research study results.

Chapter 4: Results

Introduction

The purpose of this quantitative survey study was to identify if the rate of BHRS used negatively predicted the severity of depression among mothers with children receiving BHRS. Additionally, I examined the moderation of perceived social support on the relationship of the rate of BHRS used and maternal depression. The severity of depression was measured using the BDI-II. The independent variable was the rate of involvement in BHRS as indicated on the demographic form, and the moderator variable was the level of perceived social support as measured on the MSPSS. Data were analyzed with the SPSS Version 21.0. Linear regression and hierarchical multiple regression procedures were used to analyze study data to answer the following research questions and hypotheses.

RQ1: Does the rate of use of BHRS Provider 50 services predict the level of depression reported by mothers of children in BHRS Provider 50 services?

$H_1$1: The rate of BHRS Provider 50 services reported by mothers of children in this program negatively predicts the level of maternal depression measured by the Beck Depression Inventory-II.

$H_0$1: The rate of BHRS Provider 50 services reported by mothers of children in this program does not predict the level of maternal depression measured by the Beck Depression Inventory-II.

RQ2: Does perceived social support moderate the relationship between maternal depression and the rate of use of BHRS Provider 50 services?

$H_1$2: The relationship between the rate of use of BHRS Provider 50 services as reported by mothers of children in Provider 50 programs and depression as measured by the Beck Depression Inventory- II will be moderated by perceived social support as measured by the Multidimensional Scale of Perceived Social Support.

$H_0$2: The relationship between the rate of use of BHRS Provider 50 services as reported by mothers of children in Provider 50 programs and depression as measured by the Beck Depression Inventory- II will not be moderated by perceived social support as measured by the Multidimensional Scale of Perceived Social Support.

This chapter begins with a description of the data collection procedures and sample followed by a review of the descriptive statistics and the statistical analysis findings. Tables will be provided to support the analyses and findings.

Data Collection Procedures

Data collection procedures closely followed the steps in the research proposal; however, there were minor deviations with the timing of events. One month prior to receiving approval to conduct the study from the Walden University Institutional Review Board (IRB), a recruitment letter was sent out to various agencies that provide BHRS Provider 50 services in the Northeast Pennsylvania region inviting their participation in the study. Two agencies agreed to distribute study flyers (see Appendix B) to current consumers and post flyers in their waiting areas. Once IRB approval was obtained on April 28, 2015, flyers were placed in public places in Luzerne and Lackawanna counties, distributed by the BHRS Provider 50 agencies, and e-mailed to local support groups over a 3-week period. Additionally, I promoted the study through "word of mouth" in the

community, and information about the study was provided upon request.

Data collection began on May 1, 2015 after the first flyers were posted at participating agencies and in the community. When participants contacted me, they were screened for eligibility using a telephone transcript (see Appendix C). Packets containing a prepaid envelope with my address stamped on the front, an informed consent form, a BDI-II form, an MSPSS questionnaire, and a demographic form were mailed to the address provided by the participant (see Appendices D, E, and F for supporting documents). Despite allowing additional time for data collection, no further responses were received after June 21, 2015. A total of 104 participant responses were collected. The incentives were distributed to each participant within 1 business day of receiving each completed survey response to the address associated with the participant's survey code. Dissemination letters were sent out to participants 1 month after the completion of the study.

Data Collection Discrepancies

The data collection procedures followed the proposed plan except for the location of recruited participants and the duration of time needed to collect surveys. While agencies in Luzerne, Lackawanna, Wyoming, and Susquehanna counties were contacted to participate in the study, only one agency from Lackawanna county and one from Luzerne county agreed to participate. Therefore, recruitment was limited to participants from these two counties. Another discrepancy occurred with length of time to collect data. The actual time needed to collect data was 2 months plus additional wait time for responses instead of a 1-month period as previously intended. The additional time was

required to collect enough surveys to satiate a sample size that would be large enough to perform regression analyses. According to G*Power 3.1.9.2 software (Faul et al., 2007) with a target population of 4,200, a moderator effect size of 0.15, an alpha level of 0.05, and a power level of 0.95, the estimated sample size was 107 participants for a linear regression analysis.

Recruitment and Response Rates

The population consists of 4,200 potential participants (NBHCC, 2014) for this study from the Northeast region of Pennsylvania. The recruitment rate was calculated to be 2.7% of the population based on the recruitment of 115 participants who agreed to complete the survey. The response rate was estimated to be 34.6% based on the known distribution of 300 flyers to potential participants and 104 completed surveys. However, this estimation did not account for the number of individuals that may have seen flyers in the community, but rather from the cooperating agencies' distribution of flyers to consumers. Despite the low response rate, 104 out of 115 participants returned completed surveys, which is equivalent to approximately a 90% retention rate.

Demographic Characteristics

The sample consisted of 104 female participants ranging in age from 20 to 58 (M = 32.08). Most of the participants reported their race as European American (58.7%), while others identified themselves as multiracial (20.2%), African American (19.2%), or Asian American (1.9%). The average years of education completed was 12.44 (range = 9-22). In response to marital status, the plurality of the participants reported being single (47.1%), followed by married (44.2%), divorced (6.7%), and widowed (1.9%). The

average household income ranged from $10,000 to $19,999 per year (31.7%). Other

participants indicated their income to be less than $10,000 per year (17.3%), between

$20,000 and $29,999 per year (28.8%), $30,000 to $39,999 per year (7.7%), $40,000 to

$49,999 per year (8.7%), $50,000 to $74,999 per year (1.9%), $75,000 to $99,999 per

year (2.9%), and 1% preferred not to state their yearly household income. Descriptive

statistics of the sample are reported in Table 1.

Table 1

Demographic Characteristics of Study Participants (N = 104)

Variable	Frequency	Percentage	Mean	Range
Age	--	--	32.08	20-58
Race				
Caucasian	61	58.7		
Multiracial	21	20.2		
African American	20	19.2		
Asian American	2	1.9		
Education (years)	--	--	12.44	9-22
9	3	2.9		
10	15	14.4		
11	12	11.5		
12	44	42.3		
13	5	14.4		
14	11	10.6		
15	1	1.0		
16	7	6.7		
17	1	1.0		
18	4	3.8		
22	1	1.0		
Marital Status				
Single	49	47.1		
Married	46	44.2		
Divorced	7	6.7		
Widowed	2	1.9		
Household Income				
< $10,000	18	17.3		
$10,000-$19,999	33	31.7		
$20,000-$29,000	30	28.8		
$30,000-$39,999	8	7.7		
$40,000-$49,999	9	8.7		
$50,000-$74,000	2	1.9		
$75,000-$99,999	3	2.9		
Prefer not to say	1	1.0		
Custody Status				
Sole	70	67.3		
Shared	34	32.7		

External Validity of the Population Sample

The sample appeared to be a good representation of the overall population of women in Pennsylvania as evidenced by the following statistical data. In regards to race, participants identified themselves as European American (58.7%) more than African American (19.2%), Asian American (1.9%), and multiracial (20.2%). These finding are similar to those of the U.S. Census Bureau (2013) in which the following statistics were presented for race in Pennsylvania: European American (83.2%), African American (11.5%), Asian American (3.1%), and Hispanic American or Latino (6.3%). However, in Pennsylvania, multiracial was reported to be 1.8%, which is different than the sample data. Education was similar between the sample and the population in which the sample showed more participants reported completing between 12 to 15 years of education (68.3%) than 16 or more years (12.5%), and the U.S. Census Bureau (2013) reported that 88.7% of individuals in Pennsylvania completed high school or higher, and 27.5% obtained a bachelor's degree or higher. Additionally, the mean age of the sample was 32.08 with a range from 20- to 58-years-old. This range was indicated as the most prevalent age range in Pennsylvania with persons under 18-years-old comprising 21.3% of the population and persons 65-years-old and over comprising 16.4% of the population (U.S. Census Bureau, 2013). Through a deduction process, it was determined that approximately 62.3% of the individuals in Pennsylvania are between the ages of 18 and 65.

Coding Procedures

Prior to conducting the data analysis in SPSS, ordinal data of race, marital status,

income, custody status, and rate of BHRS services were coded. Race was coded numerically in the following order: 1 = multiracial, 2 = African American, 3 = Pacific Islander American, 4 = Native American, 5 = Asian American, and 6 = European American (Hispanic and Non-hispanic). Marital status was coded numerically in the following order: 1 = single, 2 = married, 3 = divorced, and 4 = widowed. Yearly household income was numerically coded in the following order: 1 = less than $10,000, 2 = $10,000 to $19,999, 3 = $20,000 to $29,999, 4 = $30,000 to $39,999, 5 = $40,000 to $49,999, 6 = $50,000 to $74,999, 7 = $75,000 to $99,999, 8 = $100,000 to $150,000, and 9 = I prefer not to say. Custody status was coded in the following order: 1 = sole and 2 = shared.

The rate of use of BHRS Provider 50 services was calculated from the reported duration of years and frequency of weekly services received. The duration of years was coded numerically based on the following categories: 1 = 0 to 1 years, 2 = 1 to 2 years, 3 = 2 to 3 years, 4 = 3 to 4 years, 5 = 4 to 5 years, and 6 = 5 or more years. The frequency was coded by hours per week in the following order: 1 = 0 to 5 hours, 2 = 6 to 10 hours, 3 = 11 to 15 hours, 5 = 16 to 20 hours, 6 = 21 to 25 hours, 7 = 26 to 30 hours, and 7 = 31 or more hours per week. The coded value of duration multiplied by the coded value of frequency produced the rate of use of BHRS Provider 50 services, and ranged from 1 to 42. Within this range, the lower the product of the coded scores, the less services used, and the higher the product, the more services used. Coding was necessary to produce numerical values that could be inputted in to SPSS and used for data analyses.

Analysis of Normality and Outliers

The independent, dependent, and moderating variables were tested for outliers

and distribution normality. This step is essential to perform prior to conducting a

parametric analysis such as a linear regression and hierarchical multiple regression to

identify and correct any assumption violations (Osborne & Waters, 2002). The variables

were determined to be free of outliers using the following method. The data were

screened for outliers using the outlier labeling rule in which the range of data was

calculated by multiplying the value of g with the difference between the 25th percentile

and the 75th percentile. The product of this calculation was then added to the third

quartile to determine the upper limit or subtracted from the first quartile to determine the

lower limit of the distribution range (Hoaglin, et al., 1986; Tukey, 1977). Data points that

exceeded those limits were outliers. In this study the raw data for each variable was

calculated with $g = 2.2$ as suggested by Hoaglin and Iglewicz (1987) to include a broader

range of scores in the data set. The value of g is a function of n in the equation $B(g, n) = x$.

This equation represents the probability that no outliers exist in a distribution (Iglewicz &

Banerjee, 2007). The g-value of 2.2 is recommended for sample sizes consisting of 20 to

300 participants (Hoaglin & Iglewicz, 1987). This value was appropriate for this study

because the criteria were met to perform the appropriate calculations.

The data were analyzed for skewness after the data points were determined to be

within range of the distribution. The BDI-II scores from the raw data were positively

skewed (statistic = 0.921, standard error = 0.237) with a kurtosis statistic of 0.692 and a

standard error of 0.469. There was an increase in the distribution normality (skewness = -

0.398, kurtosis = -0.437) after a square root transformation was conducted. This transformation produced a mean of 3.23 and a standard deviation of 1.817 within a normal distribution as shown in Figure 1. The MSPSS raw data scores were normally distributed (statistic = -0.309, standard error = 0.237) with a kurtosis statistic of -0.571 and a standard error of 0.469. The Shapiro-Wilk test of normality showed a 0.970 statistic for MSPSS scores with a 0.020 significance level. This indicated that while the data were not perfectly distributed, the data were within the limits of a normal distribution ($M=$ 4.59, standard deviation = 1.38) as shown in Figure 2. The rate of BHRS raw data were positively skewed (statistic = 0.780, standard error = 0.237) with a kurtosis of -0.386 and standard error of 0.469. Using the square root transformation method, the distribution increased in normality (statistic = 0.219, standard error = .237, kurtosis = -.847) with a mean of 2.97 and a standard deviation of 1.106 as shown in Figure 3.
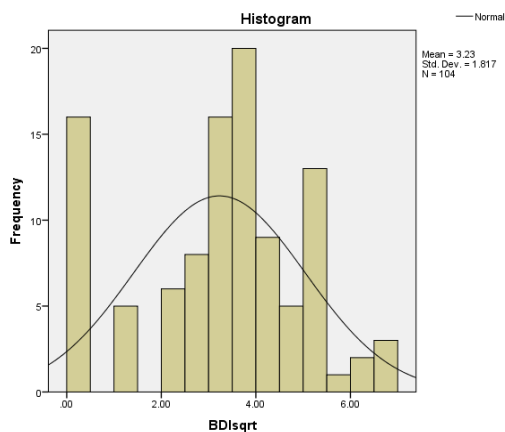
Figure 1. Histogram of depression scores.
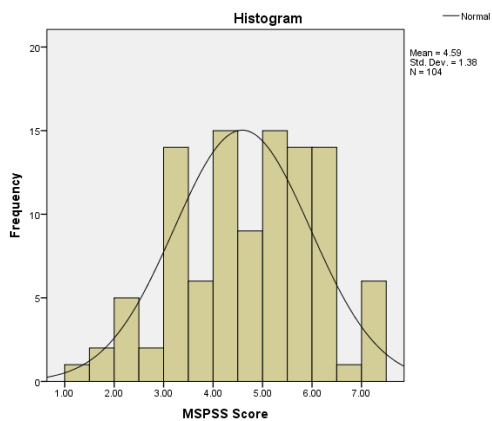
Figure 2. Histogram of perceived social support.
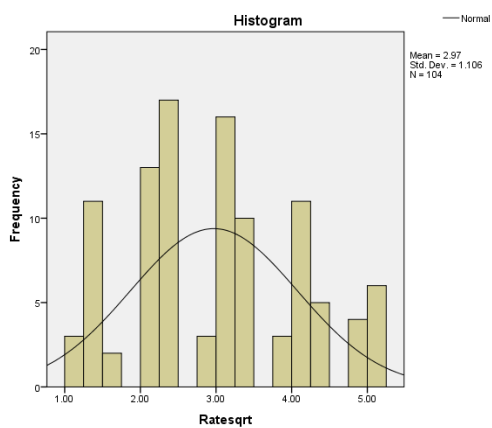
Figure 3. Histogram of rate of BHRS.

Analyses and Results

Correlation Analyses

Once the data were analyzed and identified as having normal distributions without

outliers, correlation analyses were conducted to identify any relationships between the

independent, dependent, and moderator variables. A Pearson's correlation test was

conducted to indicate if there were any relationships between the study variables prior to

further analyses. The variables were determined to be correlated if the probability value

of significance was less than or equal to a significance level of 0.05 for a two-tailed test.

Information about the strength and direction of the relationships between the

variables was obtained from the results of the correlational analysis. The analysis of BDI-

II scores and the rate of BHRS indicated that the Pearson's r-value was negative ($r = -

0.130$, $p = 0.190$), but did not attain significance. However, BDI-II scores and MSPSS

scores were significantly, negatively correlated ($r = -0.521$, $p < 0.001$) with a moderate

level effect size. Therefore, the greater the level of depression as indicated by the BDI-II

scores, the lower the level of perceived social support as indicated by the MSPSS scores.

MSPSS was not significantly correlated with the rate of BHRS ($r = 0.088$, $p = 0.375$).

Pearson correlation results are presented in Table 2.

Table 2

Pearson Correlation Coefficients of Study Variables (N = 104)

		BDI Score	Rate of BHRS	MSPSS Score
BDI Score	Correlation	1	-0.130	-0.521**
	Sig. (2-tailed)	--	0.190	0.000
Rate of BHRS	Correlation	-0.130	1	0.088
	Sig. (2-tailed)	0.190	--	0.375
MSPSS Score	Correlation	-0.521**	0.088	1
	Sig. (2-tailed)	0.000	0.375	--

** Correlation is significant at the 0.05 level (2-tailed).

Linear Regression Analysis

A linear regression analysis was conducted to test Hypothesis 1 which stated that the rate of use of BHRS Provider 50 services reported by mothers of children in this program negatively predicts the level of maternal depression measured by the BDI-II. A one-tailed Pearson correlation analysis of BDI-II scores and the rate of BHRS indicated a negative *r*-value ($r = -0.130, p = 0.195$), that was not significant. A linear regression analysis was conducted to further explore the relationship between depression and the rate of BHRS with an alpha level of 0.05. The square root transformed BDI-II scores variable was the dependent variable and the square root transformed rate of BHRS variable was the independent variable for the analysis. An ANOVA was performed to provide additional information about the relationship between the study variables.

Tables 3 and 4 present the results of the linear regression and ANOVA analyses. The regression results indicated that the rate of use of BHRS Provider 50 services

reported by mothers of children in this program did not significantly negatively predict the level of maternal depression measured by the BDI-II ($F(1, 102) = 1.741$, $p = 0.190$). The adjusted R^2 was 0.017 indicating that 1.7% of the variance of the BDI-II summary score was explained by the rate of BHRS summary score. The standard error of the estimate (1.81095) indicated the average distance of BDI-II score data points from the fitted regression line was 1.8%.

Table 3

Linear Regression Analysis (N = 104)

Model Summary

R			
	R^2	Adjusted R^2	Standard error of the estimate
0.130	0.017	0.007	1.81095

a.   Predictors: (Constant), Rate of BHRS
b.   Dependent Variable: BDI-II scores

Coefficients	Unstandardized coefficients		Standardized coefficients		
Model	B	Standard error	Beta	t	*p*
1 (Constant)	3.862	0.511		7.553	0.000†
Rate of BHRS	-0.213	0.161	-0.130	-1.320	0.190

a. Dependent Variable: BDI-II scores
     Note. †$p < .05$, one-tailed.

Table 4

ANOVA Analysis for H1: Relationship Between Rate of BHRS and Depression Scores (N = 104)

	SS	df	MS	F	p
Regression	5.711	1	5.711	1.741	0.190
Residual	334.512	102	3.280		
Total	340.223	103			

a.   Dependent Variable: BDI-II scores
b.   Predictors: (Constant), Rate of BHRS
    Note. †*p* < .05, one-tailed

Hierarchical Multiple Regression Analysis

A hierarchical regression analysis was performed to identify the moderation of perceived social support on the relationship of rate of BHRS and depression as stated in Hypothesis 2. The predictor variables were screened for multicollinearity and corrected prior to conducting the moderator analyses as presented in Table 5.

The rate of BHRS (Rate) and MSPSS scores (Support) were multiplied to produce a product term (Rate-Support) that represented the interaction effect of the independent variables. A Pearson correlation analysis was performed to identify multicollinearity between the predictor variables (Rate, Support) and the interaction variable (Rate-Support). The results of this analysis indicated that there was a significant correlation between the rate of BHRS and the interaction variable ($r = 0.882$, $p < 0.001$) as well as MSPSS scores and the interaction variable ($r = 0.473$, $p < 0.001$), revealing the existence of multicollinearity between both sets of variables. Multicollinearity was reduced by creating centered predictor variables (Rate-Centered, Support-Centered) by subtracting the mean from each of the predictor variables and then multiplying the residuals together

to create a centered product term (Rate-Support-Centered). A Pearson correlation

including the centered product term was performed and indicated that the previous

correlations indicating multicollinearity were no longer significant. When the centered

product term was included in the correlation, the rate of BHRS variable reduced ($r =$

0.050, $p = .614$) and MSPSS score variable reduced ($r = 0.136$, $p = 0.168$).

Centering variables in a regression model with an interaction can be beneficial for

several reasons (West et al., 1996). When variables are centered in a three-way

interaction such as in a moderator analysis, results can be interpreted from a more

meaningful value because each variable mean has a value of zero. Centering variables in

a moderator analysis reduces multicollinearity and provides results more consistent with

ANOVA (West, et al., 1996).

Table 5

Pearson Correlation with Centered Variables Correcting for Multicollinearity (N = 104)

Correlation Variables	BDI scores	Rate of BHRS	MSPSS scores
Rate-Support	-0.355**	0.882**	0.473**
Sig. (2-tailed)	0.000	0.000	0.000
Rate-Centered	-0.153	1.000**	0.089
Sig. (2-tailed)	0.121	0.000	0.369
Support-Centered	-0.560**	0.089	1.000**
Sig. (2-tailed)	0.000	0.369	0.000
Rate-Support-Centered	-0.090	0.050	0.136
Sig. (2-tailed)	0.369	0.614	0.168

**Correlation is significant at the 0.05 level (2-tailed).

The variables used in the hierarchical multiple regression analysis were the BDI-II scores ($M = 13.70$, $SD = 11.139$), Rate-Centered variable ($M = 0.000$, $SD = 6.949$), Support-Centered variable ($M = .0.000$, $SD = 1.380$), and the Rate-Support-Centered variable ($M = 0.845$, $SD = 9.781$). The BDI-II variable was selected as the dependent variable as a constant. The Rate-Centered and Support-Centered variables were entered into the first block of the regression analysis and the interaction variable (Rate-Support-Centered) was entered into the second block. In this analysis the moderation of perceived social support on the relationship between rate of BHRS used and depression scores was measured by controlling for the individual relationship of the independent variables (Rate-Centered, Support-Centered) with the dependent variable. The interaction variable (Rate-Support-Centered) was analyzed to determine whether the interaction was a stronger predictor of BDI-II scores than the independent variables separately.

The results of the hierarchical regression analysis are presented in Tables 6 and 7. The coefficient of determination $(R^2 = 0.325)$ of the regression indicated that the independent variables accounted for 32.5% of the variance in reported depression. The adjusted R^2 value was 0.305, which indicated 30.5% of variance in the dependent variable was attributed to by the independent variables of perceived social support and rate of BHRS. Based on the results of the analysis ($F(1, 100) = 0.015$, $p = 0.903$), perceived social support did not significantly moderate or contribute to the overall relationship with the dependent variable, BDI-II score. The probability of the F statistic ($p = 0.903$) was greater than the level of significance (0.05), which indicated that the null hypothesis could not be rejected for Hypothesis 2. Therefore, it was concluded that the relationship

between the rate of use of BHRS Provider 50 services as reported by mothers of children

in Provider 50 programs and depression as measured by the BDI- II was not moderated

by perceived social support as measured by the MSPSS.

Table 6

Hierarchical Multiple Regression Analysis for H2: Moderation of Perceived Social Support on the Relationship Between the Rate of BHRS and Depression Scores (N = 104)

Model Summary

Model	R	R²	Adjusted R²	Std. Error	R² Change	F Change	p
1	0.570	0.325	0.312	9.243	0.325	24.301	0.000
2	0.570	0.325	0.305	9.288	0.000	0.015	0.903

a. Predictors: (Constant), Support-Centered, Rate-Centered
b. Predictors: (Constant), Support-Centered, Rate-Centered, Rate-Support-Centered
c. Dependent Variable: BDI-II scores

Table 7

Analysis of Variance for H2: The Interaction Between MSPSS Scores and Rate of BHRS for Predicting BDI-II Scores (N = 104)

Model	SS	df	MS	F	p
1					
Regression	4151.80	2	2075.90	24.30	0.000
Residual	8627.96	101	85.43		
Total	12779.76	103			
2					
Regression	4153.09	3	1384.36	16.05	0.000
Residual	8626.67	100	86.27		
Total	12779.76	103			

a. Dependent Variable: BDI-II scores
b. Predictors: (Constant), Support-Centered, Rate-Centered
c. Predictors: (Constant), Support-Centered, Rate-Centered, Rate-Support-Centered

The hierarchical regression model coefficients were examined to determine the rate of change in the dependent variable from the independent variables as presented in Table 8. Results indicated that while the rate of BHRS did not have a significant relationship with depression scores (B = -0.167, Std. Error = 0.132, β = -0.104, p = 0.208), perceived social support was significantly negatively associated with depression scores (B = -4.448, Std. Error = 0.662, β = -0.551, $p < .001$). The interaction between rate of BHRS and perceived social support was not significantly associated with depression scores (B = -0.012, Std. Error = 0.095, β = -0.010, p = 0.903). Therefore, it was concluded that perceived social support did not moderate the relationship of rate of BHRS and depression scores on the BDI-II.

Table 8

Summary of Hierarchical Regression Analysis for Moderation of Perceived Social Support on the Relationship Between the Rate of BHRS and Depression Scores (N = 104)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	*Std. Error*	*Beta (β)*	*t*	*p*
1					
(Constant)	13.702	0.906		15.118	0.000
Rate-Centered	-0.167	0.132	-0.104	-1.268	0.208
Support-Centered	-4.448	0.662	-0.551	-6.715	0.000
2					
(Constant)	13.712	0.914		14.998	0.000
Rate-Centered	-0.166	0.132	-0.104	-1.256	0.212
Support-Centered	-4.437	0.672	-0.550	-6.607	0.000
Rate-Support-Centered	-0.012	0.095	-0.010	-0.122	0.903

a. Dependent Variable: BDI-II scores

Summary

The purpose of this study was to identify the relationship between the rate of use of BHRS Provider 50 services and depression scores (H1), and examine the influence of perceived social support as a moderator of this relationship (H2). One hundred-and-four mothers with children receiving BHRS Type 50 services agreed to participate in the study and complete a packet consisting of BDI-II, MSPSS, and demographic questionnaires. Data were collected via mail and analyzed with SPSS Version 21.0. Sample demographics appeared to be a good representation of the population with similarities in participant characteristics to the overall population. Coding procedures were performed to transform ordinal data into numerical data that could be inputted into SPSS. The data were analyzed for normality and outliers, multicollinearity, heteroscedasticity, and linearity. These issues were corrected as needed throughout the analyses.

Linear regression and ANOVA analyses were performed to identify if the rate of BHRS used negatively predicts depression scores on the BDI-II as stated in Hypothesis 1. The results of the analysis failed to reject the null hypothesis as only 1.7% of the variance of BDI-II scores was explained by the rate of BHRS ($F(1, 102) = 1.741$, $p = 0.190$). Therefore, it was determined that the rate of BHRS was not significantly associated with depression scores.

The second analysis was performed to test Hypothesis 2 that predicted perceived social support would moderate the relationship between rate of BHRS and depression scores. A hierarchical multiple regression model was used to test the predicted relationship between the dependent, independent, and moderator variables. The variables

were centered and an interaction term was produced to represent the interaction of the independent variables. The interaction variable was analyzed to determine whether the interaction was a stronger predictor of BDI-II scores than the independent variables. The coefficient of determination ($R^2 = 0.325$) indicated that the independent variables accounted for 32.5% of the variance in reported depression. Based on the analysis, it was determined that the interaction between perceived social support and rate of BHRS did not ($F(1, 100) = 0.015$, $p = 0.903$), significantly moderate or contribute to the overall relationship with the dependent variable, BDI-II score. Therefore, it was concluded that the relationship between the rate of use of BHRS Provider 50 services as reported by mothers of children in these programs and depression as measured by the BDI- II was not moderated by perceived social support as measured by the MSPSS.

Further interpretation of the study findings is summarized in Chapter 5. Limitations of the study are discussed in addition to social change implications, and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine the impact of the rate of BHRS

Provider 50 services on reported severity of depressive symptoms among mothers with

children in these services. Additionally, I examined if the perception of social support

was a significant moderating factor in the relationship between rate of BHRS used and

severity of depressive symptoms. In this study, I focused on maternal caregivers of

children with mental health concerns in BHRS Provider 50 services. This type of

program provides intensive treatment to children with emotional and behavioral problems

with a team approach involving the educational institution, family, treatment staff, and

other organizations at times (Bradshaw, Brown, & Hamilton, 2008; Bruns et al., 2010;

Kessler & Ackerson, 2004; Painter, 2012; Walter & Petr, 2011). However, there is a lack

of research about the well-being of the caregivers in this type of program who play a

crucial role in effectiveness of treatment. This chapter includes a discussion about the

study findings, interpretation of the findings, limitations of the study, recommendations

for further research, and implications for social change.

Summary of Findings

In this study, I implemented a nonexperimental quantitative method with a cross-

sectional survey design. The BDI-II, MSPSS, and a self-made demographic form were

used to collect data on severity of depression, level of perceived social support, rate of

BHRS, and sample demographic characteristics. Data were collected from a convenience

sample ($N = 104$) in the northeast region of Pennsylvania. Linear regression and

hierarchical multiple regression models were used to test the study hypotheses. According to the study results, the rate of BHRS did not predict the severity of maternal depression and the perception of social support did not moderate that relationship between the rate of BHRS used and the reported severity of depression. However, the perception of social support was significantly negatively correlated with the severity of depression symptoms.

Interpretation of Study Findings

Rate of Behavioral Health Rehabilitation Services and Maternal Depression

In this study, Hypothesis 1 was not supported, in which the duration and frequency of BHRS Provider 50 services was not a significant predictor of the severity of depression. This finding is consistent with literature that multiple factors contribute to maternal depression (Gjesfjeld et al., 2010; Harknett & Hartnett, 2011; Horwitz et al., 2007; Storfer-Isser & Carter, 2007), and changing one environmental factor such as caregiver strain may not be enough to impact the severity of depression. Caregivers are an integral part of the treatment team in BHRS Provider 50 services (Kessler & Ackerson, 2004), and when they are experiencing multiple stressors and psychological strain, treatment progress may be limited (Kiernan & Huerta, 2012; Van Loon et al., 2011). Additionally, while behavioral intervention can be successful and beneficial to families (Chronis-Tuscano et al., 2013), Provider 50 service intervention has been questioned, suggesting more research is needed to determine the effectiveness of these services on child and family well-being (Bruns et al., 2010).

Perceived Social Support as a Moderator

The perception of social support was introduced into this study as a moderator variable to examine if there was any change in the relationship between the rate of BHRS and maternal depression when this variable was introduced. However, the interaction of perceived social support did not moderate the relationship between these variables. Therefore, despite the participant's perception of social support, maternal depression was not impacted by the rate of BHRS intervention. These findings support research indicating a lack of social support in BHRS Provider 50 services with only a slight improvement in family well-being in treatment (Kernan & Morilus-Black, 2010).

Other factors such as maternal physical and mental health, socioeconomic stress, and employment status have been found to impact the perception of social support (Gjesfeld et al., 2010; Harknett & Hartnett, 2011; Mendes, et al., 2011). The impact of personal and environmental factors in the perception of social support was considered in the analysis. However, I found that perceived social support was significantly, negatively correlated with the severity of depression. This finding is consistent with research that the lack of social support is associated with greater psychological symptoms and mental health issues (Balaji et al., 2007; Grav et al., 2011; Prelow et al., 2010; Skipstein et al., 2012).

Theoretical Interpretation

The study findings were consistent with the stress-buffering hypothesis and Bowen's family systems theory that comprised the theoretical framework for this study. In the stress-buffering hypothesis, perceived social support is considered to have a

buffering effect on the psychological effects of stress (Cobb, 1976; Cohen & Wills, 1985). Similar to the current study findings, mothers who are experiencing multiple stressors and perceive their social supports as deficient are more likely to experience mental health problems such as depression (Skipstein et al., 2012).

In Bowen's family systems theory, the emotional connection and dysfunctional relationship patterns within a family increase anxiety and tension within the family unit when stressors are present (Bowen, 1978). These dysfunctional patterns are associated with mental health concerns such as depression (Franck & Buehler, 2007). Having a child with mental health or behavioral problems causes disruption in the nuclear family emotional system ultimately leading to increased tension and anxiety (Guo & Slesnick, 2011). In this study maternal depression was not significantly impacted by BHRS Provider 50 services. However, many factors contribute to the dysfunction and psychological distress within a family (Bowen, 1978) that may not be addressed within the realm of Provider 50 services. Therefore, if the mother's depression is not being treated appropriately, the reduction of caregiver strain with the support Provider 50 services would not make a difference in the severity of depressive symptoms.

Limitations

Sample Demographics

The demographic limitations of this study relate to generalizability. Originally the sample was anticipated to encompass participants from all counties in the Northeast region of Pennsylvania. However, the sample was comprised of individuals from only Luzerne and Lackawanna counties . The demographic characteristics varied within the

sample regarding race, income, custody status, education, and marital status. However, the most prevalent characteristics were single European Americans in their 30s with an average yearly household income between $10,000 and $20,000 and a high school diploma. A larger sample size may have provided more opportunity for greater diversity within the sample that would provide a stronger representation of the population. Additionally, all participants were female and, therefore, the study results are not applicable to male or paternal caregivers in BHRS Provider 50 programs.

Treatment Intervention

The results of this study are limited to mothers with children receiving BHRS Provider 50 services. These services are unique from other behavioral health treatment approaches because they implement interventions in a wraparound model that is not based in the academic institution. The wraparound services provided in this program are not the same as other behavioral health services that provide either less intensive or more intensive treatment models of care. Therefore, the results of this study may not be applicable to mothers of children in other behavioral health programs or mothers in the general population that have children with mental health problems.

Nature of the Study

Generalizability and implications of the results to the target population are limited by the nature of this study because of the sampling method and types of analyses. The participants were obtained using a convenience sample to satiate an appropriate sample size. However, this type of sampling method is inherently flawed because it is assumed that there are pre-existing differences between the participants who volunteer for the

study and those that do not participate. Convenience sampling limits the applicableness of research results from the sample to the population because of concerns with overrepresentation or underrepresentation. The instruments used for this study were self-report surveys that pose as a limitation of the study despite the previously established validity and reliability of the instruments. Participant may have responded to questions in an overly positive or negative light, and this must be considered when interpreting findings. Additionally, quantitative correlational and regression analyses were used to test the study hypotheses. While correlational relationships were found between the study variables, cause and effect relationships could not be determined using these analysis methods.

Recommendations

Recommendations for Action

Several recommendations for action may be considered from the study findings. Maternal depression is often overlooked as a treatment factor in wraparound services because the focus is on the child with severe emotional and behavioral disturbances and not the parent caring for that child. However, based on the results of this study, I found that the perception of social support is negatively correlated with the severity of depression. The study findings may be used to support information available to mothers about stressors associated with depression and protective factors that can buffer the negative effects of those stressors. Mothers of children receiving BHRS may benefit from regular screenings to identify strengths and concerns while caring for a child with mental

health issues. Agencies may increase the support that is offered to families by providing resources and referrals to caregivers when a need is indicated.

Recommendations for Future Research

The effectiveness of BHRS Provider 50 intervention has been controversial (Bruns et al., 2010) and additional research is needed to confirm the strengths and weaknesses of this treatment approach. Comparing Provider 50 services to other wraparound service interventions such as School Based Behavioral Health may be beneficial to identify similarities and differences between treatment models that can be used to improve services. Future researchers can extend knowledge on this topic by including fathers in the sample or exclusively focusing on male caregivers in regards to the study variables. Replicating the study with a greater sample size and larger geographical region may produce a stronger representation of the population. Additionally, future researchers may focus on interventions that promote social support to mothers in Provider 50 services as well as direct causality between Provider 50 services, social support, and maternal depression.

Implications for Positive Social Change

The results of this study can be applied to mothers and families within BHRS Provider 50 programs. Clinicians in behavioral health services may become more aware that while the child is the main focus of treatment, the caregiver's health must also be considered to promote effective treatment outcomes (Kernan & Morilus-Black, 2010). With a heightened awareness of the importance of caregiver psychological well-being, an increase of support and resources may be provided to mothers of children with mental

health issues. Mothers that are psychologically healthy are more likely to exhibit appropriate parenting practices that have a positive impact on the child's cognitive and behavioral functioning lasting into adulthood than mothers that are depressed (Kiernan & Huerta, 2008; Mendes et al., 2011; Prelow et al., 2010; Raposa et al., 2011; Turney, 2012). Ultimately, identifying and treating psychological issues promotes healthier individuals that can be more productive in the community.

Conclusion

In this study, I investigated if the rate of BHRS negatively predicted the severity of depression, and if the perception of social support moderated the relationship between the rate of BHRS and maternal depression. While the study hypotheses were not supported, correlational analyses indicated a significant relationship between the perception of social support and maternal depression. Therefore, the perception of social support may buffer the effects of stressors on psychological well-being. Further research is needed to clarify the effectiveness of BHRS Provider 50 intervention as a source of support to children and families. However, behavioral health clinics can promote healthier families through regular social support and caregiver strain screenings, and provide appropriate referrals and resources to those in need.

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Appendix A: Demographic Form

Directions: *Please check the response that is relevant to you.*

1. **How many years has your child been receiving BHRS Type 50 services?**

   ○ 0-1   ○ 1-2   ○ 2-3   ○ 3-4   ○ 4-5   ○ 5+

2. **How many hours per week does your child receive BHRS Type 50 services?**

   ○ 0-5   ○ 6-10   ○ 11-15   ○ 16-20   ○ 21-25   ○ 26-30   ○ 30+

3. **What type of custody status do you have with your child in Type 50 Services?**

   ○ Sole legal custody   ○ Shared legal custody

4. **What race do you identify with?**

   ○ Multiracial   ○ African American   ○ Pacific Islander American
   ○ Asian American   ○ European American (Hispanic & Non-Hispanic)

5. **What is your current yearly household income?**

   ○ Under $10,000   ○ $10,000 - $19,999   ○ $20,000 – 29,999
   ○ $30,000 - $39,999   ○ $40,000 - $49,999   ○ $50,000 – $74,999
   ○ $75,000 - $99,999   ○ $100,000 - $150,000

Appendix B: Participant Recruitment Flyer

Participants Needed for Survey

I am a counseling psychology doctoral candidate at Walden University. In fulfillment of my degree I am conducting a survey analysis with mothers in Northeastern, Pennsylvania.

RESEARCH TOPIC
This study will help to gather information about maternal well-being while caring for a child with mental health concerns.

ELIGIBILITY
If you are a woman over the age of 18 who has a child receiving BHRS Provider 50 Services (TSS/MT/BSC), please consider becoming involved in this study.

STUDY INFORMATION
Research is voluntary and participants will remain anonymous. If you decide to take part in this study, you will be asked to complete (3) brief **surveys** that combined will take approximately <u>5 minutes</u> of your time.

Participants Receive**: (1) Certificate for Buy 1 Item, Get 1 FREE for Rita's Ice Cream Shop** as a thank you gift for participating.

CONTACT INFORMATION
If you are interested in participating or would like to hear more about this study, please contact **Tammy**. It is important to remain anonymous during this study, therefore, only a mailing address will be required.

Thank you for your consideration and hopefully you will take this opportunity to provide insight into these issues towards greater social change.

Appendix C: Telephone Transcript

"Hello my name is Tammy and I am a counseling psychology doctoral student conducting research in the fulfillment of my degree at Walden University. I am glad that you have taken an interest in my study. I am conducting this study to gain additional information about maternal well-being when caring for a child with mental health concerns. Any information that you provide will be kept confidential."

First I would like to ask you a couple questions just to make sure that you are able to participate. Is that okay?"

(IF NO) "Thank you for your time, good-bye."

(IF YES) "Are you the mother of a child receiving BHRS Provider 50 services?"

(IF NO) "Would I be able to speak with the mother of the child receiving these services?"
        (IF NO) "Thank you for your time, good-bye."
                (Unless directed to call back, then reschedule time to call back.)
        (IF YES) "Restart with introduction when the potential participate is on the line."

(IF YES) "Are you over the age of 18?"

(IF NO) "Thank you for your time, unfortunately you must be over 18 to participate. Again, thank you for your time, good-bye."

(IF YES) "Do you live with the child receiving BHRS Provider 50 Services?"

(IF NO) "Thank you for your time, unfortunately the child receiving services must be living with you at least part time to participate. Again, thank you for your time, good-bye."

(IF YES) It appears that you are eligible to participate in this study. If you agree to participate in this study, three brief multiple choice questionnaires and an informational sheet describing the study will be sent to you in the mail and you will be asked to complete the surveys and send them back in a pre-paid envelope that will be provided to you. These questionnaires will be asking you about demographic information, social support, and severity of symptoms such as sadness, suicidal ideation, and changes in activity level. Participation in this study will take approximately 5 minutes of your time. This study is voluntary and you may stop at any time. The information you provide will not be used for any purposes outside of this research project. Data will be stored on a password protected computer and paper copies of questionnaires will be destroyed after they are entered into the electronic database. Data will be kept for a period of at least 5 years, as required by the university.

Your participation will provide needed information in the mental health field related to depression and mothers with children with mental health issues. Additionally, the results of this study will potentially raise awareness to the needs of caregivers in BHRS Provider 50 programs and the importance of providing support to caregivers to promote positive treatment outcomes.

"I would like to assure you that this study has been reviewed and approved by the Institutional Review Board of Walden University. However, the final decision about participation is yours."
"Would you be interested in participating?"

 (IF NO): "Thank you for your time and consideration of this study, have a good day, good-bye."

(IF YES): "Great; your participation is greatly appreciated. If you can tell me your mailing address I will send the packet of information out to you immediately. You should receive it within several business days. When you receive the packet it is important that you fill out the information completely and send it back as soon as possible. Thank you for your time today and for helping with this research study. Do you have any additional questions? (answer accordingly) Please refer to the informed consent for additional information.

Appendix D: Informed Consent Form

You are invited to take part in a research study of the impact of BHRS Provider 50 Services and Perceived Social Support on maternal depression. The researcher is inviting mothers of children in BHRS Provider 50 Services who live with the child to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher, Tammy, who is a doctoral student at *Walden University*.

Purpose
The purpose of this study is to gain information about the prevalence of depression among mothers of children in BHRS Provider 50 programs. Additionally, this study will identify if perceived social support is an important factor in the severity of depression.

Procedures
If you agree to be in this study, you will be asked to:
- Complete (3) questionnaires (Duration: 5 minutes approx.)
- Mail questionnaires in <u>pre-paid envelope</u> to the researcher (return mailing address required)

Questionnaires
- The BDI- II presents statements related to various issues such as sadness, suicidal ideation, unhappiness, and changes in activity level.

   BDI-II Sample Statements:

   Unhappiness
0	*I do not feel unhappy.*
1	*I feel unhappy.*
2	*I am unhappy.*
3	*I am so unhappy that I can't stand it.*

   Changes in Activity Level
0	*I have not experienced any change in activity level.*
1a	*I am somewhat more active than usual.*
1b	*I am somewhat less active than usual.*
2a	*I am a lot more active than usual.*
2b	*I am a lot less active than usual.*
3a	*I am not active most of the day.*
3b	*I am active all of the day.*

- The MSPSS presents statements related to feelings about support from others.

MSPSS Sample Statements:

Indicate how you feel about each statement from "1"(very strongly disagree) to "7"(very strongly agree).

1. *There is a special person who is around when I am in need.* (1-2-3-4-5-6-7)
2. *I can talk about my problems with my family.* (1-2-3-4-5-6-7)

Voluntary Nature of the Study
This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at the agency providing BHRS Provider 50 services, support group, or any affiliated agency will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks & Benefits
Being in this type of study involves some risk of minor discomforts that can be encountered in daily life, such as becoming upset. Being in this study will not pose risk to your safety or wellbeing. Your participation will provide needed information in the mental health field related to depression and mothers with children with mental health issues. Additionally, the results of this study will potentially raise awareness to the needs of caregivers in BHRS Provider 50 programs and the importance of providing support to caregivers to promote positive treatment outcomes.

Payment & Privacy
Upon returning the completed surveys (1) certificate for Buy 1 Item, Get 1 FREE for your local Rita's Ice Cream Shop will be mailed to the address that you provide. Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Data and mailing addresses will be stored on a password protected computer and paper copies of questionnaires will be destroyed after coding procedures and entry to the electronic database. Data will be kept for a period of at least 5 years, as required by the university.

Contacts & Questions
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via tammy.gregorowicz@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Walden University representative who can discuss this with you. Walden University's

approval number for this study is **04-28-15-0111451** and it expires on **April 27, 2016**.

Statement of Consent
I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By <u>returning the completed surveys</u>, I understand that I am agreeing to the terms described above.

Additional Resources
The following agencies provide free or low cost mental health services that can be accessed for further assistance with any mental health concerns.

<u>Scranton Counseling Center</u>
326 Adams Avenue
Scranton, PA 18503
(570) 348-6100
www.scrantonscc.org

<u>Community Counseling Services</u>
110 South Pennsylvania Avenue
Wilkes-Barre, PA 18701
(570) 552-6000
24/7 Crisis Services

<u>Community Counseling Services</u>
99 Bridge Street
Tunkhannock, PA 18657
(570) 836-3118

<u>Please keep this consent form for your records.</u>

Appendix E: Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**
Circle the "2" if you **Strongly Disagree**
Circle the "3" if you **Mildly Disagree**
Circle the "4" if you are **Neutral**
Circle the "5" if you **Mildly Agree**
Circle the "6" if you **Strongly Agree**
Circle the "7" if you **Very Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
1. There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2. There is a special person with whom I can share joys and sorrows.	1	2	3	4	5	6	7
3. My family really tries to help me.	1	2	3	4	5	6	7
4. I get the emotional help & support I need from my family.	1	2	3	4	5	6	7
5. I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6. My friends really try to help me.	1	2	3	4	5	6	7
7. I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8. I can talk about my problems with my family.	1	2	3	4	5	6	7
9. I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10. There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11. My family is willing to help me make decisions.	1	2	3	4	5	6	7
12. I can talk about my problems with my friends.	1	2	3	4	5	6	7

Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment* 1988; 52: 30-41.

Appendix F: Permission to Use Beck Depression Inventory- Second Edition

Dear Ms Gregorowicz,

Permission to use a Pearson assessment is inherent in the qualified purchase of the test materials in sufficient quantity to meet your research goals. In any event, Pearson has no objection to you using the Beck Depression Inventory-II (BDI-II) and you may take this email response as formal permission from Pearson to use the test in its as-published formats in your student research when qualified to purchase.

The BDI-II is a sensitive clinical assessment that requires a high degree (B Level) to purchase, administer, score and interpret. It also represents Pearson copyright and trade secret material. As such, Pearson does not permit photocopying or other reproduction of our test materials by any means and for any purpose when they are readily available in our catalog. Consequently, you may not simply reproduce the BDI-II test forms.

Long term license agreements with our Test Authors prohibit Pearson from providing or licensing our test materials at no charge/gratis for any purpose.

To qualify for and purchase a BDI-II Kit or other test materials, please visit the following link to the product page in our online catalog:
http://www.pearsonclinical.com/psychology/products/100000159/beck-depression-inventoryii-bdi-ii.html

If you do not yet meet the qualifications to purchase the test materials, your professor or faculty supervisor may be able to assist you by lending their qualifications.

Finally, because of test security concerns, permission is not granted for appending tests to theses, dissertations, or research reports of any kind. You may not include any actual assessment test items, discussion of any actual test items or inclusion of the actual assessment product in the body or appendix of your dissertation, thesis, or other research results. You are only permitted to describe the test, its function and how it is administered and discuss the fact that you used the Test, your analysis, summary statistics, and the results.

That said, we have prepared a couple of sample test items that you may include in your research results and I have attached them herein for your possible use.

Regards,

Senior Legal Licensing Specialist