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# Preference for Internet Therapy versus Traditional Therapy to Treat Postpartum Depression

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# Walden University

College of Social and Behavioral Sciences

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Megan Ford

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Walden University  
2017

Abstract

Preference for Internet Therapy versus Traditional Therapy to Treat Postpartum

Depression

by

Megan Elizabeth Ford

MS, Walden University, 2014

MS, University of Maryland University College, 2010

BS, Kaplan University, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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## Abstract

A growing body of research has emerged about effective treatments for postpartum depression, specifically how the internet could become a pivotal and vital option for women with postpartum symptoms. With that in mind, the purpose of this quantitative study was to investigate whether women suffering from postpartum depression preferred traditional therapy treatment or internet therapy treatment. The nonexperimental survey design was used to assess differences between groups related to stigma, satisfaction with treatment, and perceived quality of treatment received. Data collected from a sample of 78 adult females, who had previously received postpartum depression therapy treatment, indicated there was no difference experienced between the treatment modalities. Results were calculated using an independent sample *t*-test, noninferiority design, and it was determined that participants perceived no difference in their experience of stigma, treatment satisfaction, and perception of credibility and quality between the two therapy modalities. This study adds to the growing body of literature that suggests internet therapy may be a viable option for some women. The results encourage positive social change in that psychologists may advance clinical practice through incorporating technology into their treatment plans, thereby benefiting women who suffer from this condition and who may not be able to readily access a therapist's office on a weekly basis.

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## Dedication

To my mother, the living embodiment of Seuss-ian ideas who encouraged me to travel my own path and pursue my dreams further than the eye can see.

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## Chapter 1: Introduction

The purpose of this study was to assess for group differences among a population of women who received internet-based therapy and those who received traditional therapy. The study attempted to identify if there was a relationship between using internet therapy and the reduction of stigma associated with seeking postpartum depression treatment. The study further seeks to identify if there was a difference in therapeutic satisfaction and perceived quality of the treatment received. In other words, were women more likely to choose internet therapy because of the anonymity instead of choosing a traditional therapy service?

The goal of this study was to illuminate the importance of providing immediate effective treatment to women suffering postpartum depression. The internet can bridge the gap that otherwise separates women from access to mental health services. Oftentimes, their options are restricted by geography, finances, time, or limited support. The internet allows mothers to access treatment when they need it any time of the day or night.

The social change implications of this study are broad as it was intended to increase awareness of the need for increased access to the proper care for mothers during and after pregnancy. Recent legislation has been introduced at the federal level by Representative Clark (D-MA-5) and Senator Heller (R-NV) to help bring postpartum depression “out of the shadows” (Federal Action Network, 2016). These lawmakers are attempting to ease access to tele-mental health services, specifically for postpartum depressed mothers. If passed, the proposed bill may help increase access to care such as

establishing websites to connect mothers to local resources (S. 2311/H.R. 3235, 2016).

The results of this study may serve to increase awareness of treatment needs and preferred access to care, as well as to guide social change to improve overall care and access to mental health services.

In this chapter, I will explain the background of the study and highlight the gaps in knowledge, developments in treatment, and new research regarding the topic under study. Following this discussion is the problem statement, in which I emphasize the research problem. The problem statement addresses the perceived gaps relating to the study. The purpose of the study will then be reviewed, followed by a description of the research questions.

I also identify and define the theoretical framework for the study and clarify how it relates to the approach and development of the research questions. An exploration of the nature of the study will follow, with special emphasis on key concepts, definitions, and terms that are used throughout. I then describe the scope and delimitations to explain the specific aspects of the research problem as well as the boundaries of the study, after which the limitations related to the design of the study and the methodological weaknesses are explored. The chapter concludes with a discussion of the significance of the study as it relates to the advancement of knowledge of postpartum depression and its treatment.

## **Background**

Postpartum depression is considered a major public health issue and has been described as an alarming silent epidemic (Danaher et al., 2012; Leah-Warren, McCarthy,

& Corcoran, 2011). Yet, the origin or manifestation of postpartum depression is unknown to the general female population. What is known is that postpartum depression is a serious condition affecting 13% of women (Danaher et al., 2012; Stewart et al., 2003). Furthermore, Stewart et al. (2003) found that postpartum depression is the “most severe uncommon form of postnatal affective illness” (p. 17). The effect of untreated postpartum depression can be devastating and could lead to physical and emotional harm, homicide, or suicide.

According to Wisner et al. (2013), approximately 22% of the women the researchers followed for 1 year displayed postpartum symptoms “during the first year” (p. 490) after giving birth. Wisner, Parry, and Piontek (2002) stated that nearly a half-million women in the United States suffer from postpartum depression annually. The Centers for Disease Control and Prevention (CDC; 2013) found in a longitudinal study spanning 2005-2009 that 1 in 10 women experienced at least one major depressive episode. Complicating matters even further is the fact that depression often goes undiagnosed or untreated in women (CDC, 2013). It is for these reasons that researchers have emphasized the need for preventative psychotherapeutic treatment options for women suffering postpartum depression in an effort to reduce the severity of symptomology (Stuart, O’Hara, & Gorman, 2003). Treatment delivery via the internet could provide women with several immediate options to treat postpartum symptoms.

According to Wylie, Martin, Marland, Martin, and Rankin (2011), the experience of postpartum depressive symptoms is not an uncommon experience for women after they have given birth. Typically, women will see their physician after giving birth, but

rarely is their mental health assessed or considered during these health check-up visits (Chein, Tai, Hwang, & Huang, 2009). It is possible to identify women who are at a higher risk for postpartum depression, but while several screening tools exist, Stewart et al. (2003) determined that few are applicable and have “low positive predictive values” (p. 4). Although physicians are becoming more informed regarding postpartum depression, research indicates greater need for improvement in the areas of prescreening, diagnosis, and general knowledge of treatment options (Noar & Zimmerman, 2007; Wasil, 2004). According to Almond (2009), women should have their mental and emotional health assessed after pregnancy. This would help in determining the risk for postpartum depression. Early detection appears to be necessary for preventing costlier treatment later on, but too many pediatric providers do not screen for postpartum depression symptoms (Gjerdingen & Yarn, 2007).

Untreated postpartum depression can have potentially devastating effects on the mother and her children. One need only look to news reports of how devastating postpartum depression can be. Consider the high profile case of Andrea Yates. On June 20, 2001, Yates drowned each of her five children whose ages ranged from 6 months to 7 years. The Yates case may be the most remembered, but it is not the only instance of postpartum depression-induced harm to either mothers or to their children. Recent cases include a Miramar woman who hurled her 3-month-old into a lake, a California mother who faced murder charges for allegedly stabbing her three children, and a woman who pled guilty to killing her toddler and was sentenced to 10 years in prison (Dupuy & Teproff, 2014). Although postpartum psychosis is less likely than postpartum depression,

postpartum depression can lead to postpartum psychosis if left untreated and compounded by lack of support and limited access to effective treatment (Friedman & Resnicl, 2007; Monzon, Lanza di Scalea, & Pearlstein, 2014).

Although postpartum psychosis is an extreme diagnosis often associated with warning signs, postpartum baby blues and postpartum depression are less conspicuous. Postpartum baby blues are considered the most “common mood disturbance in new mothers” (Thurgood, Avery, & Williamson, 2009, p. 17) impacting roughly 50 to 80% of mothers. Postpartum depression is even less likely to be assessed by physicians, meaning that these women will likely suffer from a fully treatable condition that they do not understand (Thurgood, Avery, & Williamson, 2009). It is important to offer women variable treatment options, such as through technology, due to the variable symptomology of postpartum depression.

As the number of individuals diagnosed with postpartum depression continues to increase, finding alternative and effective treatment methods is of vital importance to the mother, her child, and her family (Blenning & Paladine, 2005). Researchers continue to emphasize the importance of preventative psychotherapeutic interventions for women who may suffer from postpartum psychological conditions (Halonen & Passman, 1985; Stuart, O’Hara, & Gorman, 2003). Preventative treatment could reduce the incidence of more extreme cases of baby blues, postpartum depression, and postpartum psychosis. Making treatment both convenient and effective can significantly influence the reduction of symptoms of postpartum depression (Hilty, 2003). Teufel et al. (2011) found that 60% of patients surveyed had a preference for home accessible treatment through the internet,

thereby suggesting that using the internet for therapy treatment could have a significant impact on those suffering psychosis symptoms (O'Mahen et al., 2012). The research is fairly clear. The key factors in preventing and reducing postpartum depressive symptoms begins with pre- and postscreening assessment, continued evaluation of mental and emotional health, and access to convenient treatment modalities.

### **Using Technology to Treat Mental Illness**

Tele-medicine, a radical concept when it was first mentioned in 1974, involves giving a diagnosis by television or even telephone (Zundel, 1996). Tele-medicine has been defined as the use of technology to provide two-way communication between doctor and patient, typically via a videoconference service (Zundel, 1996). Research has shown evidence for the effectiveness of tele-medicine technology, such as videoconferencing to identify or treat a wide range of medical problems from depression to flu symptoms (Dobscha, Corson, Solodky, & Gerrity, 2005; Hilty, Liu, Marks, & Callahan, 2003; Rabinowitz et al., 2010). Technology has given rise to new developments in how health-related services and information are provided. Tele-mental health allows practitioners to provide coaching calls, therapy services, and psychoeducation to both rural and non-rural populations (Dobscha et al., 2005). The internet has opened new doors in how practitioners can provide services, from managing psychoeducation related blogs or publishing e-books to actually conducting therapy through the use of video chat. The most recent developments are smartphone applications such as Doctor on Demand, which provides users with an immediate face-to-face consultation with a medical doctor, general practitioner, psychologist, and psychiatrist for a fee. The application's website claims that

Doctor on Demand provides a personal service that “patients are as satisfied and have equal results with video visits as in-person treatment” (2016, Sec. Mental Health Care).

Research suggests that internet-based treatment programs can reach a larger number of women and provide services that are comparable to in-person visits. Furthermore, researchers have demonstrated that these programs are equally effective, that they support patient retention to treatment, and that patients are satisfied with their tele-medicine care (Dobscha et al., 2005; Hilty et al., 2003; & Teufel et al., 2011). These programs are also a good way to monitor treatment and symptom progression and offer an anonymous environment for the woman to seek treatment at her own pace (Danaher et al., 2012). Anonymity has proven an important factor for some women suffering postpartum depression, as they may be concerned about social stigma or possible loss of custody (Patel & Wisner, 2011).

The internet allows patients to research first before seeking help, to gather information, and when ready to seek treatment, to search for providers in the area. In fact, Fox and Fallows (2005) found that of the “80% of adult internet users who searched for health information, 23% searched for information on stress, depression, and other mental health conditions” (p. 1-2). Fox and Fallows also found that women were the primary population to seek health-related information by using the internet; furthermore, of those respondents who used the internet for health related searches, 73% stated the “internet has improved the health and medical information and services they receive” (p. 24).

In Logsdon et al.’s (2013) study testing a treatment website designed to appeal to adolescent mothers with postpartum depression, the researchers saw a significant

improvement in depression symptoms after their respondents viewed the website being tested. Likewise, Danaher et al. (2013) found “largely positive reactions” to internet-based treatment options, and Maloni, Przeworski, and Damato (2013) found that over “90% of women would use the internet to learn coping strategies for postpartum depression” (p. 90).

In their phase II study, O’Mahen et al. (2013) found internet treatment options “improved functioning, and reduced anxiety” as compared to women in a more typical treat-as-usual control group (p. 1686). The researchers recruited 249 women for their phase II study, where 83 were identified as meeting DSM-IV criteria for a major depressive disorder (O’Mahen et al., 2013). These women were randomly placed into either the NetmumsHWD or a treatment-as-usual control group, who had access to general information regarding depression but who were not offered a specific therapy. O’Mahen et al. (2013) discovered a “large effect size favoring” (p. 1675) the internet based NetmumsHWD treatment trial in which a reduction of depressive symptoms, social impairment, and anxiety was noted.

Danaher et al. (2013) found that web-based treatment programs can reach a larger population of women, be accessed anywhere at any time, and allow practitioners to monitor treatment outcome, and that “guided human support” (p. 3) increased adherence and treatment compliance. Web-based treatment programs can also be tailored to meet specific treatment needs (Danaher et al., 2013; O’Mahen et al., 2013). Danaher et al. (2013) created two web-based treatment sites: MomMoodBooster (U.S. site) and MumMoodBooster (Australian site) to provide guided and interactive supported

treatment for mothers suffering postpartum depression. Drawing on data from 17 focus group participants, they surveyed users for feedback, likes/dislikes, usability, and opinions about the websites. The researchers received resounding positive feedback as well as the following comments: “It’s nice to know you’re not alone in the universe; this is wonderful; and made me feel confident” (Danaher et al., 2013, p. 6). While this was a usability undertaking, the feedback proved instrumental in their revision of MomMoodBooster as they undertook an additional trial of treating 50 depressed postpartum mothers with the interactive site.

As websites and smartphone applications become more quality-based, the internet has the capacity to become a viable therapy treatment option. By providing ease of access to readily connect and supports mother, the internet may in fact be a useful tool for reducing postpartum symptomology. This is only feasible if practitioners and physicians inform mothers of these accessible tools and support a preventative model of treating postpartum depression.

### **Problem Statement**

Postpartum depression is a serious concern among pregnant mothers. To complicate matters, few physicians screen for postpartum depression and even fewer mothers report symptoms. The stigma associated with postpartum depression is significant to the extent that it influences help-seeking behavior (Logsdon, Wisner, & Pinto-Foltz, 2006; Pinto-Foltz & Logsdon, 2008). While research continues to increase our knowledge and awareness of how tele-medicine and the internet can improve access to treatment, there is nevertheless a literature gap regarding treatment preference. It has

been suggested the internet is a preferred treatment modality, but little is known about why women would seek out internet treatment versus traditional therapy, whether they were satisfied with their choice, and how influential stigma may have been in their treatment selection. The goal of this study was to better understand the treatment preference of women who have previously suffered from postpartum depression, whether stigma affected their help-seeking behavior, if they found the treatment credible, and if they were satisfied with their treatment choice.

### **Purpose of the Study**

The purpose of this quantitative study was to compare and contrast the use of internet based therapy to the use of traditional therapy for the treatment of postpartum depression. To determine this, I assessed women who have received both internet based therapy and traditional face to face therapy for the treatment of postpartum depression. As will be discussed further in Chapter 2, internet based therapy has the potential to be a positive force in providing immediate and necessary treatment to the “silent-suffering” of women with postpartum depression (Tatano-Beck & Driscoll, 2006).

For this nonexperimental study, I surveyed women treated through the online modality and women treated with traditional-based therapy (i.e., face-to-face), assessing for feelings of stigma, satisfaction with the treatment modality, and credibility of the treatment modality. The working hypothesis of the study was that women who have received internet based therapy were equally satisfied with the treatment and reported fewer feelings of stigma. Other research studies suggest internet based therapy may reduce feelings of stigma, shame, and the social breakdown often felt by women

experiencing postpartum depression symptoms (Shahar, 2001). In this study I reviewed the relative strengths and weaknesses of internet based therapy as a treatment method for women suffering from postpartum depression.

### **Research Questions and Hypotheses**

This quantitative assessment was guided by the following research questions and hypotheses:

RQ 1: Do women who seek internet therapy exhibit levels of self-stigma that are less than or equal to the self-stigma experienced by women who seek traditional forms of therapy, as measured by the Self-Stigma of Seeking Help Scale (SSOSH)?

H<sub>0</sub>1: There is no difference in the experience of self-stigma.

H<sub>1</sub>1: Women who seek internet therapy do exhibit lower levels of stigma than women who seek traditional forms of therapy.

RQ 2: Do women find internet therapy to be at least as credible to traditional therapy, as measured by the Credibility Expectancy Questionnaire (CEQ)?

H<sub>0</sub>2: There is no difference in credibility between methods of therapy.

H<sub>1</sub>2: Women find internet therapy to be more credible when compared to traditional therapy.

RQ 3: Are women with postpartum depression at least as likely to be satisfied with internet therapy as a treatment option over traditional therapy, as measured by the Satisfaction with Therapy and Therapist Scale (STTS-R)?

H<sub>0</sub>3: There is no difference in level of satisfaction between women who use internet therapy and those who use traditional therapy.

H<sub>13</sub>: Women who use internet therapy exhibit higher levels of satisfaction, as compared to those who use traditional therapy.

### **Theoretical Framework: Biopsychosocial Model**

The theoretical framework for this study was Engel's (2012) biopsychosocial model. The model is a humanistic and holistic approach to understanding illness at an individual level accounting for the varying factors that may influence said illness—that is, the biological, psychological, and social influencers (Alvarez, Pagani, & Meucci, 2011). This was first posited by cardiologist George Engel, but the theory has supportive roots in Greek philosophy and behavioral psychology (Borrell-Carrio, Suchman, & Epstein, 2004). For the purpose of this paper, the biopsychosocial model was applied to understand how postpartum symptomology is influenced by the biology of pregnancy, the psychology of maternity, and the social influencers affecting maternal development. Postpartum depression is not limited to just a biological condition, and its treatment is heavily influenced by psychological and social factors this model can help explore.

### **Nature of the Study**

The nature of this study was a quantitative, non-experimental, survey design that collected post-treatment data from (a) women who received internet based therapy and (b) women who received traditional therapy. I used this survey data to assess for differences in a mother's experience of stigma feelings, perception of credibility of treatment, and level of satisfaction between the two treatment modalities. The objective of this study was to discover whether such differences exist and whether they influence a mother's help-seeking behavior in selecting a treatment modality. This was accomplished

through a measure of difference in the mean scores of the Self-Stigma of Seeking Help Scale (SSOSHS; Vogel, Wade, & Haake, 2006), the Credibility Expectancy Questionnaire (CEQ; Devilly & Borkovec, 2000), and the Satisfaction with Therapy and Therapist Scale (STTS-R; Oei & Green, 2008) for internet based and traditional therapy. The independent variables for this study were the treatment delivery method (internet based and traditional treatment), and the dependent variables measured by the above scales were client satisfaction, feelings of stigma, and treatment credibility. I gathered data from 168 female adults, all 18 years of age and older after directing participants to complete an online survey. The research study enabled me to determine the preference of therapy modality, either internet or traditional, among women with postpartum depression symptoms and to assess for feelings of stigma towards either treatment modality.

### **Operational Definitions**

*Internet therapy or online therapy:* Any form of professional therapeutic interaction utilizing the “internet to connect qualified licensed mental health professionals and their clients” (Rochlen, Zack, & Speyer, 2004, p. 270).

*Traditional therapy:* Any form of professional therapeutic interaction occurring in a face to face setting such as within the office of a licensed mental health professional.

*Baby blues:* The least severe and most common experience of relatively mild mood swings occurring after pregnancy (Ey, 2007). Symptoms include: insomnia, anxiety, sadness, and some confusion (Jones & Venis, 2001).

*Postpartum anxiety:* Postpartum anxiety is considered the most common form of postpartum depression, also known as baby blues, and is often not emphasized or considered concerning by physicians (Adewuya & Afolabi, 2005). Postpartum anxiety consists of sleep deprivation, coping with increased demands, feeling overwhelmed, fear, indecision, and excessive worry (Breitkopf et al., 2006; Wenzel et al., 2003).

*Postpartum depression:* Postpartum depression is defined as a mood disorder, more severe than baby blues, with symptoms consisting of mood swings, tearfulness, and intense feelings of sadness lasting 10-21 days after childbirth (Tu, Lupien, & Walker, 2005).

*Postpartum psychosis:* Defined as a severe form of depression occurring after childbirth affecting 1 to 2 women per 1,000 who give birth (Tawadrous, 2014). Symptoms consist of delusions, hallucinations, paranoia, and in some cases suicidality (Lewis, Byers, Malard, & Dawson, 2010).

*Self-Stigma:* For the purpose of this study, self-stigma will be defined within the context of the following definitions as: the “internalized psychological impact of possessing a stigmatizing characteristic” (Bathje & Pryor, 2011, p. 163) and “the reduction of an individual’s self-esteem or self-worth caused by the individual self-labeling him/herself as someone who is socially unacceptable” (Vogel, Wade, & Haake, 2006, p.325).

### **Assumptions**

The primary assumption to this study was that the chosen instruments accurately measured the population’s preference for treatment delivery. I assumed the data gathered

from these instruments produced valid outcomes, assessed satisfaction, and determined influence of feelings of stigma. Each instrument was carefully selected, researched, and had been previously peer-reviewed for validity and reliability. Furthermore, the instruments had been utilized in prior research studies assessing similar populations with accurate outcomes (Oei & Shuttlewood, 1999; Vogel, Wade, & Hackler, 2007).

Another assumption I considered was that there are no standard internet treatment delivery options to specifically treat postpartum depression. The majority of studies on the effectiveness of internet therapy treatments had been conducted in Europe and Australia with highly successful results (Danaher et al., 2012; O'Mahen et al., 2013). My study was meant to add to the growing body of research examining the possibility of utilizing the internet as a viable treatment modality for women with depression and postpartum depression. With this in mind, it was difficult to generalize the findings of this research to all internet-therapy programs, as there was no standard program. It was also difficult to generalize all new mothers, as all new mothers are not the same and may experience the postpartum period in differing ways. Furthermore, just as there is no one specific internet therapy treatment program, there is no one specific type of traditional therapy modality for postpartum depression. Therefore, findings from this study may not be transferrable to other internet therapy postpartum depression interventions.

### **Limitations**

A limitation in this study pertains to the sample population, as women suffering postpartum depression may be reluctant to disclose their opinion regarding treatment. Additionally, I relied on retrospective recall memory from my participants. I surveyed

women at varying stages of treatment, meaning that their last session could have been as early as a week ago or as long as 3 years ago. Depending on the timeframe, the reliability of their memory recall may not have been 100% accurate, which is why the questions posed relied more on their general feelings about the treatment rather than having them recall specific sessions.

It is also important to realize that women suffering postpartum depression may have experienced a variety of complications ranging from medical conditions, birth complications, socioeconomic barriers, and accessibility to medical and mental health treatment. Therefore, as mentioned above, the study results will be difficult to generalize to the overall populace. Another limitation pertains to affordability of treatment, as most insurance coverage plans do not cover or reimburse mental health treatment delivered over the internet. The study is further limited by the biological aspects of postpartum depression. Hormones, medical conditions, and other physiological disorders can influence the severity of postpartum depression symptoms. This study did not have access to participants' medical histories, genetic histories, or any other diagnostic tools utilized to diagnose postpartum depression.

### **Delimitations**

The delimitation affecting this study was the population demographic. The results may not be generalized or transferrable to other socioeconomic and ethnic groups. Research suggests cultural background plays a role in the severity and disclosure of symptomology (Bina, 2008; Shellman, Beckstrand, Callister, Luthy, & Freeborn, 2013). In fact, researchers have found that women of differing cultural backgrounds are less

likely to engage in follow-up treatment after birth and that they present with significantly higher rates of postpartum depression that include suicidality than their Caucasian counterparts (Shellman et al., 2013; Kozhimannil, Trinacty, Busch, Huskamp, & Adams, 2011). In this study, I focused on childbearing women of all races aged 20 years to under 40 years. This study was limited to this age range because these are considered key childbearing years for women (Martinez, Daniels, & Chandra, 2012). Another delimitation of this study is that no diagnostic tests for postpartum depression were utilized as all participants were previously diagnosed.

I limited the scope of this study to survey data from women who had given birth within 5 years. Data was obtained through the use of a demographic survey and three self-report measures (SSOSH, CEQ, and STTS-R) completed by the participants who met the required criteria.

### **Significance of the Study**

The question yet to be answered is: why? Why are so many women undiagnosed, undertreated, and reserved about admitting they may be experiencing postpartum depression? Katherine Stone, a postpartum depression survivor now turned award-winning advocate, suggests much of it results in outside attacks by partners, family members, and even complete strangers (Tartakovsky, 2012). Leahy-Warren et al. (2011) add that guilt, shame, and lack of support are also strong reasons. Stigma is a repeated and strong factor preventing both the admittance of symptoms and treatment seeking behavior (Schillaci, 2009). Accessibility to care is another strong factor, as Villegas, McKay, Dennis, and Ross (2011) found a high “prevalence of postpartum depression

among rural women” (p. 278). This is not to suggest that a rural locale is a factor for increased postpartum depression, but rather that rural locations make it difficult to seek and receive treatment. This is where online and tele-health therapy could be used to intervene by providing women access to quality treatment that is accessible on their terms.

Recent studies in the area of web-based postpartum depression treatments found that women reacted positively and immediately to the treatment option (Danaher et al., 2012). In a study conducted in the United Kingdom, O’Mahen et al (2013) saw improvement in depression symptomology, reduction in anxiety, and improved functioning among women who received treatment using the internet based therapy site Netmums.com. Furthermore, web-based treatment would allow women to seek treatment on their own terms and in a relatively anonymous fashion, thereby reducing potential feelings of stigma (Danaher et al., 2012). This is significant given that stigma is consistently cited as a reason that a mother would rather maintain appearances than admit to what may be perceived as a fault and seek treatment.

Fortunately, there are a number of internet based options for women to turn to such as online support groups, blogs, chat rooms, and informational sites. Many psychologists are also beginning to offer web based therapy using programs such as Skype which allows therapist and patient to communicate with one another. The internet provides convenience to both provider and client as a medium to provide supportive therapeutic treatment.

The significance of this paper is that it adds to the growing body of research about internet therapy as a potential modality for the treatment of postpartum depression by assessing for the feelings and expectations of clients who have participated in internet treatment. By providing further understanding of women's satisfaction, therapy credibility, and feelings of stigma, the findings of this research can potentially reflect the need for alternative treatment modalities. Given that postpartum depression is the most undertreated condition affecting women (CDC, 2013), it is vital that services be presented to them that are easily accessible. By informing primary care providers of alternatives, these findings can help them present women with outlets they can access on their own time within the comfort of their home and without the stigma associated with admitting postpartum depression symptoms (Danaher, 2012; Shahar, 2001). Furthermore, given the nature of childcare, it is difficult for a mother to break away from the family to care for themselves. By providing an option that is available in the home at any given time of the day, internet based treatment could break through many physical and social barriers.

### **Summary**

Providing immediate and early access to postpartum treatment care is a key component to addressing symptomology experienced by childbearing women. Regardless of the severity of the postpartum experienced, women should be aware of supportive avenues where they may seek help, guidance, and comfort during this emotionally vulnerable time period. Accessing quality help through the internet allows women to seek assistance on their terms and without public stigma by connecting with hundreds or even thousands of other mothers who have likely experienced the same issues.

This study was meant to help determine whether internet based therapy was more effective than traditional therapy in reducing perceived self-stigma, if it was a credible treatment modality, and whether internet therapy was a satisfactory treatment program. As will be discussed in Chapter 2, researchers have intimated that internet therapy and support group programs are as effective as traditional therapy programs, if not more so. (Cuijpers, Donker, Van Straten, Li, & Andersson, 2010; Danaher et al., 2012). Presently, there are many new studies examining the treatment effect and actual prospects of internet therapy programs; however, few are focusing on postpartum depression treatment.

Chapter 2 will provide a review of the literature relevant to this study. In the chapter, I will also discuss the biological, psychological, and social variables that influence the symptoms of postpartum depression. Additionally, I will review current empirical studies on delivering therapy via the internet for treating postpartum depression. Chapter 3 will detail the study design and method.

## Chapter 2: Literature Review

### **Introduction**

Postpartum depression seriously affects a number of women psychologically and physically within 12 weeks of giving birth and as long as 6 months beyond (Hanusa, Scholle, Hasket, Spadaro, & Wisner, 2008). This chapter begins with a review of the literature on this silent epidemic. In addition, I will provide an analysis of the biopsychosocial model and how it supports and is applicable to the better understanding of postpartum depression. Postpartum depression will then be conceptualized and understood through this biopsychosocial framework. Finally, I evaluate the current research utilizing internet therapy modality as a successful treatment option targeting women suffering from postpartum depression.

### **Literature Search Strategy**

I conducted this literature review by evaluating research from past and current primary and secondary sources pertaining to postpartum depression with a focus on treatment practices and treatment effectiveness. A review of the primary literature was conducted using the EBSCO Research Databases of PyschArticles, PsychINFO, Academic Search Premier, Google Scholar, and the Mental Measurements Yearbook. Peer-reviewed journals were selected using the following keywords: *postpartum*, *postpartum depression*, *postpartum depression treatment*, *postpartum depression and internet therapy*, *web based therapy for depression*, *stigma of postpartum depression*, *tele-medicine and depression*, and *mental health stigma*.

### **Review of the Literature on Postpartum Depression**

The literature suggested postpartum depression is a silent epidemic, “often unrecognized and undertreated” (Patel et al. 2012, p. 534), affecting millions of women post-pregnancy (O’Hara & McCabe, 2013; Savitz, Stein, Ye, Kellerman, & Silverman, 2011). The CDC indicated 1 in 10 pregnant women experience a depressive episode and that 66% of a U.S. sample of pregnant women went undiagnosed (CDC, 2013).

According to Pearlstein, Howard, Salisbury, and Zlotnick (2009), approximately 15% to 85% of women reported postpartum blues symptoms “within the first 10 days of giving birth” (p. 357). Women further experienced a lifetime risk of postpartum depression of 10% to 25% with the strongest risk factor being a previous history of postpartum or other major depressive symptoms before pregnancy (Patel et al., 2012). Miller and LaRusso (2011) found that approximately 40% of women who experienced a “postpartum depressive episode may experience a recurrent episode” (p. 53). This makes the severity and length of postpartum depression unique to the woman experiencing the symptoms. In fact, there was little to no consensus among researchers as to the onset and timeframe of postpartum depressive symptoms (O’Hara & McCabe, 2013).

What makes postpartum depression difficult to treat is that its etiology remains a mystery to medical professionals. Several variable factors play a role in the severity of post-pregnancy depression, such as a history of mental illness, medical condition, hormonal changes, general physical health, difficulty of pregnancy or birth complications, cultural roles, and lack of social and familial support (O’Hara & McCabe, 2013; Patel et al., 2012; Stewart et al. 2003; Wisner, Parry, & Piontek, 2002). This list is

not exhaustive, but it is representative of the researched factors potentially known for causing or exacerbating postpartum depressive symptomology.

Considering the long history of postpartum depression, it is a small wonder its etiology remains shrouded in mystery. In the fourth century B.C., Hippocrates was the first to reference the mental illness now known as postpartum depression. He proposed that fluid from the uterus—lochia discharge—could flow to the head of women and result in delirium and mania (Brockington, 2005; Torrey & Miller, 2001, p 7). This idea was further perpetuated by physicians throughout the ages, namely Edward Jorden who defended this notion in his 1603 book, *A Brief Discourse of a Disease Called the Suffocation of the Mother*. Jorden argued that female hysteria and other ailments were undeniably linked to the uterus, stating that

Irregularities of the womb bred vapours which wafted through the body inducing physical disorders in the extremities, the abdomen, and even the brain, thereby producing paroxysms, convulsive dancing, etc., so often misattributed to possession... (Porter, 2002, p. 27)

Although Jorden perpetuated the myth of the vaporous uterus and mania, he was also attempting to save women from being denounced as witches and possessed in a time where mental illness was considered the devil's work (Armstrong, 2012; Porter, 2006; Watson, 1953).

Beyond vapors and devil's curses, practitioners continued to research postpartum depression and how it could affect a woman's mental stability, from expressing tears to murderous intent. In his research, Brockington (2005) found that newborn murder had

become an epidemic between the 17<sup>th</sup> and 19<sup>th</sup> centuries, thereby creating a new branch of medicine known as forensics. As research into newborn deaths grew, it became apparent that children were dying not just at the hands of mothers who had rejected them, but also of parental rage, child abuse, neglect, and maltreatment (Brockington, 2005). The maternal disorder now recognized as postpartum depression was first designated as “misopedie or hatred of children” (Brockington, 2005, p. 2) by Boileau de Castelnau in 1861. Approximately 100 years later, researchers would begin calling it “postnatal depression” (Brockington, 2005, p. 2). However, some researchers still feel it should be considered maternal newborn hatred as high proportions of maternal infanticide occur among mothers suffering extreme postpartum depression (Brockington, 2005; Spinelli, 2004). In addition, Miller and LaRusso (2011) found that mothers suffering from postpartum depression are not only at a higher risk for suicide, but they are also less likely to “breastfeed, bring their babies to pediatric visits, and implement infant safety practices” (p. 53). These are all behaviors that place mother and infant at risk if the mother is left untreated and undiagnosed.

Societal expectations and cultural views of women have played a role in the mental health treatment of women. Stigma continues to be a presenting factor as to why many women remain silent about their symptoms or refuse to seek treatment. Furthermore, if a woman does seek treatment, she is likely to downplay her symptoms, which then leads to an increased chance of being misdiagnosed and left untreated (CDC, 2013).

### **A Biopsychosocial Approach to Postpartum Depression**

The biopsychosocial model was pioneered by George Engel, who believed that patients are best understood through a multifocal approach comprising “biological, psychological, and social dimensions of illness” (Borrell-Carrio, Suchman, & Epstein, 2004, p. 576). The model emphasized a return to a person-centered approach to therapy by arguing against the dehumanization of patients and focusing on the ideas of empathy and compassion (Borrell-Carrio et al., 2004). It could be suggested that Engel was making the statement that compassion and science are not mutually exclusive (Borrell-Carrio et al., 2004; Pilgrim, 2002).

The biopsychosocial model is both a philosophical and clinical guide for mental health care. The model perceives mental health illness through a multifocal lens extending across medical, emotional, and social aspects that all have some effect on postpartum symptomology. The biopsychosocial model is therefore an appropriate theoretical lens through which to perceive postpartum depression. Postpartum depression is influenced by several varying factors that this model can help identify to guide researchers and practitioners towards a successful outcome of treatment. Misri et al. (2012) conducted a small quantitative study to assess whether the biopsychosocial model could predict postpartum depression treatment outcomes. The researchers found that many postpartum depression predictors could be identified using the model, along with several other varying factors, which reinforces the idea that postpartum depression cannot be explained along a singular line.

Postpartum depression should be perceived as a layered illness. As each layer is understood, both practitioner and client can begin to better understand what the client is experiencing. The biopsychosocial model allows for such a layered approach by first examining the physical health of the mother, her medical history (including prior mental illness), current mental status, and finally her social support—or lack thereof. Postpartum depression is the sum of its layered parts, not just the singular act of giving birth.

For this study, I used the biopsychosocial model as the framework for conceptualizing and understanding postpartum depression symptomology. In the following sections, postpartum depression will be described from the biological, psychological, and social factors influencing symptom severity.

### **Postpartum Affective Disorders**

Postpartum depression has been defined and diagnosed as the following disorders: postpartum anxiety or baby blues, postpartum psychosis, perinatal depression, postnatal depression, postpartum mood disorder, postpartum panic disorder, and postpartum obsessive-compulsive disorder. While this is not an exhaustive list, these are the known postpartum disorders identified within the literature.

The DSM-IV TR specified postpartum depression as a major depressive disorder beginning within four weeks after delivery. The symptomology included, “sadness or loss of interest, appetite disturbance, sleep deficit, lack of or excessive concern for the baby, and anxiety or irritability” (Patel et al., 2012, p. 535). The DSM 5 revised the “with postpartum onset” (DSM-IV TR, 2000, p. 422) specifier with “peripartum onset,” (DSM 5, 2013, p. 186) and this was the only change made. Postpartum is still listed as just a

specifier under major depressive disorder, occurring within 4 weeks of delivery. The DSM-5 (2013) does indicate women who do experience postpartum major depressive disorder often experience it “prior to delivery” (p. 186), hence the new terminology of peripartum onset. It was further identified that once a woman experiences a postpartum episode, her risk increases “30% to 50% with each subsequent delivery” (DSM-5, 2013, p. 187). Research indicates the risk assessment is valid for mothers who have experienced prior major depressive or postpartum depressive episodes. However, there remains controversy among researchers and practitioners over the DSM-5’s clinical definitions of when peri- and post-onset symptoms begin (Mercier, Garrett, Thorp, & Siega-Riz, 2013; Savitz et al., 2011; Wisner, Moses-Kolko, & Sit, 2010). For instance, in contrast to the DSM-5, the ICD-10 classifies postpartum onset as occurring within 6 weeks after birth (Wisner et al., 2010). Researchers found that the admission of symptoms could occur as far as 90 days from pregnancy (Wisner et al., 2010) and symptoms may linger a year after pregnancy (Mercier et al., 2013). There is no consistency among the research as to the onset and length of postpartum symptomology, just as there is little consistency regarding the prevalence of postpartum depression (Bueno, 2010).

It is important to realize that in postpartum symptomology—whether a passive experience of the baby blues or of a more aggressive affective psychosis—emotional highs and lows are a common aspect of pregnancy (Carter, 2014). By normalizing the experience for mothers, we can then work to strip away the stigma, anxious concern, and fear that there may be something irrevocably wrong with them. The first step towards normalization is through understanding the issue from all perspectives. Following is a

brief review of literature conceptualizing postpartum depression from its biological, psychological, and social contributing factors.

### **Biological Factors Associated with Postpartum Depression**

Few research studies have examined the biological factors associated with postpartum depression. There are challenges associated with such research, as all pregnancies are different. Skalkidou et al. (2012) described the biological changes a woman experiences postpregnancy such as “ovarian steroids, the hypothalamic-pituitary-adrenal axis, the serotonergic neurotransmitter system, the thyroid system, and inflammatory markers” (p. 659). The authors found that while psychosocial factors play a role, researchers should not discount the potential biological effects and possible genome associations increasing the risk of postpartum. Further, Skalkidou et al. found evidence suggesting a major depressive disorder may be activated by the “inflammatory response system,” adding to the anxiety experienced during pregnancy (p. 667). To alleviate the inflammatory response, Vitamin D supplementation has been shown to improve mood and have an anti-inflammatory response (Skalkidou et al., 2012). Another common and natural biological change during pregnancy is hormonal responses. Hormonal changes occur before, during, and after pregnancy. For instance, the hormones estrogen and progesterone will increase during pregnancy and then rapidly drop after delivery. This rapid drop in hormones can cause symptoms associated with baby blues (Tu, Lupien, & Walker, 2005).

Issues with the pregnancy at the perinatal stage may increase postpartum depression risk. Blom et al. (2010) found “perinatal complications were significantly

associated with postpartum” (p. 1390). In their research, Ross, Sellers, Evans, and Romach (2004) found that biological factors play a significant role in postpartum symptoms and a woman’s emotional reactions. The researchers went on to state,

The major finding [in this study] was that biological variables, including both genetic and hormonal factors, influence depressive symptoms during pregnancy indirectly, through their influence on vulnerability to psychosocial stressors and symptoms of anxiety. We interpret this to mean that biological variables, including both genetic and hormonal factors, make an individual more or less likely to respond to particular life situations with feelings of 'stress' or 'anxiety.'

(p. 463)

### **Psychological Factors of Postpartum Depression**

There are many psychological factors that can influence postpartum depression, such as stress, prior mental health illness, mental state during and after pregnancy, unhealthy lifestyle, anxiety, and emotional lability (Kohen, 2010; Ross et al., 2004; Sanchez-Villegas et al., 2012). Unlike biological or immuno-related stress, psychological stress is individual in nature. Consequently, the stress experienced is an individual appraisal of their own limitations or the situation exceeding their own coping resources (Lazarus & Folkman, 1984).

### **Social Factors: The Need for Social Support**

Social support has been identified as an important variable factor in determining the health of the mother during pregnancy. Highet and Drummond (2004) and Hung (2004) stress that social support can be a significant buffer to the negative and harmful

effects of life stressors, such as the stress of pregnancy. First-time mothers in particular are at a high risk for pregnancy related stressors, such as the stress of now caring for an infant. As cited by Leahy-Warren, McCarthy, and Corcoran (2011), researchers Martell (2001) and Weiss, Ryan, Lokken, and Nelson (2004) found “mothers are presented with the challenge of simultaneously providing self-care and infant care while in the hospital and then mastering these skills at home, often in an unsupported environment” (p. 174).

### **Internet Therapy Treatment for Postpartum Depression**

The internet is proving to be more than just a useful tool for searching, blogging, shopping, chatting, and whatever else users deem to desire from it. Rather, the internet is rapidly becoming a source for people to gain medical and mental support. Medical websites such as WebMD, social networking sites such as Facebook, and internet support groups have gained ground as more individuals turn to the internet for health support.

The internet continues to gain ground as a valid source for mental health treatment (Danaher et al., 2012; Haga et al., 2013; O’Mahen et al., 2014). Internet based therapeutic interventions strive to make psychological treatments readily available, accessible, and feasible, but the lingering question is whether internet treatments can be as successful as traditional therapy. Current research appears to suggest that not only is internet therapy a viable treatment modality, but it is proving to be as successful as its traditional counterpart (Andersson et al., 2012; Richards & Richardson, 2012). According to Andersson et al. (2012), internet cognitive behavioral therapy (iCBT) has proven successful at treating depression. Further, Cowpertwait and Clarke found a significant reduction in depression symptoms among patients treated using internet-based therapy

(2013). Internet therapy treatments such as internet-CBT (iCBT) or Computerized CBT (CCBT) are also effective treatments for anxiety disorders, hypochondriasis, PTSD, depression, and most recently in addressing the symptoms of postpartum depression (Hedman et al., 2011; Jones et al., 2013; Palmqvist, Carlbring, & Andersson, 2007).

In treating postpartum depression, Haga et al. (2013) found internet therapy to be not only feasible, but of “high quality,” “credible,” and an appropriate medium for treatment success (p. 2). O’Mahen et al. (2014) had similar results in their study assessing the feasibility and efficacy of their Netmums.com trial based in the U.K. An internet based option encourages women to seek access to timely treatment. This was a factor noticed by authors Haga et al. (2013) and O’Mahen et al. (2014) in their research. It was discovered that the prevalence of postpartum depression was significantly higher in women who sought internet based treatment. There was also an identified self-stigma associated with women seeking psychological help. This self-stigma has been defined as:

The fear that by seeking help or going to therapy, a person will reduce their self-regard, their satisfaction with themselves, their confidence in themselves and their abilities, and that their overall worth as a person will be diminished. (Vogel, Wade, & Haake, 2006, p. 326)

The perception of a mother seeking mental health treatment is perhaps the strongest stigma factor that hinders treatment-seeking behavior (Kleiman, 2015; Xie et al., 2009). Social stigma associated with a postpartum depression diagnosis could prove fatal as the stress and guilt of being a mother are magnified by social expectations. The emotional difficulty of childbirth is often silenced by physicians and family with

statements like: “you’ll feel better if you leave the house,” “all mothers experience this,” “it is just the blues,” or worse: “find a hobby” (Kleiman & Raskin, 2013, Chap. 11).

Child bearing and motherhood are considered to be some of the best times of a woman’s life, as discussed by Karen Kleiman founder of Postpartum Stress Center (2015). It is supposed to be a natural, wondrous occasion, devoid of difficulty, and nothing shy of loving adoration is felt for the child just born. For some mothers this may be the case. For others, it is riddled with crippling postpartum depression and near psychotic ruminations.

Regardless of the spectrum of severity of postpartum depression, no mother should go through childbirth without being told depression is a normal part of childbirth. Research has found that approximately 80% of women will experience some varying form of postpartum depression after childbirth. By normalizing this experience, more mothers may feel less apprehensive about seeking treatment (Ross et al., 2004; Wenzel et al., 2003). Furthermore, if postpartum depression were considered a normal part of pregnancy, more physicians could readily incorporate pre-screenings and treatment options for mothers.

Internet therapy provides many advantages to women suffering postpartum depression (Palmqvist et al., 2007). Primary among those advantages is access. The internet provides immediate access to resources, support groups, and therapy practitioners. Further, internet based treatments can access a “larger percentage of women in need” (Danaher et al., 2012, p. 2), which is especially important to women who have limited access to mental health resources. Another unique feature of internet therapy is

the mothers' ability to "set their own pace," accessing the information they feel they need in that moment (Danaher et al., 2012, p. 2-3). Internet based interventions may also reduce the overall cost of healthcare (Cowpertwait & Clarke, 2013, p. 248).

### **Internet versus Traditional Therapy Treatment**

Andersson, Cuijpers, Carlbring, Riper, and Hedman (2014) found that there were no significant differences between self-guided internet cognitive behavioral therapy (iCBT) and traditional therapy treatment. Cuijpers et al. (2010) also noted there was no major difference between traditional therapy and therapists who utilized technology as part of their treatment modality. Internet therapy allows for convenience and immediate access. Furthermore, research has discovered that the modality of internet therapy itself is therapeutic in the sense that writing is therapeutic (Rochlen, Zack, & Speyer, 2004). One way to participate in internet therapy is communicating through email and group message boards. Rochlen et al. found that the act of writing out issues and concerns is deeply self-reflective, at times more vulnerable than speaking, and can be empirically revealing (2004). Writing can then lead to disinhibition on the part of the client. This likely occurs because internet therapy is quite anonymous (Danahar et al., 2012). The anonymity of the therapy has led to increased self-disclosure, as the client feels less judgment versus being in the room with someone (O'Mahen et al., 2013; Palmqvist, 2007).

Internet therapy has proven comparable to traditional types of therapy in treating depression (Cowpertwait & Clark, 2013), anxiety disorders (Andersson et al., 2012), and postpartum depression (Dennis et al., 2012; O'Mahen et al., 2013). It has the potential to help with the treatment of eating disorders (Aardoom, Dingemans, Spinhoven, & Van

Furth, 2013; Loucas et al., 2014). In their meta-analysis based upon 11 primary studies, Vallury, Jones, and Oosterbroek (2015) found that computerized cognitive behavioral therapy (CCBT) was more acceptable and effective among rural populations than traditional therapy. Ebert et al. (2015) found in their meta-analysis that internet based cognitive behavioral therapy was considered superior for “interventions targeting anxiety, depression, and trans-diagnostic interventions” (p. 1).

Barak, Hen, Boniel-Nissim, and Shapira (2008) performed a meta-analysis on the effectiveness of Internet-based psychotherapeutic intervention and found that of the 92 studies included for review, Internet therapy had an impressive effect size of 0.53 as compared to face-to-face therapeutic intervention. The researchers also discovered there was no significant difference detected in effectiveness between Internet-based interventions and face-to-face therapy. It should also be noted that these results were gathered from a meta-analysis of research studies published up to March 2006, indicating an upward trend of clients beginning to prefer more technology-based treatment options. Furthermore, the researchers found that when Internet therapy was interactive, therapy success was increased (Barak et al., 2008). More recently, Andersson et al. (2014) directly compared internet based CBT to face to face CBT by conducting a systematic review of 13 studies, totaling 1053 participants, and meta-analysis. The researchers discovered that internet cognitive behavioral therapy (iCBT) produced equivalent effects as directly compared to face to face CBT treatment. Lintvedt et al. evaluated the effectiveness of un-guided Internet-based self-help by surveying 163 college students. It

was found that even un-guided internet therapy produced positive results at reducing negative thoughts and symptoms and increased participant literacy and awareness (2013).

Collectively, the cited research supports the notion that internet therapy has great potential, yet there is still a strong need for more evaluation of standardized internet treatment modalities. This is also the desire of participants involved in many of the pilot studies reviewed and of those researched as to how they utilize the internet regarding healthcare decisions. As research continues to identify the best methodological approaches (passive or interactive Internet therapy), it is clear the internet could be integrated independently or in conjunction with an overall therapy program to treat a variety of mood disorders and psychoses. Researchers agree that given the prevalence of technology in our daily lives, it would be inappropriate to ignore the potential strengths of this modality (Woodford, Farrand, Bessant, & Williams, 2011).

There remains a noticeable literature gap regarding the preference of choice for treatment modalities, either preferring traditional or internet based. As Barak et al. (2008) discovered, it was more the providers who were against using internet therapy than the patients. With regard to treating postpartum depression with internet therapy, there has been resounding positive feedback from pilot studies (Danaher et al., 2013; Jones et al., 2013; & O'Mahen et al., 2013). However, there is limited research available on what types of treatment women with postpartum depression prefer and what factors influence their preference. This type of information is typically discovered after the pilot study, not beforehand. It is the belief of this researcher that understanding what women may prefer

at the beginning could help inform future pilot studies, as well as influence recruitment strategies.

Although the internet affords providers and patients ease of accessibility, there are also weaknesses and difficulties with the use of internet based treatments to consider. The literature suggests there are some specific shortcomings to internet-only therapy. Loucas et al. states it is necessary to determine internet therapy's effectiveness (2014).

Researchers also want to better understand the reasons for "dropout," and find ways to maintain post-treatment gains (Richards & Richardson, 2012, p. 329). Others have attempted to improve recruitment and retention strategies (Woodford, Farrand, Bessant, & Williams, 2011) and ensure quality of treatment (Cowpertwait & Clarke, 2013).

Rochlen et al. (2004) added that with the loss of face-to-face interaction, the therapist may miss key nonverbal cues and may misunderstand or misinterpret text-based communication. Granted, these challenges can be and have been overcome with the advancement of real-time video chats, but this too leads to other technological issues.

There may be a time delay, the internet connection may be slow for either therapist or client, and there may be computer hardware failures (Rochlen et al., 2004). There is also concern for security and confidentiality. Security is a necessary component to internet therapy, and maintaining client confidentiality—whether it is storing client records electronically or ensuring the client on the other side of the webcam is capable of speaking confidentially. These are all aspects the therapist must consider when engaging in internet therapy with a client.

While the challenges appear daunting, new research has made leaps and bounds in supporting the efficacy of internet therapy as a realistic, and perhaps only alternative for some clients, treatment modality (Danahar et al., 2012; O'Mahen et al., 2013). In following the research recommendation of the authors above, this research study attempted to add to the growing body of knowledge addressing the following: does internet therapy reduce feelings of stigma; do participants believe it is an effective modality; and are participants satisfied with the treatment modality as compared to traditional therapy. In addressing these issues, this study may help with the continued development of effective internet therapy.

### **Summary**

As discussed above, the biopsychosocial model is an integrative approach to understanding the complex nature of postpartum depression. The biopsychosocial model allows researchers to focus on the interpersonal relationship among the biological, psychological, and social factors associated with the symptoms and severity of postpartum depression. Within that framework, this study operated to determine and assess internal and external motivations for help-seeking behavior, as well as assessed for satisfaction of treatment. By understanding these factors, future research can be conducted to perhaps develop an effective therapy program for postpartum depression treatment.

In chapter 3, I will discuss all aspects of the research method designed for this dissertation. The procedures, setting, and sample will be discussed as well as the

instruments used for this study. The research questions and the statistical analyses will also be presented for further review.

## Chapter 3: Research Method

### **Introduction**

In this chapter, I will describe the design of the study and justify the research approach. The chapter also contains details of the participant population, participant recruitment, and defense of the sample size. Furthermore, I will explain the procedures, instrumentation utilized, and the data collection method. The chapter closes with a discussion of participant rights and ethical considerations.

### **Research Method**

As discussed in Chapter 1 and herein, the internet is used as a major source to deliver therapy services using technology such as Skype for real-time video chats, text-based chats, online support groups, and blog posts. Early research remained mixed on the effectiveness of using the internet as a delivery source for therapy (Loucas et al., 2014), but other researchers have determined that internet therapy can reduce symptomology (Haga, Drozd, Brendryen, & Slinning, 2013; Jones et al., 2013; O'Mahen et al., 2014). As technology continues to develop, so too will our capabilities as psychologists and treatment providers. Continued research is necessary as there is an opportunity to provide effective treatment to women suffering from an illness that all too often goes untreated (CDC, 2013).

In this study, I investigated preference for therapy treatment, comparing and contrasting internet therapy to traditional therapy. Previous researchers have developed pilot programs, NutmumsHWD (O'Mahen et al., 2013) and MomMoodBooster (Danaher et al., 2013), and utilized surveys to assess participant satisfaction and elicit critical

opinions in an effort to improve treatment delivery options. The majority of the empirical research reviewed involved pilot studies and recruitment strategies of women who met diagnostic criteria for postpartum depression. Surveys were then used to assess for treatment outcome, reduction of symptoms, retention and compliance, and satisfaction with the treatment received (Jones, Goldsmith, Hewson, & Williams, 2012; Richards & Richards, 2012; Wisner, Logsdon, & Shanahan, 2008; & Woodford et al., 2011). A research project similar to my study was conducted by Teufel et al. (2011), where they administered a questionnaire to those receiving outpatient care to assess how they utilized the internet. Another similar research project assessed for the effectiveness of web-based therapy interventions (Cowpertwait & Clarke, 2013). Utilizing random-effects and regression analyses, Cowpertwait and Clarke (2013) found the mean attrition rates were similar across web-based interventions versus face to face interventions, thereby indicating that web-based treatment was just as effective as face to face treatment.

Therefore, the research design I selected for this study was a quantitative survey design collecting posttreatment data from two groups: (a) women who received internet therapy and (b) women who received traditional therapy for postpartum symptoms. I analyzed the data utilizing an independent one-tailed *t*-test analysis to assess for between-group differences that may influence the choice of treatment modality based upon the following variables: feelings of stigma, perceived credibility of treatment, and satisfaction with treatment. Previous researchers have identified these variables as possible reasons for utilizing internet therapy, but few have identified whether these truly are influencing factors for treatment choice. The variables are often identified after the

fact. In other words, after the pilot studies were conducted, these reasons were identified in client statements as reasons supporting the need for internet therapy (Danaher et al, 2013). This research design was appropriate for this study as it allowed for simple random sampling of a chosen population. The design was selected to add to the growing body of literature examining the efficacy of internet therapy interventions by comparing them to traditional therapy treatments.

### **Research Questions**

I developed the following research questions and hypotheses for this study based on the literature.

RQ 1: Do women who seek internet therapy exhibit levels of self-stigma that are less than or equal to the self-stigma experienced by women who seek traditional forms of therapy, as measured by the Self-Stigma of Seeking Help Scale (SSOSH)?

H<sub>0</sub>1: There is no difference in the experience of self-stigma.

H<sub>1</sub>1: Women who seek internet therapy do exhibit lower levels of stigma than women who seek traditional forms of therapy.

RQ 2: Do women find internet therapy to be at least as credible to traditional therapy, as measured by the Credibility Expectancy Questionnaire (CEQ)?

H<sub>0</sub>2: There is no difference in credibility between methods of therapy.

H<sub>1</sub>2: Women find internet therapy to be more credible when compared to traditional therapy.

RQ 3: Are women with postpartum depression at least as likely to be satisfied with internet therapy as a treatment option over traditional therapy, as measured by the Satisfaction with Therapy and Therapist Scale (STTS-R)?

H<sub>03</sub>: There is no difference in level of satisfaction between women who use internet therapy and those who use traditional therapy.

H<sub>13</sub>: Women who use internet therapy exhibit higher levels of satisfaction, as compared to those who use traditional therapy.

### **Research Design**

In this study, I assessed women who have utilized internet therapy and women who have utilized traditional therapy. The intended goal was to determine if the women who utilized internet therapy experienced less stigma in accessing mental health services versus their counterparts who accessed traditional therapy, as well as to assess for credibility of treatment and for client satisfaction with using internet therapy. To assess both internet treatment and traditional therapy, I used the following outcome measures: the SSOSH, the CEQ, and the STTS-R.

The selected research design for this study was a quantitative cross-sectional survey design, employing a nonprobability convenience sample of women formerly and currently experiencing postpartum depression. I collected posttreatment data from (a) internet based postpartum depression support groups, (b) internet therapy websites, and (c) traditional postpartum depression group therapy and individual therapy sites. The research approach was appropriate for this study as it attempted to address the specific efficacy of internet postpartum treatment. The design was selected to add to the research

examining the efficacy of internet interventions for the specific treatment of postpartum depression.

### **Participants and Study Setting**

The participants for this study consisted of childbearing women, 18 years of age and older, who experienced postpartum depressive symptoms either during or after child birth. The participant sample was drawn from women who sought traditional therapy treatment, and those who sought internet treatment from online support groups and therapists who provide internet therapy. I directed those who chose to participate to an online survey from SurveyMonkey, a well-known research website (<https://www.surveymonkey.com/>). The sample only included those who received treatment and those who received treatment via the internet.

### **Recruitment Strategy**

For this study, I recruited participants who had already received some form of internet therapy or traditional therapy for postpartum depression symptoms. Participants were required to be childbearing women 18 years of age and older, to have given birth recently or within 3 years, and to have received therapeutic treatment within that same timeframe. To be included in the study, participants must have experienced some postpartum depressive symptoms either during or after their pregnancy. The population did not need to be currently experiencing symptoms or currently in treatment to participate in the study. Participants were recruited through three tiers. The primary tier was from online resources, such as online postpartum depression groups and social networking sites, such as Facebook, LinkedIn, and Instagram. For the secondary tier

recruitment, I posted flyers in the lobbies of practices that provide internet therapy for postpartum depression and those that provide traditional therapy treatment. The third tier recruitment came from posting flyers in well-baby clinics, women's health clinics, and community health centers. For tiers two and three, permission was attained to post a flyer within the lobby of the provider office.

The flyer provided a brief explanation and a survey link where interested participants could willingly and anonymously submit the survey. Women who met the inclusion criteria (age, internet access, email address, and speak fluent English) were asked to complete the survey questionnaire. Participants who did not meet the eligibility requirements were disqualified and their survey data omitted from the study.

### **Procedures**

Interested participants were provided with general information about the study and asked to volunteer by answering the survey questions. If the volunteer participant met the required criteria as discussed above, the participant was then provided with an informed consent form that was electronically signed and dated. The informed consent form included a brief description of the study, the voluntary and anonymous nature of the study, and information regarding confidentiality. Next, the participant was asked to answer a demographic questionnaire. The demographic questionnaire was a self-report questionnaire asking participants their age, ethnicity, partner status, date of delivery, number of children, education background, and socio-economic status. A copy of the demographic questionnaire is provided in Appendix A. Once participants completed and sent the demographic questionnaire and informed consent form, they then proceeded to

the study survey. The survey consisted of the following measures: SSOSH (Vogel, Wade, & Haake, 2006), the CEQ (Borkovec & Nau, 1972), and the STTS-R (Oei & Green, 2008, p. 436). The individual scales and their respective questions can be found in Appendices B, C, and D.

### **Description of the Survey Process**

The SSOSH (Vogel, Wade, & Haake, 2006), CEQ (Borkovec & Nau, 1972), and the STTS-R (Oei & Green, 2008) scales were available online, located on SurveyMonkey. In order to make the public aware of the study, an enrollment message with a survey hyperlink was posted on postpartum online support groups and social media websites such as Facebook and LinkedIn, and print flyers directing participants to the survey link were posted in women's clinic lobbies. By clicking on the hyperlink, potential participants were directed to SurveyMonkey, which included information about the nature of the study. If the potential participants met the inclusion criteria, they were directed to the Informed Consent form where they input their email address as consent, and clicked *continue* or *exit*. If the participant chose to exit the survey, this individual was not able to participate in the study. Only those participants who selected the *continue* option were allowed access to the survey.

### **Instrumentation**

Below is a description of each of the survey instruments that were utilized for this study. These instruments are well known and considered reliable measures among mental health professionals.

### **Self-Stigma of Seeking Help Scale (SSOSH)**

The SSOSH was developed by Vogel, Wade, and Haake (2006), and is a 10-item scale designed to assess self-stigma associated with seeking professional psychological help. Vogel et al. described self-stigma as “the reduction of an individual’s self-esteem or self-worth caused by the individual self-labeling him/herself as someone who is socially unacceptable” (p. 325). Participants are asked to rate statements on a 5-point Likert scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *agree and disagree equally (neutral)*; 4 = *agree*; 5 = *strongly agree*). The items are then scored 1-5 and the total score is the sum of all 10 items with a scoring range of 10-50. The scoring algorithm leads to one of three acuity ranges: Low Stigma (10-22 score), Medium Stigma (23-32 score), and High Stigma (33-50; Vogel et al., 2006).

In an extensive two-study experiment Vogel et al. (2006) found the SSOSH scale had unidimensional factor structure and good reliability. The authors were able to cross-validate reliability, which showed evidence of validity across all study samples, and “uniquely predicted attitudes toward and intent to seek psychological help” (p. 325). The authors had originally created 28 items to measure self-stigma, but to make the measure brief they reduced it to the 10 highest loading items.

The revised 10-item scale was found to have an internal consistency of  $\alpha = .91$  ( $N = 583$ ), with a mean of 27.1 ( $SD = 7.7$ ; Vogel et al., 2006). Study 2 confirmed factor analysis by utilizing the principle axis factor analysis and confirmatory factor analysis (Vogel, Wade, & Hackler, 2007). The factors being “attitudes towards seeking help” and “intention to seek counseling” (Vogel et al., 2007, p. 42) were found to have strong

validity ( $r_s = -.53$  to  $-.63$  and  $-.32$  to  $-.38$ ) in predicting attitude and awareness of stigma. Furthermore, the principle axis factor in Study 1 was found to be 53% of the total variance with all items loading  $>.50$  (Vogel et al., 2006). The results “indicated a good fit of the data to the factor model” (Vogel et al., 2006, p. 329) as was previously found in the initial study. The internal consistency of Study 2 ( $\alpha = .89$ ,  $N = 470$ ) was also very similar to Study 1 ( $\alpha = .91$ ,  $N = 583$ ) (Vogel et al., 2006).

The revised 10-item scale was found to have good test-retest reliability at  $.72$  over a 2-month timeframe. To determine the maximum likelihood method, the authors utilized three indices of goodness of fit: the comparative fit index (CFI) with a value greater than  $.95$ ; the root mean square error of approximation (RMSEA) with a value less than  $.06$ ; and standardized root mean square residual (SRMR) with a value less than  $.08$  (Vogel et al., 2006). The results of Study 2 found that the maximum likelihood method was CFI =  $.98$ , RMSEA =  $.04$ , and SRMR =  $.04$ , again indicating a good fit of the data to the factor model (Vogel et al., 2006). The author’s research found the SSOSH was able to strongly predict the factors of help-seeking attitudes and help-seeking intentions.

I selected this instrument because of its ability to measure attitudes toward seeking help as well as the ability to differentiate “those who sought psychological services from those who did not” (Vogel et al., 2006, p. 325). The scale further differentiates from general stigma and self-stigma, the specific factor this study is interested in. Self-stigma pertains to the individual sense of self-labeling as somehow socially unacceptable. In this case, it is considered socially unacceptable not to love a

newly born child. It is this self-labeling factor that often prevents women with postpartum depression from seeking help.

### **The Credibility Expectancy Questionnaire (CEQ)**

The CEQ is composed of seven questions where participants rate each statement using a 9-point Likert scale. The measure was created by Borkovec and Nau (1972) as the Treatment Credibility Questionnaire in an effort to measure the credibility of therapeutic relationships. It has since evolved under the continued research of Borkovec and Devilly into the Credibility Expectancy Questionnaire (Borkovec & Devilly, 2000). The CEQ has been found to have high internal consistency from .79 to .90 across multiple studies, and good test-retest reliability at .82 (Deville & Borkovec, 2000).

The measure has been utilized in one form or another by researchers to measure and assess for therapy credibility as part of an outcome measurement (Addis, Hatgis, Krasnow, Jacob, & Bourne, 2004; Frueh, Henderson, & Myrick, 2005). The CEQ has been shown to be flexible and can be adapted for use in research studies (Tritter, Fitzgeorge, De Jesus, Harper, & Prapavessis, 2014). The measure asks participants how they *think* they have improved by the end of treatment, and how they *feel* therapy has reduced their symptoms (Borkovec, Newman, Pincus, & Lytle, 2002). The scale was found to be “stable across different populations” and was able to consistently derive the two predicted factors of expectancy and rationale (Deville & Borkovec, 2000).

This measure was chosen specifically for its ability to assess for how women “think” and “feel” about therapy expectations and outcome. This study is meant to assess how participants think and feel about internet therapy versus traditional therapy. The

CEQ scale will allow for such exploration to assess for participant expectancy of each treatment modality as well as garner data regarding how participants feel about the therapy overall.

### **Satisfaction with Therapy and Therapist Scale (STTS-R)**

The Satisfaction with Therapy and Therapist Scale was developed to assess a client's "level of satisfaction with their therapeutic experiences" (Oei & Green, 2008, p. 436). The STTS was established to provide a measurement for therapeutic outcomes for non-specific factors. For instance, as authors Oei and Shuttlewood discovered, most therapy outcome measures were geared toward depression symptomology and not relatable to other therapy treatments (1999). The initial STTS was developed with two factors, "Satisfaction with Therapy" and "Client Evaluation of Therapist" (Oei & Shuttlewood, 1999, p. 748). The STTS reliability ( $\alpha=0.90$ ) was rated as very good with a population of 67.

To strengthen the STTS, the revised model was developed utilizing confirmatory factor analysis with a population ( $N=344$ ) suffering mood and anxiety disorders (Oei & Green, 2008). Again internal consistency was rated very high ( $\alpha=0.93$ ), indicating the STTS-R is a valid and reliable measure of client satisfaction (Oei & Green, 2008). This measure is an important addition to this research project, as it allows clients to express their satisfaction with both the therapy modality and the therapist. By having this duality of factors, the study can further assess participant perception of internet therapy as a satisfying treatment modality. Further, the STTS-R will allow for the assessment of

client perception within traditional therapy, determining if the client is satisfied with the therapist.

### **Data Collection**

Potential participants were asked to complete a survey consisting of demographic questions, the SSOSH, CEQ, and STTS-R. The survey was completed entirely online, utilizing SurveyMonkey. As discussed above, participants were asked to complete a premeasure to determine eligibility to participate. If the criteria were met, the participant was directed to a survey link with instructions on how to complete the survey.

Participants were also informed about how long the survey would take and they were provided contact information if they encountered technical issues or had other questions about the survey. Upon receipt of the surveys, all data was entered into SPSS software version 20.0 for comprehensive statistical analysis. No data was collected until IRB approval was received on November 11, 2016.

The responses were carefully screened for accuracy to ensure that the data had been input correctly, there were no missing values, and to check for normality. Provided the potential threats to validity, as described in detail below, this was important as the data were analyzed for statistical significance. To assess for homogeneity of variances, the SPSS analysis included a Levene's test of equality of variances to assess for valid outcomes (Haslm & McGarty, 2014). This study utilized an alpha level of .05 to assess for significance.

### **Sample Size**

To ensure the data obtained had an adequate amount of participants, I utilized G\*Power software to calculate my sample size (Faul, Erdfelder, Buchner, & Lang, 2013). This study looked at the difference between two independent means (two groups). The hypothesis to be tested was whether internet therapy was as effective, and not inferior, compared to traditional face-to face therapy. Hence, for the purpose of the sample size calculation, the effect size is at least zero, relative to the non-inferiority margin of  $\delta=0.3$ . It is generally acceptable to utilize a power of .80, and this is the recommended minimum power a researcher should utilize for statistical research (Olbricht & Wang, n.d.). With these inputs, G\*Power calculated a total sample size of 278. With this total sample size, I needed to survey at minimum 139 participants in each group.

### **Data Analysis**

With IRB approval, the data was collected from November 2016 through July of 2017. The research questions were analyzed using an independent sample *t* test. A *t* test for independent samples can be utilized to assess for differences in a “single continuous dependent variable by a dichotomous independent variable” (Tabachnick & Fidell, 2001). In this case, three dependent variables were used: feelings of stigma, credibility of treatment, and satisfaction with treatment. One *t* test was conducted for each dependent variable. As discussed previously, the independent variable was the type of therapy: traditional vs. internet based.

A non-inferiority design was used to test the hypothesis of whether internet therapy was not inferior to traditional therapy treatments. The significance level was set

at .05 and a one-tailed test of each hypothesis was performed, which is consistent with a test for non-inferiority of a novel treatment in comparison to a standard treatment whose efficacy is well established (Greene et al, 2008). For the purpose of the non-inferiority test, the non-inferiority margin,  $\delta$ , equaled 0.3 standard deviations on the dependent variable. The non-inferiority comparison was performed by examining the mean for the internet-based therapy minus the mean for traditional based face-to-face therapy. If a 90% confidence interval for this difference in means did not include the value  $-\delta$ , then the null hypothesis was rejected and it was inferred that internet therapy was not inferior to traditional therapy.

### **Threats to Validity**

There were two possible types of threats to validity: internal and external threats. An internal validity threat could threaten my ability to draw correct inferences from the data I received (Creswell, 2008). An external validity threat could occur when incorrect inferences are drawn from the data due to “other persons, settings, and past or future situations” (Creswell, 2008, p. 145).

For this study, a threat to internal validity would be maturation. *Maturation* refers to the potential short-term and long-term effects of time on the participant (Laerd, 2012). For instance, in the short-term, a sudden change in mood could affect how a participant responds to a question posed, or even how the physical effects of hunger, exhaustion, and inattention can have a similar effect. In the long-term, if the study had taken months or years to complete, the participants could experience life-changing events (marriage/divorce, financial gain or loss, etc). Maturation of a participant is an unknown

factor a researcher cannot always account for, and may not realize has occurred. As participants completed the required surveys there was no guarantee that they would not be interrupted by any number of physical or emotional factors. To alleviate potential time related distractions, as part of the instructions participants were asked to complete the survey in one session and in a quiet space where they could dedicate their full attention.

Another factor associated to maturation was the fact I was assessing post-treatment participants. It is possible the participants may have physically and emotionally matured since the time they experienced postpartum symptoms (Laerd, 2012). Their feelings, issues, symptoms may have faded over time and may not be as relevant to them now as they were when initially experienced. If this was the case, their responses on the scales may not accurately portray how they were feeling then (pre- and during treatment), versus how they feel presently. I planned to account for this threat to validity by focusing on women who have given birth within 3 years and received treatment during that timeframe.

A potential external threat to validity could have included the type of treatment received. In general, this study compared internet therapy to traditional therapy. The study was not focused on the specific orientation of the therapist, but the orientation of the counselor may influence client satisfaction. This could have created an unknown outlier in the data, such as did the therapy not work due to a personality conflict with the therapist? Although this was a concern, the results of this study are expected to still be relevant to providing viable treatment modalities to women suffering postpartum depression. The research suggests that having the alternative treatment option may be

enough to reduce postpartum symptomology and encourage women to engage in therapy treatment (Danahar et al., 2012; Cuijpers, 2010).

Because I have no control over internal and external validity threats, caution was be taken when attempting to generalize the results of the analyses. To limit potential issues with these variables, I have conducted a power analysis to ensure a large enough sample size that allowed me to correctly reject the null hypothesis at the specified effect size (Cohen, 1988).

### **Protection of Participants Rights and Ethical Considerations**

The following guidelines were followed in an effort to protect the participants of this study.

1. Before data collection began, I obtained approval from Walden University's Institutional Review Board. The approval number has been included.
2. All participants received a copy of their signed informed consent form.
3. The informed consent form briefly explained the nature of the study, the time commitment to complete the survey, the voluntary nature of the study, confidentiality, and how to contact the researcher.
4. In the event that a participant required additional assistance, the form also included contact information to Postpartum Progress who would connect the participant to local resources.
5. It was made clear to the participants that they could withdraw from the study at any time.

6. There were no physical risks to participants in this study, however, there was the potential for emotional upset, which is why participants were provided informational links and phone numbers to postpartum depression organizations and a crisis hotline.
7. It was clearly communicated that all participant information provided to the researcher was confidential and no identifiable information was saved or utilized. No confidential information was reported within the study.
8. Per Walden University guidelines, collected data will be kept for a period of 5 years and then deleted or destroyed.

### **Summary**

This chapter presented an overview and summary of the research method and design of the study.

## Chapter 4: Results

### Introduction

The purpose of this study was to quantitatively assess for the preference of treatment among a population of adult women who have received treatment for postpartum depression. The survey served to assess for group differences regarding satisfaction of treatment, feelings of stigma experienced, and expectation of treatment. The study surveyed two groups of women: those who received internet therapy and those who received traditional therapy. The survey was designed to assess for treatment satisfaction using the STTS-R (Oei & Green, 2008), feelings of stigma using the SSOSH (Vogel et al., 2006), and credibility/expectation of treatment using the CEQ (Borkovec & Devilly, 2000).

The chapter begins with a preanalysis data screen to identify incomplete responses and outliers. To assess for homogeneity of variances, the SPSS analysis includes a Levene's test of equality of variances (Haslm & McGarty, 2014). Upon completion of the preanalysis, I analyzed the remaining data by conducting an independent sample *t* test specifying a non-inferiority margin of  $\delta = -0.3$ .

### Data Collection

#### Preanalysis Data Cleaning

A total of 78 participants responded to the online survey. Prior to the analysis, I examined the data to determine survey completion and outlying responses. A total of 27 responses were automatically removed due to participants not completing the survey in its entirety. Two more participant responses were removed as they had completed the

Demographic Questionnaire but did not respond to the survey questions. Participants who had provided email addresses were asked to complete the survey in its entirety. Initially, the study attempted to collect 278 participant responses with 139 participants in each group. However, after 9 months of data collection, only a total of 78 responses had been collected. With committee approval, the collected data were analyzed. Limitations to data collection are thoroughly reviewed in Chapter 5.

### **Descriptive Statistics**

The survey consisted of three self-administered surveys (STTS-R, SSOSH, and CEQ) and a self-administered demographic questionnaire. The survey was available on SurveyMonkey and targeted towards adult women (over 18 years old) who had experienced postpartum depression and received treatment for symptoms. Data collection began in November 2016 and ended in July 2017. I invited participants to complete the survey through Facebook, LinkedIn, and Twitter. Fliers were also printed and posted, with permission, in women's clinics, health care facilities, and offices of therapy providers inviting women to complete the online survey.

SurveyMonkey only allowed participants to continue with the survey if they agreed to the Informed Consent and met the participation criteria. Those participants who did not agree to the Informed Consent, or who did not meet all participant requirements, were disqualified, and their data were omitted. All data were collected, downloaded, and maintained in a secure and encrypted file that was available only to me.

A total of 78 participants responded to the survey. A total of 29 responses were removed due to participants not completing the survey in full. This left a total sample of 49 participant responses.

The average age of respondents was 29 years, with dates of birth ranging from 1971 to 1997. The majority of respondents appeared to be White ( $n = 22$ , 44%) and married ( $n = 31$ , 62%). Most participants had completed high school ( $n = 11$ , 22%) or had completed college ( $n = 19$ , 40%). Participants appeared to have one to two ( $n = 40$ , 80%) children. Most participants appeared financially stable ( $n = 45$ ; 90%). The choice of therapy treatment method was fairly evenly distributed: internet therapy ( $n = 20$ , 40%) and traditional therapy ( $n = 27$ , 54%).

A breakdown of the demographic variables is provided in Table 1 below.

Table 1

*Frequencies and Percentages of Demographics (N = 49)*

Variable	<i>n</i>	%
<b>Race/Ethnicity</b>		
American Indian or Alaskan Native	2	4.0
Asian or Pacific Islander	3	6.0
Black or African American	9	18.0
Hispanic/Latino	14	28.0
Caucasian/White	22	44.0
<b>Education</b>		
Some High School	8	16.0
High School Graduate	11	22.0
Some College	8	16.0
College Graduate	11	22.0
Graduate Degree	8	18.0
Prefer not to answer	3	6.0
<b>Income</b>		
\$0-24,999	4	8.0
\$25,000-49,999	11	23.0
\$50,000-74,999	10	21.0
\$75,000-99,999	4	8.0
\$100,000-149,999	14	30.0
\$150,000- or Higher	5	10.0
<b>Relationship Status</b>		
Married	33	69.0
Single, but cohabitating with significant other	4	8.0
Significant/Domestic Partner	2	4.0
Single, never married	2	4.0
Separated	4	8.0
Divorced	3	7.0
<b>Number of Children</b>		
1	19	39.0
2	21	43.0
3 or more	9	18.0
<b>Treatment delivery method</b>		
Internet therapy	22	44.0
Traditional therapy	27	56.0

I generated composite scores for the stigma of seeking treatment, credibility of treatment, and satisfaction of treatment. Perception of stigma was generated through the average of 10 five-point Likert-scaled items ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Credibility of treatment was measured through an average of six 10-point Likert-scaled items ranging from 1 (*not at all*) to 10 (*very much*). Perception of satisfaction was generated through the average of 12 five-point Likert-scaled items, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

### **Reliability**

Cronbach's alpha was utilized to assess reliability of the composite scores. All scales demonstrated strong reliability with Cronbach's alphas ranging from .86 to .92. Utilizing Mallery's (2016) guidelines, the Cronbach's alpha coefficients were found to be in the excellent to good range. The results for satisfaction of treatment ( $\alpha = .92$ ) and perception of credibility and quality of treatment ( $\alpha = .91$ ) were excellent. The results for perception of self-stigma ( $\alpha = .86$ ) were good. The scales and their corresponding Cronbach's alpha appear in Table 2 below:

Table 2

#### *Cronbach's Alpha Reliability for Composite Scores*

Composite Scores	<i>a</i>	No. of items
Satisfaction	.92	12
Stigma	.86	10
Quality	.91	6

## Data Analysis

### Research Question 1

Do women who seek internet therapy exhibit levels of self-stigma that are less than or equal to the self-stigma experienced by women who seek traditional forms of therapy, as measured by the Self-Stigma of Seeking Help Scale (SSOSH)? This question translates into the following null and alternative hypotheses:

$$H_{01}: \mu_I - \mu_T \geq 1.78$$

$$H_{11}: \mu_I - \mu_T < 1.78$$

where  $\mu_I$  and  $\mu_T$  are the mean SSOSH scores among internet and traditional therapy groups, respectively, and 1.78 is the noninferiority margin for the mean difference. In other words, the null hypothesis,  $H_{01}$ , states that women who seek internet-based therapy exhibit higher levels of self-stigma than those who seek traditional therapy. In contrast, the alternative hypothesis,  $H_{11}$ , asserts that women who seek internet therapy exhibit levels of self-stigma that are less than or equal to those of women who participate in traditional therapy. The non-inferiority margin, 1.78, is calculated as 30% of 1 standard deviation of the SSOSH scores of the traditional therapy group ( $\sigma_T = 5.93$ ), and it constitutes the threshold below which the mean SSOSH score of the internet therapy group is considered *at most* equivalent to the mean score of the traditional therapy group.

The effect size between therapy groups was 0.307, or in other words, the mean SSOSH score of the internet therapy group increased by approximately 30.7% of the pooled standard deviation ( $\sigma_P = 6.18$ ) when compared to the mean of the traditional therapy group. Using a 1-sided, independent samples  $t$  test, the mean difference in

SSOSH scores between women who sought traditional forms of therapy ( $\mu_T=26$ ;  $\sigma_T = 5.93$ ) and those who sought internet therapy ( $\mu_I = 27.9$ ;  $\sigma_I = 6.48$ ) was assessed and compared to the non-inferiority margin. The results of the test failed to reject the null hypothesis as they demonstrated that online therapy was not significantly non-inferior in comparison with traditional therapy ( $\mu_I - \mu_T = 1.90$ ; 95% CI =  $\infty, 4.99$ ;  $p = 0.525$ ).

### **Research Question 2**

Do women find Internet therapy to be at least as credible to traditional therapy, as measured by the Credibility Expectancy Questionnaire (CEQ)? This question translates into the following null and alternative hypotheses:

$$H_{02}: \mu_I - \mu_T \leq -5.03$$

$$H_{12}: \mu_I - \mu_T > -5.03$$

where  $\mu_I$  and  $\mu_T$  are the mean CEQ scores among internet and traditional therapy groups, respectively, and -5.03 is the non-inferiority margin for the mean difference. In other words, the null hypothesis,  $H_{02}$ , states that women perceive the credibility of internet therapy to be lower than that of traditional therapy. Conversely, the alternative hypothesis,  $H_{12}$ , states that women perceive the credibility of internet therapy to be greater than or equal to that of traditional therapy. The noninferiority margin, -5.03, is calculated as 30% of 1 standard deviation of the CEQ scores of the traditional therapy group ( $\sigma_T = 16.77$ ), and it constitutes the threshold above which the mean CEQ score of the internet therapy group is regarded *at least* equivalent to the mean score of the traditional therapy group.

The effect size between therapy groups was 0.116, or in other words, the mean CEQ score of the internet therapy group increased by approximately 11.6% of the pooled standard deviation ( $\sigma_P = 16.85$ ) when compared to the mean of the traditional therapy group. Utilizing a 1-sided, independent samples  $t$  test, the mean difference in CEQ scores between women who sought traditional forms of therapy ( $\mu_T = 66.1$ ;  $\sigma_T = 16.77$ ) and those who sought internet therapy ( $\mu_I = 68.0$ ;  $\sigma_I = 16.94$ ) was assessed and compared to the non-inferiority margin. Although the results of the test failed to reject the null hypothesis, the noninferiority of online therapy was marginally significant in comparison with traditional therapy ( $\mu_I - \mu_T = 1.96$ ; 95% CI = -6.46,  $\infty$ ;  $p = 0.085$ ).

### Research Question 3

Are women with postpartum depression at least as likely to be satisfied with internet therapy as a treatment option over traditional therapy, as measured by the Satisfaction with Therapy and Therapist Scale (STTS-R)? This question translates into the following null and alternative hypotheses:

$$H_{03}: \mu_I - \mu_T \leq -2.14$$

$$H_{13}: \mu_I - \mu_T > -2.14$$

where  $\mu_I$  and  $\mu_T$  are the mean STTS-R scores among internet and traditional therapy groups, respectively, and -5.03 is the non-inferiority margin for the mean difference.

The null hypothesis,  $H_{03}$ , states that women who seek internet therapy are less likely to be satisfied with their treatment option than women who seek traditional therapy.

Conversely, the alternative hypothesis,  $H_{13}$ , states that the level of satisfaction experienced by women who seek internet therapy is greater than or equal to the level of

satisfaction experienced by women who seek traditional therapy. The noninferiority margin, -2.14, is calculated as 30% of 1 standard deviation of the SSTS-R scores of the traditional therapy group ( $\sigma_T=5.98$ ), and it constitutes the threshold above which the mean SSTS-R score of the internet therapy group is regarded *at least* equivalent to the mean score of the traditional therapy group.

The effect size between therapy groups was 0.107, or in other words, the mean SSTS-R score of the internet therapy group increased by approximately 10.7% of the pooled standard deviation ( $\sigma_P=5.44$ ) when compared to the mean of the traditional therapy group. Utilizing a 1-sided, independent samples *t* test, the mean difference in SSTS-R scores between women who sought traditional forms of therapy ( $\mu_T=48.6$ ;  $\sigma_T=5.98$ ) and those who sought internet therapy ( $\mu_I=49.2$ ;  $\sigma_I=4.64$ ) was assessed and compared to the non-inferiority margin. Although the results of the test failed to reject the null hypothesis, the non-inferiority of online therapy was marginally significant in comparison with traditional therapy ( $\mu_I-\mu_T = 0.58$ ; 95% CI = -2.14,  $\infty$ ;  $p = 0.074$ ).

### **Summary of Scores**

A summary of the composite variables from each research question with *t* scores is provided in Table 3. A visual representation of mean differences, their confidence intervals, and noninferiority margins is provided in Figure 1.

Table 3

*Effect Estimates and Noninferiority Test Results for Self-stigma, Credibility, and Satisfaction Scores*

Variable	<i>t</i>	Mean Difference <sup>2</sup>	95% CI <sup>3</sup>	Std <sup>4</sup>	Effect Size <sup>5</sup>	Non-inferiority Margin <sup>6</sup>	<i>p</i>
Self-stigma	0.06	1.90	(∞, 4.99)	6.18	0.307	1.78	0.525
Credibility	1.39	1.96	(-6.46, ∞)	16.85	0.116	-5.03	0.085 <sup>†</sup>
Satisfaction	1.47	0.58	(-2.14, ∞)	5.44	0.107	-1.79	0.074 <sup>†</sup>

*Note.* Results were produced by conducting independent samples *t* tests with pooled variances.

<sup>2</sup>Mean differences were defined as  $\mu_I - \mu_T$ , where  $\mu_I$  and  $\mu_T$  were the means among internet and traditional therapy groups, respectively.

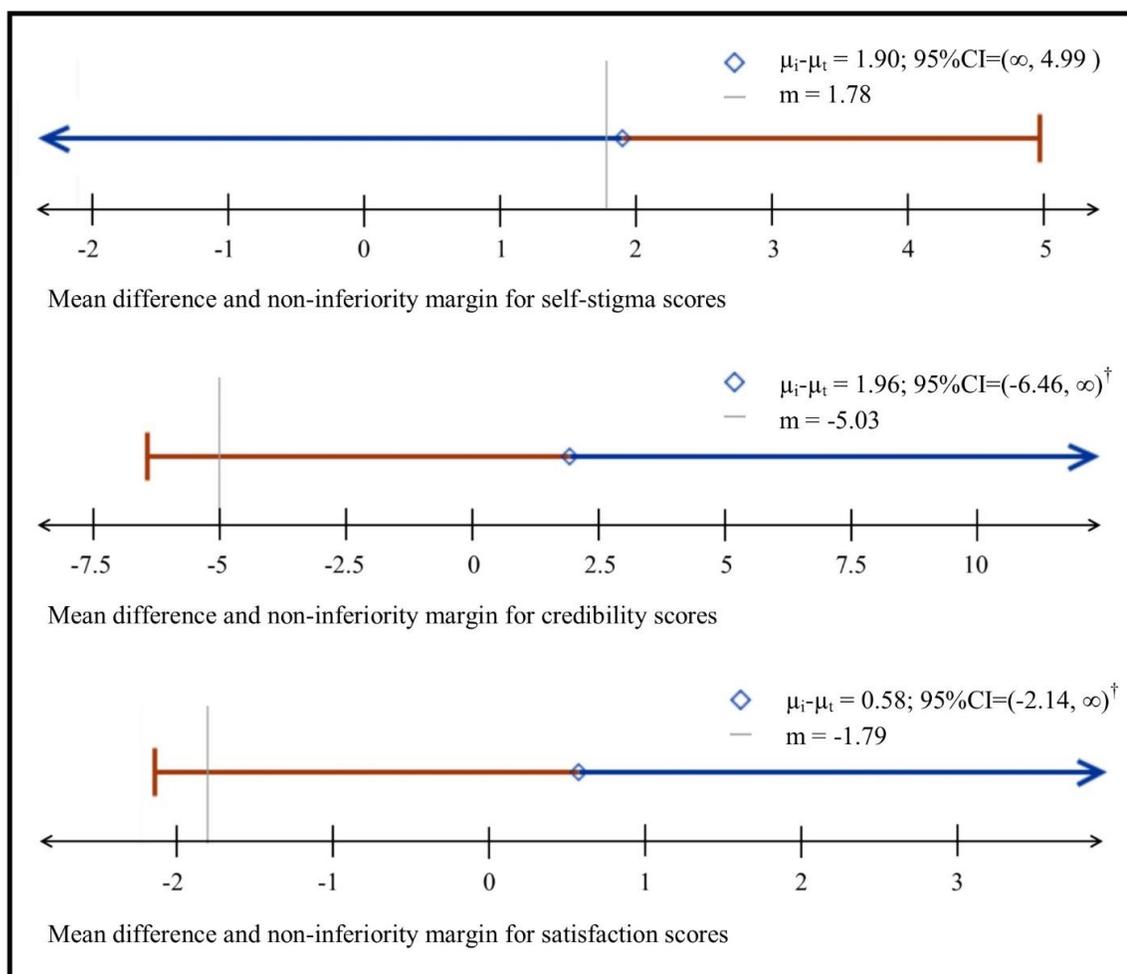
<sup>3</sup>95% Confidence intervals of mean differences were 1-sided as a result of conducting 1-sided, non-inferiority tests.

<sup>4</sup>Pooled standard deviation.

<sup>5</sup>Effect sizes were computed using Cohen's *D*.

<sup>6</sup>Non-inferiority margins were defined as  $\pm 0.3\sigma$ , where  $\sigma$  was the standard deviation of the composite score of the traditional therapy group.

<sup>†</sup>Marginal statistical significance defined as  $0.05 < p \leq 0.1$ .



**Figure 1.** Comparison of mean differences and non-inferiority margins for self-stigma, credibility, and satisfaction scores<sup>1</sup>

<sup>1</sup>Results were produced by conducting independent samples t-tests with pooled variances. Mean differences were defined as  $\mu_i - \mu_t$ , where  $\mu_i$  and  $\mu_t$  were the means among internet and traditional therapy groups, respectively. 95% Confidence intervals of mean differences were 1-sided as a result of conducting 1-sided, non-inferiority tests. Non-inferiority margins (m) were defined as  $\pm 0.3\sigma$ , where  $\sigma$  was the standard deviation of the composite score of the traditional therapy group.

<sup>†</sup>Marginal statistical significance defined as  $0.05 < p \leq 0.1$ .

## Chapter Summary

The purpose of this study was to assess for the preference of treatment among two groups of participants: those who received internet therapy and those who received traditional therapy to treat postpartum depression. This chapter began with a review of

the data collection processes and data analyses. For Research Questions 1, 2, and 3, the results of the independent sample  $t$  tests supported the retention of the null hypotheses. Specifically, there was a lack of statistical significance demonstrating that online therapy experienced levels of self-stigma, credibility, and satisfaction that were equal to or better than traditional therapy. In Chapter 5, I will further review the results, limitations, and implications for future research and social change.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this quantitative study was to assess preference of therapeutic delivery (i.e., internet and traditional) for postpartum depression treatment, as well as assess for the influence of stigma, satisfaction with therapy, and expectation of quality. The population assessed consisted of adult women who had given birth within 3 years, had experienced postpartum depressive symptoms, and had received therapeutic treatment.

Chapter 5 consists of a summary review of the findings and a brief interpretation of the findings in relation to prior research and the development of treatment approaches. The chapter also includes the limitations encountered and strengths identified. Finally, the chapter concludes with a discussion regarding implications for social change and recommendations for future researchers.

### **Summary of Results**

Three research questions guided the study. The first question focused on perception of stigma experienced by participants regarding accessing mental health treatment. The second addressed participant satisfaction with the treatment modality. The third addressed credibility and quality of treatment of the treatment modality.

The analyses indicated there was no difference experienced between the treatment modalities. The null hypothesis was retained for all three research questions. The participants perceived no difference in their experience of stigma, their treatment satisfaction, or the credibility and quality between the two therapy modalities.

## Interpretation of the Findings

### Perceptions of Stigma in Seeking Therapeutic Treatment

The results of the independent sample  $t$  test demonstrated that, compared with the traditional therapy group, online therapy was not significantly noninferior. Therefore, there was insufficient evidence to conclude that levels of self-stigma experienced by the online group were less than or equal to the levels of self-stigma experienced by the traditional group ( $\mu_I - \mu_T = 1.90$ ; 95% CI =  $-\infty, 4.99$ ;  $p = 0.525$ ). The results do *not* imply that levels of self-stigma in the online group were definitively *worse* than in the traditional group; rather, they convey that such a claim cannot be rejected with sufficient confidence. Thus, the results of this study do not indicate whether self-stigma levels in the online group are any less than, greater than, or equal to that of the traditional group. This finding is worth exploring further as previous research suggested that internet therapy is one way to encourage women suffering from postpartum depression to enter treatment (Danaher et al., 2012; O'Mahen et al., 2013). Previous research also suggested that stigma or the perception of societal stigma may have influenced a woman's decision to enter treatment. Curiously, the present study not only failed to demonstrate noninferiority of online therapy, but also found the mean level of self-stigma in the online group ( $\mu_I = 27.9$ ) to be greater than that of the traditional group ( $\mu_T = 26$ ). Such findings may have followed from the relatively small sample size, which typically results in increased sampling variability and decreased power to detect a mean difference beyond the noninferiority margin. Additionally, the lack of random sampling in my study design may have resulted in a sample population that was nonrepresentative of the greater

population of women with postpartum depression. Confounding may have also affected the results as the analysis did not account for extraneous factors related to self-stigma that may have been unequally distributed across therapy groups. For example, if a greater percentage of racial/ethnic minorities were included in the online group, then the online group may have been more likely to associate greater self-stigma with seeking therapy, thereby inflating the mean self-stigma score of the online group. Altogether, the smaller sample size, non-random sampling methods, and potential confounding limits the generalizability of the findings. Prior research suggested that stigma regarding mental health and stigma related to postpartum depression are significant factors affecting whether a woman would seek professional help (Bodnar-Deren, 2017; Dennis & Chung-Lee, 2006). The findings of this study warrant further research.

### **Perception of Credibility and Quality of Treatment**

The results of the independent sample *t* test comparing the mean difference in credibility to a noninferiority margin of -5.03 demonstrated a lack of statistical significance regarding the non-inferiority of the online therapy group. Thus, there was insufficient evidence to conclude that the perceived credibility of online therapy was greater than or equal to the credibility of traditional therapy ( $\mu_I - \mu_T = 1.96$ ; 95% CI = -6.46,  $\infty$ ;  $p = 0.085$ ). However, the results displayed marginal statistical significance, indicating that online therapy may indeed be noninferior in terms of credibility and that certain limitations, such as the relatively small sample size, may have impeded the test's ability to detect it. This finding appears consistent with previous research in that participants found internet treatment credible (Danaher et al., 2012; O'Mahen et al.,

2013). As noted in the Literature Review within Chapter 2, internet therapy is becoming a credible source for effective therapeutic treatment. As technology advances, allowing for greater mental health access, future research will want to focus on the continued credibility of such a modality. As Childress (2000) discussed, there are concerns about contextual quality of the therapeutic alliance, ethical issues regarding confidentiality, and ensuring quality internet access. These concerns have been echoed in more current research, as addressed by Amichai-Hambutger, Klomek, Friedman, Zuckerman, and Shani-Sherman (2014). Amichai-Hamburger et al. indicated that therapists continue to question the quality of the therapeutic alliance, as internet therapy lacks the physical presence of individuals in a therapy room. However, Amichai-Hamburger et al. counter that a growing number of studies have shown that internet therapy maintains the “standard tenets of traditional one-on-one treatment” (p. 289).

### **Perceptions of Satisfaction**

With mean levels of satisfaction of 49.2 and 48.6 across online and traditional therapy groups, respectively, participants in both groups appeared equally satisfied with the delivery of treatment. Nonetheless, the results of the independent sample *t* test displayed a lack of statistical significance regarding the noninferiority of online therapy. Therefore, there was insufficient evidence to conclude that the level of satisfaction reported in the online group was greater than or equal to the level of satisfaction experienced by the traditional group ( $\mu_I - \mu_T = 0.58$ ; 95%CI = -2.14,  $\infty$ ;  $p = 0.074$ ). These results were marginally significant, however, indicating that online therapy may indeed be noninferior in terms of satisfaction levels. As was the case with the credibility score,

limitations such as the study's relatively small sample size may have impeded the test's ability to detect non-inferiority with sufficient confidence. This would be consistent with previous research findings, where participants were satisfied with the internet therapy treatment and felt it was as good as traditional based treatment (Andersson, et al., 2012; Carlbring, et al., 2012). Satisfaction in using internet therapy to treat depression and obsessive-compulsive disorders has been affirmed in prior research studies. (Corner et al., 2017; Hedman et al., 2014; Herbst et al., 2013). Satisfaction has been rated high within controlled trials of experimental treatment. Hedman et al. (2014) indicated that, within their controlled trial, internet therapy as part of an out-patient psychiatric program for depression yielded a significant reduction in symptoms and high level of satisfaction with the treatment modality. The current research gap is in assessing real-world satisfaction with current internet therapy options. The existing literature has only assessed controlled experimental trials of satisfaction with internet therapy. The marginally significant results of the present study provide preliminary support for a possible real-world satisfaction with Internet therapy that is either equal to or greater than traditional therapy. However, interpretation of the results must be tempered by an awareness of other limitations of this study, such as the use of nonrandom sampling techniques and potential confounding.

### **Limitations of the Study**

This study encountered several limitations. The first limitation was the inability to collect the originally planned number of necessary participants, resulting in a relatively small sample size. The limited sample size not only increased sampling variability, thereby limiting the generalizability of the results, but also reduced the power of the

statistical tests to detect noninferiority. Additionally, this lack of power may have been exacerbated by relatively small effect sizes, particularly for credibility (0.116) and satisfaction (0.117) scores, increasing the tests' difficulty to achieve statistical significance. The narrow population the study focused on may be a reason for the lack of participants. The study specifically identified adult women who had given birth within 3 years and who had participated in internet therapy. Currently, internet therapy access is limited and targeted to general mental illness. There is no current identified internet treatment program specifically for postpartum depression. However, research presented in the literature review suggested that such a program would benefit women and mothers. The majority of research conducted regarding internet therapy for postpartum depression has been experimental, whereas this study sought to survey existing participants who had received treatment.

The second limitation stemmed from the use of convenience sampling as opposed to random-sampling methods. I contacted the majority of participants through social media sites such as Facebook, LinkedIn, and Twitter, thereby limiting participants to those who had access to such social media sites and technology. A selection bias may have occurred as this was an online study, which limited the number of surveys completed to those participants with access to the internet. The number of individuals who may not have had access to the internet would have been limited. For instance, a therapy provider shared my survey link to women in shelters. The provider reported back that many women were willing to participate, but were unable to secure access to a computer to complete the survey. With that in mind, the inverse may have been true in

that the online nature of the study likely drew a number of participants to the survey given its anonymity and ease of access.

The sample size was specifically limited to adult women (over 18 years old) who had given birth within 3 years. The sample size also specifically targeted women who had received internet therapy for postpartum treatment. These specifications may have impacted the ability to gain more responses, and likely affected generalizability. The sample size I collected was much smaller (internet therapy,  $n = 20$ ; traditional therapy,  $n = 27$ ) than originally planned (internet therapy,  $n = 139$ ; traditional therapy,  $n = 139$ ). The smaller sample limits the generalizability of the study, and the findings may not be representative of the larger population of adult women suffering from postpartum depression. Further, the study may have created an inherent bias to the results. I have argued in this study that internet-based therapy is an equivalent solution for some of the most vulnerable populations of new mothers (those without enough support, unobservant physicians, etc.), yet it is difficult to make that argument when those same populations (women in rural areas, economically unstable conditions) are unlikely to have regular computer and internet access. It is also worth considering that I may have specifically targeted women who had already been drawn to internet therapy methods in the first place, thereby creating a potential bias in the results.

Furthermore, the study relied on participant self-reports and retrospective recall memory of experiences with treatment and symptomology. The survey asked participants to recall what they thought and how they felt about their therapy treatment. Depending upon the length of time between last treatment and the completion of the survey, their

self-report may not have been 100% accurate. Meaning, participants may not have been able to recall the specifics of their experience and could not recall how the therapy aided them. Instead, the participants likely rendered a general impression of the experience, which does not help in drawing direct comparisons with traditional therapy. Additionally, I had no ability to confirm the participants' proficiency with the English language or if they happened to be mentally aware, and not under the influence of substances.

In addition to the inability to detect the participants' grasp of the English language, or their lucidity, I was unable to control for the environment in which the survey was completed. Given the nature of online surveys, there is no ability to detect where the participant completed the survey, whether there was privacy, limited distractions, disruptions, or confirmation of who completed the survey as data collection was anonymous. The survey link was posted publicly on social networking websites, and flyers were posted in public areas of mental health centers and women's clinics. The survey specified adult age women who had received or completed therapy to treat postpartum depression. I had no way of verifying that the client received therapy specifically to treat postpartum depression, and not a comorbid illness.

Finally, the observational nature of the study design may have introduced extraneous influences that distorted the results and compromised the investigation's internal validity. Subjects were not randomized into online and traditional therapy groups; rather, this study observed the responses of participants who had previously selected online or traditional therapies according to their preference. Thus, there is a possibility that additional factors related to both the type of therapy and the dependent

variables (self-stigma, credibility, and satisfaction scores) were unequally distributed across the therapy groups, distorting the relationships under investigation in this study. Future investigations of this type may be improved by utilizing experimental designs with random allocation or implementing methods to control for potential confounding, such as restriction, matching, or multivariate regression modeling (Oleckno, 2008).

### **Recommendations of Further Research**

This study provided further insight into postpartum depression treatment research by assessing for group differences regarding stigma, quality, and satisfaction with internet and traditional therapy treatment. There are still many areas to explore for further research. One such area is continued research regarding the quality of internet therapy for postpartum depression treatment, investigating confidential and ethical implications, therapeutic alliance, and addressing technological issues. This draws attention to another shortcoming of this therapeutic method, which is that it depends entirely on the client's self-assessment. The client must engage in self-diagnosis to determine if she is potentially suffering from postpartum depression (or a similar affliction, i.e. baby blues), seek out treatment online, and then have the self-awareness to determine whether or not this treatment has been effective. In traditional talk therapy, diagnosis and assessment are left to the mental health professional who has the professional knowledge to formulate these assessments that is not available to the patient.

In addition, it would be beneficial to the field for researchers to explore the increasing concern of licensing requirements when engaging in tele-health therapy treatment. Some states have invested in programs such as the Psychology

Interjurisdictional Compact (PSYPACT) (ASPPB, 2017). With programs such as PSYPACT, psychologists would be able to legally treat clients via internet therapy across interjurisdictional state lines. Research is limited in how such programs would impact licensing requirements and the ethical implications for treatment.

Another area of research would be the growing development of mental health applications, where patients could access treatment via smartphone. Rather than accessing treatment through a secure website on a computer, now patients can link to a therapist through their phone. This is becoming a popular option among young adults, but it also opens the door to possible confidentiality concerns (Radovic et al., 2016; University of California, 2016). As of 2016, there were approximately 165,000 mental health related applications (University of California, 2016). With that many applications to choose from, it will be more important than ever for researchers to consider efficacy and quality of these applications (Radovic et al., 2016).

### **Implications for Social Change**

Despite the study's limitations, this research does add to the body of knowledge regarding postpartum depression by illuminating the continued need for developing treatment pathways for women suffering postpartum depression. As previous research experiments indicate, internet therapy poses as an acceptable alternative to encourage women to access treatment (Amichai-Hamburger et al., 2014; O'Mahen et al., 2013; Danaher, et al., 2012). Further, internet therapy is a helpful resource in educating women about postpartum depressive symptoms. Additionally, internet therapy allows for more widespread access and reduces the overall cost of treatment, i.e. no travel cost, no need

for daycare/sitter, and no need to take time off from work (Acierno et al., 2015; Scott, Klech, Lewis, & Simons, 2015).

This study may encourage other researchers to conduct further studies on the efficacy of quality internet therapy options for the treatment of postpartum depression. Currently, there are numerous studies focused on internet therapy treating general mental illness. This has increased the knowledge-bank regarding the development of internet therapy as a treatment modality. However, postpartum depression has been identified as a chronic illness for women (CDC, 2013), and O'Mahen et al. (2013) report the significant need for effective treatment alternatives. It would be beneficial to this population if future research focused on the education and encouragement of women to seek help. In doing so, it may be possible to reduce the stigma associated with this painful mental illness.

### **Conclusion**

Current research indicates internet therapy can be utilized to deliver a variety of therapeutic services from anxiety to depression to OCD to addressing phobias (Amichai-Hamburger et al., 2014; Andersson et al., 2014; Barak et al., 2008). The results of this study provide insufficient evidence to conclude that online therapy is non-inferior to traditional therapy in terms of self-stigma, credibility, and satisfaction with treatment. Contrary to previous research that indicates stigma does determine treatment preference and help seeking behavior (Bodnar et al., 2017; Danaher et al., 2012), the results comparing self-stigma levels between online and traditional therapy groups were indeterminate. However, in congruence with prior literature, non-inferiority was marginally significant with respect to credibility and satisfaction with treatment,

suggesting that both measures in online therapy may indeed be greater than or equal to their counterparts in traditional therapy. Limitations related to the small sample size, non-random sampling techniques, and potential confounding impeded the validity and generalizability of the results. Nonetheless, the findings still have implications for practice and future research. In practice, the findings can educate professionals in the growing need for technology-based therapy treatment. The study also informs practitioners of current legislative trends supportive of internet and tele-health based mental health services, such as PSYPACT. The study adds to the body of knowledge encouraging further research and development of internet therapy for mental illness.

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### Appendix A: Demographic Questionnaire

The information contained in this questionnaire will remain confidential. All published reports will not include any identifying information about the participants in this study.

**1. What is your date of birth?** \_\_\_\_\_

**2. Ethnicity**

\_\_\_\_\_ African American                      \_\_\_\_\_ Asian, Asian American

\_\_\_\_\_ Caucasian/White                      \_\_\_\_\_ Hispanic/Latino

\_\_\_\_\_ Native American                      \_\_\_\_\_ Other, please specify

**3. Education**

\_\_\_\_\_ Some High School      \_\_\_\_\_ High School Graduate

\_\_\_\_\_ Some College              \_\_\_\_\_ College Graduate

\_\_\_\_\_ Graduate Degree

**4. Income**

\_\_\_\_\_ \$0 --\$20,000      \_\_\_\_\_ \$21,000 - \$40,000      \_\_\_\_\_ \$41,000 - \$60,000

\_\_\_\_\_ \$61,000 - \$90,000      \_\_\_\_\_ \$91,000 - or Higher      \_\_\_\_\_ Prefer not to answer

**5. Relationship Status**

\_\_\_\_\_ Single      \_\_\_\_\_ Married      \_\_\_\_\_ Significant/Domestic Partner

\_\_\_\_\_ Divorced      \_\_\_\_\_ Separated      \_\_\_\_\_ Never Married      \_\_\_\_\_ Widowed

**6. Number of Children**

\_\_\_\_\_ 1      \_\_\_\_\_ 2      \_\_\_\_\_ 3 or more

**7. What was the date of your most recent pregnancy?**

Month Day Year

**8. Do you recall experiencing postpartum symptoms? Symptoms such as: depression, bouts of crying, mood swings, fear, anxiety that you felt were out of your control.**

\_\_\_\_\_Yes \_\_\_\_\_No \_\_\_\_\_Maybe \_\_\_\_\_Not Sure

**9. Do you recall ever seeking treatment for postpartum depression symptoms?**

\_\_\_\_\_Yes \_\_\_\_\_No \_\_\_\_\_Maybe \_\_\_\_\_Not Sure

**10. How long ago did you receive therapy treatment?**

Type in the approximate date: \_\_\_\_\_

Select one of the following:

\_\_\_\_\_ Completed Treatment

\_\_\_\_\_ Currently in Treatment

**11. Do you recall searching the Internet about postpartum depression symptoms?**

\_\_\_\_\_Yes \_\_\_\_\_No \_\_\_\_\_Maybe \_\_\_\_\_Not Sure

**12. Did you seek help from a therapist/counselor who provides therapy using the Internet (i.e. email, text-chat, video chat)?**

\_\_\_\_\_Yes \_\_\_\_\_No \_\_\_\_\_Maybe \_\_\_\_\_Not Sure

**13. What type of internet therapy did you engage in with the therapist/counselor? (check all that apply)**

\_\_\_\_\_ Email communication

\_\_\_\_\_ Text-Chatroom (private)

\_\_\_\_\_ Video Chat (i.e. skype, face-time, etc)

\_\_\_\_\_ Mobile Text Support

\_\_\_\_\_ Online Support Group (private blog, private chatroom, etc.)

**14. Did you seek help from a therapist/counselor and engage in face-to-face therapy sessions?**

\_\_\_\_\_ Yes    \_\_\_\_\_ No    \_\_\_\_\_ Maybe    \_\_\_\_\_ Not Sure

### Appendix B: Self-Stigma of Seeking Help Scale (SSOSHS)

Please select the response that best describes your opinion of what seeking help would mean to you.

**1. I would feel inadequate if I went to a therapist for psychological help.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**2. My self-confidence would NOT be threatened if I sought professional help.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**3. Seeking psychological help would make me feel less intelligent.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**4. My self-esteem would increase if I talked to a therapist.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**5. My view of myself would not change just because I made the choice to see a therapist.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**6. It would make me feel inferior to ask a therapist for help.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**7. I would feel okay about myself if I made the choice to seek professional help.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**8. If I went to a therapist, I would be less satisfied with myself.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

**10. I would feel worse about myself if I could not solve my own problems.**

- Strongly Disagree
- Disagree
- Neither Disagree or Agree
- Agree
- Strongly Agree

### Appendix C: Credibility Expectancy Questionnaire (CEQ)

Please complete the following questionnaire by selecting an answer that best identifies your preference, reasoning, and perception of treatment credibility.

#### Set I

1. At this point, how logical did the therapy offered to you seem?

1      2      3      4      5      6      7      8      9  
 not at all logical      somewhat logical      very logical

2. At this point, how successfully do you think this treatment was in reducing your symptoms?

1      2      3      4      5      6      7      8      9  
 not at all useful      somewhat useful      very useful

3. How confident would you be in recommending this treatment to a friend who experiences similar problems?

1      2      3      4      5      6      7      8      9  
 not at all confident      somewhat confident      very confident

4. By the end of the therapy period, how much improvement in your symptoms do you think occurred?

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

#### Set II

For this set, close your eyes for a few moments, and try to identify what you really *feel* about the therapy and its likely success. Then answer the following questions.

1. At this point, how much do you really *feel* that therapy helped you to reduce your symptoms?

1      2      3      4      5      6      7      8      9  
 not at all      somewhat      Very much

2. By the end of the therapy period, how much improvement in your symptoms do you really *feel* occurred?

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

Appendix D: Satisfaction with Therapy and Therapist Scale–Revised (STTS-R)

Please select the box that best describes your opinion of your satisfaction with the therapy and therapists.

**1. I am satisfied with the quality of the therapy I received.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**2. The therapist listened to what I was trying to get across.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**3. My needs were met by the therapy.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**4. The therapist provided an adequate explanation regarding my therapy**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**5. I would recommend this therapy to a friend.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**6. The therapist was not negative or critical towards me.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**7. I would return to this therapist if I needed help.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**8. The therapist was friendly and warm towards me.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**9. I am now able to deal more effectively with my problems.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**10. I feel free to express myself.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**11. I was able to focus on what was of real concern to me.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**12. The therapist seemed to understand what I was thinking and feeling.**

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

**13. How much did this treatment help with the specific problem that led you to therapy?**

- Made things a lot better
- Made things somewhat better
- Made no difference
- Made things somewhat worse