

2015

Social Support as a Mediator Between Attachment and Relapse in women

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Jamie Wong

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Walden University

2015

Abstract

Social Support as a Mediator Between Attachment and Relapse in

Women

by

Jamie L. Wong

MA, National-Louis University, 2009

BS, Western Illinois University, 2004

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Counseling Psychology

Walden University

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Abstract

Prescription pain medication abuse is a developing social problem in the United States. This quantitative study, grounded in attachment theory, examined relationships between attachment, perceived social support, and relapse. It was hypothesized that significant relationships existed between (a) attachment dimensions and relapse and (b) perceived social support and relapse. A further hypothesis was that perceived social support was a mediator in the relationship between attachment and relapse. Participants were 69 adult females, each of whom completed a demographic questionnaire; the Advanced Warning of Relapse (AWARE) Questionnaire; the Experiences in Close Relationships, Revised (ECR-R); and the Personal Resource Questionnaire (PRQ). A multiple linear regression was conducted to determine relationships between attachment and perceived social support on relapse. A mediation analysis was conducted to determine whether perceived social support was a mediator between attachment and relapse. Results identified that women with anxious styles of attachment have higher relapse potential and that women with higher levels of perceived social support appeared to have decreased attachment anxiety. Results indicated that women with increased attachment anxiety who also reported higher levels of perceived social support showed a reduced potential to relapse. This research contributes to positive social change by confirming the importance for health professionals to incorporate both attachment theory and the role of social support into treatment modalities to prevent relapse and to increase public awareness about these psychological factors of prescription pain medication addiction.

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Dedication

I dedicate this work to my husband, Brian, whose constant support helped me continue to pursue and complete this degree over what seems like many years. His encouragement was my ongoing motivation and a significant factor in my success. I also dedicate this work to my close family and friends who provided support and encouragement along every step of the way.

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Chapter 1: Introduction

In recent years, the concern regarding addiction to prescription pain medication has grown throughout the United States (Allen & Richards, 2008; Maxwell, 2011). Ling, Mooney, and Hillhouse (2011) addressed the threefold increase in prescription opioid use and abuse from 1998 to 2008. In addition, current data from the Substance Abuse and Mental Health Services Administration (SAMHSA) (2013) found that in 2011, the national average of adults age 26 years and older using pharmaceutical medications for nonmedical purposes was 5%, and those abusing prescription pain medications was 4.4%.

The SAMHSA (2013) purported that addiction consists of more than a physical dependency. It encompasses psychological and social factors, such as lifestyle, that support addiction. Karow, Verthein, Krausz, and Schafer (2008) suggested that quality of life (QOL) for individuals with prescription pain medication addiction is affected. Research is needed to determine areas in which factors such as attachment style, social support, family conflict, co-occurring mental health conditions, and treatment outcomes affect the addiction and recovery process. Adinoff et al. (2010) define *relapse* in an individual as someone who ceased the use of substances for a period of abstinence but resumes their consumption. The authors specifically researched the importance of recognizing the warning signs of relapse to better understand and prevent relapse (Adinoff et al., 2010). Smith and Rosen (2009) further identified the need for research to explore the role that perceived social support has in both attachment and relapse potential. Recent research conducted by Shivpuri (2006) examined attachment in male substance abusers at a correctional residential treatment center. Shivpuri's findings

indicated that insecure, fearful styles of attachment are directly related to an increased likelihood of substance abuse. Limitations to Shivpuri's (2006) research include that participants were all male and that they were court ordered to the residential treatment center. The author was recommended that research be conducted to include females to determine whether these findings are consistent between genders (Shivpuri, 2006). The present study sought to address the need for further research on the relationship between adult attachment and perceived social support on relapse as supported by research from Karow et al. (2008) Shivpuri (2006). The present study sought to determine whether perceived social support was a mediating factor between attachment and relapse potential in women with prescription pain medication addiction.

In this chapter, I present the background to the current study, including the problem statement and purpose, current research questions, theoretical background, definition of key terms, assumptions, and limitations.

Background to the Study

Research conducted by Shivpuri (2006) applied attachment theory to examine a connection between those with insecure styles of attachment having increased relapse potential. More specifically, attachment theory and women have been researched to study the relationship between women with substance abuse issues and attachment to their children. However, attachment theory has not been studied with regard to substance abuse and adult relationships (Golder, Gillmore, Spieker, & Morrison, 2005). Bowlby developed attachment theory in the late 1960s and early 1970s as it relates to social relationships (Thorberg & Lyvers, 2010). Bowlby's theory suggests that early

relationships in life influence future relationships, and those individuals will develop these future relationships based on their past experiences (Reinert & Edwards, 2009). Other theorists followed in Bowlby's path and identified how parent-child relationships influence future peer relationships and even adult romantic relationships (Levine & Heller, 2011; Hazan & Shaver, 1994). In 1990, Collins and Read developed the Adult Attachment Scale (AAS) to assess attachment style to identify different dimensions of attachment (Ma, 2006). The development of this scale led to increased research regarding the role that attachment has in various forms of relationships and led to developing additional measures of attachment (Ma, 2006). The Experiences in Close Relationships-Revised (ECR-R) Questionnaire, developed and revised by Fraley, Waller, and Brennan (2000), was designed to determine individual differences with regard to attachment-related anxiety and attachment-related avoidance. The authors defined *attachment-related anxiety* as how individuals are either secure or insecure regarding availability and responsiveness to partners. *Attachment-related avoidance* is defined as the extent to which individuals are uncomfortable being close to others (Fraley et al., 2000). The present study used the ECR-R as a tool to identify individual differences with regard to attachment-related anxiety and attachment-related avoidance by identifying a sum for each scale (Fraley et al., 2000).

Flores (2006) investigated the relationship between attachment theory and substance abuse and noted that the two are intertwined either by (a) relationships being either a cause of or consequence of the addiction or (b) that attachment style has an intricate role in how individuals relate towards others. Caspers, Yucuis, Troutman, and

Spinks (2006) researched attachment theory and its role in successful treatment outcomes in substance abuse. Golder et al. (2005) recommended further research to identify whether adult romantic attachments will affect recovery success in women receiving outpatient treatment for substance abuse. Along with the role that attachment has in recovery success, social support is an area of interest in research on substance abuse in women as it has been established that romantic attachments and support systems affect treatment outcomes (Golder et al., 2005).

Smith and Rosen (2009) asserted that as people age, their social support systems often change as a result of relationship difficulties. In addition, individuals in treatment for substance abuse often exhibit increased anxiety related to stress and have been known to isolate rather than seek out support from others (Smith & Rosen, 2009). Tracy and Johnson (2007) acknowledged that women recovering from substance abuse and co-occurring disorders need support both from family and peer groups. They identify that often this group of women receives a mix of positive and negative support and, as result, further research is needed on the effect that social support has on attachment style and relapse potential. The Personal Resource Questionnaire (PRQ) was designed to assess two types of social support: the scope of social support and perceived social support (Brandt & Weinert, 1987).

Adult women are a group of individuals who have yet to be studied with regard to attachment style and prescription pain medication addiction, although research exists regarding the relationship between attachment and other substances (Golder et al., 2005). The relationship that attachment style has with relapse among women addicted to

prescription pain medication addiction is needed (Shivpuri, 2006). Examining the manner in which this population is attached to others may demonstrate the role that attachment style has in this population versus other populations. In addition, outcomes of the present research will likely improve treatment outcomes for women with prescription pain medication addiction in an outpatient setting and may also increase retention in treatment. The present study contributed to this subject area by expanding awareness and increasing public knowledge of the prescription pain medication epidemic.

The purpose of this study was to examine the relationship between attachment and perceived social support on relapse potential in a population of women with prescription pain medication addiction who were participants in outpatient treatment facilities. The present study sought to determine whether social support is a mediating variable between attachment and relapse potential.

Problem Statement

Research has demonstrated a connection between substance abuse and those with insecure attachment styles (Shivpuri, 2006; Thorberg & Lyvers, 2006; Wedekind et al., 2013). Attachment theory with regard to the relationship between women and children has been studied but current research lacks studies that investigate adult relationships (Golder et al., 2005). Currently a gap in the literature exists identifying the affect that attachment style and perceived social support have on relapse potential for women with prescription pain medication addiction. Specifically of interest is whether social support is a mediating factor between attachment style and relapse potential. The PRQ was used to evaluate perceived social support (Brandt & Weinert, 1987). Further research is

recommended to identify whether adult attachment and perceived social support will affect relapse potential in women receiving outpatient treatment for substance abuse (Golder et al., 2005). The present study sought to identify relationships between attachment and perceived social support and relapse potential. The present study sought to determine whether perceived social support was a mediating factor between attachment and relapse potential. The independent variables in this study were attachment style and perceived social support. The dependent variable was relapse potential. To participate in the present study, participants needed to have prescription opiates as their primary substance abused and needed to have been in treatment for at least 2 months.

Purpose of the Study

The purpose of this study, using a quantitative research design, was to examine relationships between insecure attachment (anxiety or avoidance) and perceived social support and relapse potential. It was hypothesized that perceived social support was a mediating factor between insecure attachment (anxiety or avoidance) and relapse potential. Participants completed a demographic survey, the Advance Warning of Relapse (AWARE) Questionnaire, the ECR-R, and the PRQ.

Variables

Two independent variables and one dependent variable were examined in the present research. The independent variables were attachment and perceived social support. The dependent variable was relapse potential.

Research Questions/Hypotheses

Research Question (RQ) 1. Does a relationship exist between attachment anxiety or avoidance and relapse potential in women with primary drug dependence on prescription pain medications? Attachment anxiety or avoidance will be measured using the ECR-R and relapse potential will be measured using the AWARE Questionnaire.

H_{01} . There is no significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

H_{a1} . There is a significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

RQ2. Does a relationship exist between perceived social support and relapse potential in women with primary drug dependence on prescription pain medications? Perceived social support will be measured using the PRQ and relapse potential will be measured using the AWARE Questionnaire.

H_{02} . There is no significant relationship between perceived social support and relapse potential.

H_{a2} . There is a significant relationship between perceived social support and relapse potential.

RQ3. Is there a significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator in women with primary drug dependence on prescription pain medications?

H_{03} . There is no significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

H_{a3} . There is significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

Theoretical Framework

Attachment style was explored by Bowlby, who determined that the manner in which individuals bond and interact with others can significantly affect other areas of development and emotional functioning (Thorberg & Lyvers, 2010). Attachment theory purports that this style of bonding develops early in life, often between parents and children; stabilizing during adulthood where individuals may have one of several styles of attachment. Bowlby proposed four types of attachment: secure, avoidant, resistant-ambivalent, and disorganized-disoriented (Cowan & Cowan, 2007). Depending on the child's experiences growing up, individuals develop an internal working model that influences their adult interactions (Thorberg & Lyvers, 2010). Because it is known that attachment develops early in life, it is necessary to study how these internal working models apply to adult relationships with support systems and spouses/significant others. Attachment theory has been applied in the study of substance abuse with various populations (parent-child, males with substance abuse, women with alcohol dependence); however, it has yet to be studied in a population of women who primarily abuse prescription pain medication (Caspers et al. 2006; Golder et al., 2005; Reinert & Edwards, 2009). Further, Golder et al. (2005) identified the need to determine whether romantic adult attachments affect recovery success among women in outpatient treatment programs for substance abuse.

In Chapter 2, I will provide in-depth background on information concerning attachment theory, the connection between attachment styles and substance abuse, and the role that perceived social support has in attachment style and relapse. In addition, I will examine the need to expand the literature to include current research regarding attachment style and prescription pain medication addiction where perceived social support is a mediator in an adult female population who abuses prescription pain medication.

Nature of the Study

I used a quantitative, nonexperimental design. Data were collected using questionnaires completed by women enrolled in outpatient treatment for prescription pain medication addiction at Center for Behavioral Health clinics for a minimum of 2 months. There was no relationship between the patients and the researcher and the researcher was not employed by the facilities. Licensed alcohol and drug counselors identified possible participants as those who had a primary diagnosis of opioid abuse/dependence and had been participating in treatment for at least 2 months and only provided them with an invitation letter to participate. The independent variables in this research were attachment style and perceived social support. The dependent variable was relapse potential. Data were collected from women who participated in outpatient treatment programs for prescription pain medication addiction and were collected via the Internet using Survey Monkey. Data collected were statistically analyzed using a multiple regression to determine whether there were significant relationships between the independent variable attachment anxiety or avoidance and the dependent variable relapse potential. A multiple

regression analysis was used to determine whether a relationship existed between perceived social support and relapse potential. Last, a mediational analysis was used to determine whether perceived social support was a mediating factor between attachment and relapse potential.

Key Term Definitions

The following terms were used in this study:

Substance abuse: The *DSM-IV-TR* (2000) defined substance abuse as “a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances” (p. 197).

Prescription Pain Medication Addiction: The use of opioid medications that are obtained with a prescription from a physician or by illegal means that are used by an individual (National Institute on Drug Abuse [NIDA], (2013). Prescription pain medication addiction will be operationally defined and identified by licensed alcohol and drug counselors at Center for Behavioral Health who have determine participants who have a primary diagnosis of opioid abuse/dependence and have been participating in treatment for at least 2 months.

Attachment: Bowlby’s theory of attachment stated that early relationships predict future relationships (Reinert & Edwards, 2009). Specifically, Bowlby developed four types of attachment: secure, avoidant, resistant-ambivalent, and disorganized-disoriented (Hardy, 2007).

Attachment Anxiety: Fraley et al. (2000) defined attachment anxiety as the extent to which individuals are uncomfortable being emotionally close to others. For this study,

attachment anxiety was operationally defined using the ECR-R to evaluate the level of attachment secureness of the individual where lower total scores suggest increased relationship security and higher scores indicate increased attachment anxiety (Fraley et al., 2000).

Attachment Avoidance: Fraley et al. (2000) defined *attachment avoidance* as how individuals are either secure or insecure in regard to availability and responsiveness to partners. For this study, *attachment avoidance* was operationally defined using the ECR-R to evaluate the level of attachment secureness of the individual where lower total scores suggest increased relationship security and higher scores indicate increased attachment avoidance (Fraley et al., 2000).

Relapse Potential: Relapse refers to an individual who ceased the use of controlled or uncontrolled (illegal) substances but resumes their consumption or use after a period of abstinence (Adinoff et al., 2010). To operationally define relapse, the AWARE Questionnaire will be utilized to determine relapse potential by identifying past relapse episodes and current risk based on a total score with higher scores indicating greater relapse potential (Miller & Harris, 2000).

Perceived Social Support: As defined as described by Tracy, Munson, Peterson, and Floersch (2010) social support refers to “verbal or nonverbal information or advice, tangible aid or action provided by social network members or inferred by their presence, which has beneficial emotional or behavioral effects on the recipient.” (p. 259) Perceived Social Support will be operationally defined using the PRQ and will be based on a total score where higher scores indicate a greater level of perceived social support (Brandt &

Weinert, 1987).

Assumptions

The study was based on the following assumptions:

1. For purpose of the present research it was assumed that participants primarily used prescription pain medications and not other substances; although other substances may have been used secondary to prescription pain medications.
2. All participants responded to the assessment items honestly and to the best of their ability.
3. It was assumed that the Licensed Alcohol and Drug Counselors at Center for Behavioral Health only provided invitation letters to participate to patients who had a primary diagnosis of Opioid Abuse/Dependence and had been in treatment for at least two months.

Scope and Delimitations

The present study sought to identify relationships between attachment, perceived social support, and relapse potential to determine whether perceived social support was a mediating factor between attachment and relapse potential. Using a quantitative approach was the most appropriate for this study as the present research sought to determine if a relationship exists between variables. The chosen population for this study was women who were enrolled in outpatient treatment for prescription pain medication addiction at Center for Behavioral Health Clinics. For participants to participate, they needed to be enrolled for at least two months and must have prescription pain medication as their primary substance abused with a diagnosis of Opioid Abuse/Dependence. Attachment

theory was the theoretical framework for the present study as the study aimed to investigate potential relationships between attachment styles and perceived social support in women with prescription pain medication addiction and relapse potential. Participants were chosen only from outpatient opioid treatment facilities in the United States the outcomes of this study may not generalize to other countries/cultures.

Limitations

Limitations to the present study were as follows:

1. Participants in this study completed self-report questionnaires possibly leading to missing and/or false data. The questionnaires contained questions regarding their patterns of substance use and past relapse episodes as well as questions regarding their support systems. As questionnaires were not have been altered demand characteristics did not apply.
2. Participants were selected from the pool of individuals enrolled in outpatient opioid treatment facilities for at least two months and their level of interest in the current research may have been varied.
3. Participants were chosen only from Center for Behavioral Health's 20 outpatient opioid treatment facilities, across eight states in the United States; consequently, the outcomes of this study may not generalize to other treatment facilities, or countries/cultures.
4. As Center for Behavioral Health clinics are a fee for services organization, the present study only applied to women in treatment who had insurance or could

afford treatment therefore the outcomes of the study may not generalize to all women with prescription pain medication addiction.

5. As participants in this study were volunteers who were currently in treatment the researcher had no control over ethnicity or cultural background of participants. Therefore the outcomes of this study may not be a broad description of prescription pain medication addiction in the general population.

Social Significance

The results of the present research contribute to positive social change on the individual, community, and societal levels. As it has been established that prescription pain medication abuse has become a growing societal problem there needs to be specific research conducted to explore contributing factors and to develop solutions. The implications for positive social change seek to benefit the individual who abuses the substance by understanding the connection between attachment style to their social supports which leads to more specific programming to treat prescription pain medication addiction and prevent relapse on an individual basis. This information is vital given the current lapse in research regarding treatment of opiate abuse and attachment style. Additionally, information from this research is important to the community to establish a better understanding of the current problem at hand as prescription pain medication addiction continues to grow across the United States and in both large and small communities (Allen & Richards, 2008; Maxwell, 2011). The results of this study intend to benefit society through enhanced treatment interventions, improving success of treatment, and decreasing future relapse episodes. Results also will expand the research

base on this topic filling the identified gap in the literature. In addition, the present study seeks to increase knowledge regarding the role that attachment and perceived social support has on relapse potential as it will contribute to increased public awareness of the issue as well as educate other professionals of the dangers associated with this type of substance abuse. Results will be disseminated to a variety of populations including medical and mental health professionals as well as the general population to better understand the growing problem as well as identify solutions to improve society and decrease the occurrence of prescription drug abuse by identifying attachment issues with adults more women may stay in treatment and not drop out therefore decreasing relapse across the population.

Summary

Current research fails to identify a relationship between attachment style and perceived social support on relapse potential in an adult female population in treatment for prescription pain medication addiction. This chapter identified the need for additional research regarding the relationship between attachment style and perceived social support and relapse potential in an adult female population that primarily abuses prescription pain medications. An overview of attachment theory, the theoretical framework for the current study, as well as the current research questions and hypotheses were introduced. Key terms that will be used throughout this study were defined as well as assumptions and limitations of the present research. Chapter 2 will provide a more thorough examination of past and current literature relating to attachment style, substance abuse, prescription pain medication addiction, perceived social support, and relapse potential. Chapter 3 will

provide a detailed description of the present study including a presentation of assessment measures, population and sampling procedures, and plans to analyze data collected.

Chapter 2: Literature Review

The purpose of this study was to examine the relationship between attachment style and perceived social support on relapse potential in a population of women with prescription pain medication addiction who are participants in outpatient treatment facilities. In addition, I sought to determine whether social support is a mediating variable between attachment style and relapse potential. In this chapter, I present a comprehensive review of past and current literature relating to attachment theory, prescription pain medication addiction, perceived social support, and relapse potential, as well as how these factors relate to one another.

Organization of the Chapter

In this chapter, I provide a comprehensive discussion on the topic of substance abuse, specifically prescription pain medication addiction, and attachment style in a female population. To achieve this objective, I present a comprehensive overview of attachment theory, a history of research focusing on substance abuse and attachment, gender differences among substance dependent individuals, and finally prescription pain medication addiction. I also address the role that perceived social support has as a possible mediator between attachment and relapse potential, and I include a review of literature pertaining to the chosen methods for the study. The review of related literature expands on the background and overview presented in Chapter 1. In this chapter, I explain attachment theory with regard to the way that early relationships contribute to future relationships. This is an important consideration for the current study because of the role attachment style plays in future relationships and how that contributes to the

likelihood of relapse potential among females with prescription pain medication addiction.

Description of Literature Search

The literature that I used in this review was obtained from March 2012 to January 2014. I gathered information from Walden University's library and using the EBSCOhost database system to obtain scholarly and peer-viewed articles. Specifically, the main four databases I used for this research were (a) Academic Search Complete, (b) ERIC, (c) PsycARTICLES, and (d) PsycINFO, in addition to books obtained through the Walden University Library and other relevant Internet websites. The key terms used were *attachment theory, substance abuse, drug use, prescription medication and abuse, opioid abuse, social support, and women.*

Attachment Theory

Attachment theory was originally developed by Bowlby in the 1960s and 1970s and asserts that relationships that occur early in life, such as infant-parent, affect the level of security that an infant will have with future relationships (Reinert & Edwards, 2009). Bowlby's theory suggested that both biological and psychological forces contribute developing attachment bond between parent and child (Bowlby, 1988). Bowlby believed that children who developed secure bonds to their parents and viewed their parents as keeping them safe were more likely to seek support from others for that same safety later in life. Bowlby referred to these bonds as internal working models (IWMs) and proposed that these IWMs are developed throughout the lifespan based on experiences that the individual has had in various relationships throughout the developmental process

(Caspers et al., 2006). Bowlby further discussed that individuals use these internal working models of others in future relationships, thus determining the manner in which they will interact and trust others (Reinert & Edwards, 2009).

Attachment Styles

Attachment theory proposes that the style of attachment developed early in life can indicate how individuals will develop a set of beliefs about both themselves and others in the future (Caspers et al., 2006). Bowlby (1988) proposed several styles of attachment that are formulated at an early age based on the interaction between parent and child (Hardy, 2007). Research has suggested four known styles of attachment, including secure, avoidant, resistant-ambivalent, and disorganized-disoriented (Hardy, 2007). Each of the four is described below.

Secure. Individuals who develop a secure style of attachment often prefer their primarily caregivers and become upset when separated from them but are able to seek some comfort from others (Hardy, 2007). When reunited they tend to react with a more positive behavior and appear to be well adjusted. This security is determined by the manner in which the caregiver responds to the child and the reaction received when that child is injured or sick (Cowan & Cowan, 2007). It can be noted that individuals with secure styles of attachment display more acceptable behaviors and have a greater ability to express thoughts and emotions (Cowan & Cowan, 2007). In addition, research demonstrates that individuals with secure styles of attachment display more positive emotions in adult relationships and appear well adjusted when faced with social challenges.

Avoidant. Avoidant, Resistant-Ambivalent, and Disorganized-Disoriented styles of attachment all refer to insecure styles of attachment (Hardy, 2007). Individuals who develop an avoidant style of attachment often do not seek out attention from caregivers nor do they display a preference of a caregiver compared to a stranger. This style of attachment focuses on the concept of rejection from their parent or caregiver and fear that their needs are not going to be met (Hardy, 2007). These individuals often will accept attention from caregivers as well as other people without displaying the positive behaviors seen from those with secure attachment styles. As adults, avoidant individuals may suffer from difficulties with intimacy as well as developing close relationships with others (Cowan & Cowan, 2007). Bowlby's research suggests that individuals with avoidant attachment may be at an increased risk for developing emotional problems as well as substance abuse problems (Bowlby, 1988; Cowan & Cowan, 2007).

Resistant-Ambivalent. Resistant-Ambivalent attachment refers to those who have increased suspicion in relationships due to inconsistencies with attending to the child's needs on part of the caregiver (Hardy, 2007). Children appear guarded towards caregivers; lacking a strong bond and have a negative view towards both themselves and the world around them (Bowlby, 1988; Cowan & Cowan, 2007). Individuals who possess this type of attachment style often have difficulty maintaining close relationships and may experience increased anxiety relating to reciprocation of emotions towards one another. Those who have a resistant-ambivalent style of attachment also are at increased risk for developing emotional problems in the future and have difficulty coping with life stressors thus resulting in substance use and abuse (Hardy, 2007).

Disorganized-Disoriented. Disorganized-Disoriented attachment can be explained by an individual who demonstrates mixed styles of attachment and does not display one, clear style (Bowlby, 1988). Individuals with this style of attachment tend to have both feelings of assurance as well as fear towards caregivers creating confusion (Hardy, 2007). An individual with this type of attachment may seek out comfort from a caregiver only to shy away when offered that comfort (Hardy, 2007). As adults these individuals have difficulty interacting in relationships due to a history of confusion in regard to past interactions. Disorganized-Disoriented individuals often have a poor self-image and difficulty expressing emotions appropriately, which may lead to destructive behavior (Hardy, 2007).

Research on attachment theory has mainly centered around two areas of study: parent-infant relationships and adult relationships (Dinero, et al., 2011). Since Bowlby proposed that early relationships influence future relationships it can be said that as adults romantic relationships are generally similar to relationships formed early in life (Dinero, et al., 2011). Dinero et al. (2011) examined the parent-child relationship during adolescence and hypothesized about the impact it will have on adult romantic relationships. Their findings suggest that adolescents who had secure attachment to parents during adolescence were more likely to develop secure adult relationships than those with insecure attachment styles. In addition, recent advancements in technology and the field of neuropsychology have made even clearer the primary nature of attachment for human beings. Much like the development of vision for infants or the ability to learn a second language for toddlers, the process of attachment early in life

activates and strengthens certain neural substrates that will shape a person's emotional experiences later in life. Coan, Allen, and McKnight (2006), researched data on asymmetries in prefrontal activity of insecurely attached infants of depressed mothers. This suggests that these infants already evidenced using avoidance as a strategy for affect regulation. Development of these strategies early in life may predict how later in life these individuals will respond to a wide variety of emotional situations (Coan, Allen, & McKnight, 2006).

Other Contributions to Attachment Theory

Many other researchers have contributed to the development of attachment theory. Mary Ainsworth studied under John Bowlby and sought to determine the strength of attachment through separating children from their parents and evaluating their responses to other stimuli in a scenario she referred to as "the strange situation" (Levine & Heller, 2011). This scenario involves separating the infant from their main caregiver and placing them with a foreign individual to assess the infant's reaction. Ainsworth believed that there were three categories that provide information related to an infant's attachment style: proximity maintenance, safe haven, and secure base (Levine & Heller, 2011). Proximity maintenance refers to the closeness that the infant maintains to their caregiver. Safe haven refers to the infant returning to receive comfort from the caregiver. Secure base refers to the caregiver serving as a base so that the infant can feel comfortable to explore new environments. During her research, Ainsworth evaluated how infants responded in the scenario and then measured both the strength of attachment between infant and caregiver finding that infants exhibited either a secure relationship

with the stranger (willing to explore), an anxious relationship (worried/fussing), or an avoidant (indifferent) relationship to the stranger (Levine & Heller, 2011).

Hazan and Shaver (1994) investigated the role which attachment has in adult romantic relationships. They identified that unlike childhood attachments that are one-way, adult attachments are reciprocated and that both parties provide a level of security to each other. In regard to the three categories of attachment developed by Ainsworth (proximity maintenance, safe haven, and secure base), Hazan and Shaver (1994) explain that these categories are maintained in adult attachments as well, only in adult relationships the caregiver role refers to either the peer group or romantic partners. The authors utilized attachment theory to determine how romantic relationships are formed and maintained based on satisfying the need of both individuals. Both Hazan and Shaver and Ainsworth determined that security is at the center of both theoretical models (Hazan & Shaver, 1994; Levine & Heller, 2011). Whereas Bowlby addressed attachment in infants and children, he also suggested that attachments formed in infancy will carry on throughout the lifespan into adulthood (Hazan & Shaver, 1994).

The research conducted by Levine and Heller (2011) and Hazan and Shaver (1994), are consistent with Bowlby's initial research on early attachment styles. Although each theorist applied and modified their theories to explain various attachments as adolescents and adults, they follow the same concept of utilizing an internal working model to establish and maintain attachments throughout life (Levine & Heller, 2011; Hazan & Shaver, 1994; Ma, 2006). Collins and Read (1990) utilized aspects of attachment theory developed by Hazan and Shaver but applied it by developing the AAS

to determine attachment dimensions: secure, avoidant, resistant-ambivalent, or disorganized-disoriented (Ma, 2006). The research contributed by Collins and Read through the use of the AAS is consistent with prior research by Bowlby that individuals who develop secure relationships between infant/caregiver are more likely to demonstrate positive outcomes in future relationships than those who developed insecure relationships (Collins & Read, 1990; Ma, 2006).

Bowlby provided the initial theoretical framework while other researchers contributed to the knowledge base utilizing it to study different populations. Berry, Wearden, and Barrowclough (2007) discussed two dimensions of attachment: attachment anxiety and attachment avoidance. They define attachment anxiety as having a negative self-image along with an excessive need for approval from others (Berry, Wearden, & Barrowclough, 2007). Attachment avoidance is defined as an individual who demonstrates social withdrawal and/or excessive need to be independent and not relying on others (Berry, Wearden, & Barrowclough, 2007).

Fraley, Waller, and Brennan (2000) developed the ECR-R to further contribute to knowledge on adult attachment investigating attachment anxiety and attachment avoidance in regard to attachment security. Their questionnaire has expanded research on dimensions of attachment anxiety and avoidance and measures overall secure attachment (Fraley, Waller, & Brennan, 2000). The present study will utilize existing theory regarding dimensions of attachment including both anxious and avoidant dimensions of attachment and how they relate to relapse potential.

Criticism of Attachment Theory

Although Bowlby's theory of attachment gained a great amount of praise from the research community, the theory was also subject to critique from current research in the field of psychology. Del Guidice and Belsky (2010) explored Bowlby's contribution and addressed some criticism regarding the theory. They proposed that as children develop, their style of attachment also changes as a result of environmental experiences (Del Guidice & Belsky, 2010). Bowlby's theory was highly criticized by those in the psychoanalytic community who focused on main developmental concepts from Sigmund Freud regarding early development of evolutionary drives that relate to human interactions (Slater, 2007). Researchers who followed the psychoanalytic approach to human development believed that Bowlby ignored issues of trauma, separation, and loss relating to caregivers (Slater, 2007). As an understanding of attachment theory has been established it is important to apply the theory to other areas of research specifically substance abuse and gender.

Substance Abuse and Gender Differences

It has been established that there are gender differences that must be considered when treating men and women with substance abuse issues. The National Institute of Alcohol Abuse and Alcoholism reports that of the 15.1 million people with alcohol abuse issues, 40% are women (Bright, Osborne, & Grief, 2011). Bright, Osborne, and Greif (2011) conducted research to identify factors that must be considered to increase treatment success among these two groups. First, the researchers identified contributing factors that lead to substance abuse and dependence. Women often utilize substances to

reduce pain or cope with stressors that are occurring in other areas of their life and can use substances as a coping mechanism to address symptoms of co-occurring disorders, trauma, and to escape social stressors (Bright, Osborne, & Greif, 2011). History suggests that women experience negative stigma associated with substance use and participating in treatment often is more difficult for women than men (Bright, Osborne, & Greif, 2011). The SAMHSA (2009) published an educational pamphlet for treatment providers highlighting specific issues relating to women in treatment including issues of trauma and domestic abuse that occur along with substance abuse. The document contains information related to different groups of women and identifies strategies to better assist women in treatment who come from a variety of social situations including homelessness, domestic violence, and differences in age (younger versus adult women versus the elderly). (SAMHSA, 2009).

McCabe, Teter, and Boyd (2006) investigated the prevalence of prescription medication abuse in a collegiate population. They identified four categories of prescription medications and surveyed male and female college students to determine which substances were most likely used for non-medical purposes. Their results demonstrate that prescription pain medication and stimulant medications are more commonly used for non-medical purposes over anxiety and sleep medications. In addition, the collegiate women in the study were found to be more likely to abuse prescription pain medication than their male counterparts.

An extensive amount of literature is available to address substance use among an adolescent and early adult population but use and abuse among older adults, specifically

women, has received little attention. The Center on Addictions and Substance Abuse (CASA) reports prescription drug misuse is highest among older women (age 60+) (CASA, 2006). In addition, research demonstrates that as people age their ability to tolerate amounts of medication decreases, thus increasing the risk for addiction to form (Koenig & Crisp, 2008). Satre, Blow, Chi, and Weisner (2007) support the need for further research regarding substance abuse treatment outcomes among older adults. They conducted a 7-year research study to assess gender differences and treatment success for those over the age of 55. Their results demonstrate that women have a greater likelihood of maintaining abstinence over time but note that their time enrolled in substance abuse treatment programs is longer than that of men (Satre et al., 2007). They note that this is an area of research where limited literature is available and suggest further research to examine substance abuse treatment success in an older female population.

Substance Abuse in Women

Addiction has been an area of research interest during the past 20 years and continues to be highly researched. The *DSM-IV-TR* (2000) defined substance abuse as “a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances.” Statistics from the National Institute on Drug Abuse (NIDA) (2013) report that as of 2011, an estimated 22.5 million Americans aged 12 years or older had used an illicit drug or abused a psychotherapeutic medication in the past month. The Center for Disease Control and Prevention (CDC) also reports that as of 2011 opioid prescription pain medication overdoses resulted in a greater number of deaths than heroin and cocaine combined (CDC, 2011). In recent years drug

abuse in women has become an area of focus as women continue to develop a more dominant role in society. Bright, Osborne, and Greif (2011) identify that although men are more likely to abuse substances (60% compared to 40% of women) women are more at risk to develop substance abuse related health issues and social problems. Schwartz, Schwartz, O'Grady, Mitchell, Reisinger, Peterson, and Brown (2009) explored gender differences in regard to individuals with opioid addiction that are in and out of treatment programs. The authors found that a greater number of women have more severe drug problems in both settings than compared to men; suggesting a need to develop specialized interventions for women (Schwartz et al., 2009). McHugh and Greenfield (2010) highlight that women are at an increased risk for mood disorders and anxiety therefore giving them an increased risk for substance abuse as a coping mechanism. They add that treatment is needed to address both the substance abuse as well as co-occurring mental health issues in order to develop a successful treatment outcome (McHugh & Greenfield, 2010). A multitude of studies have been conducted researching co-occurring disorders and treatment outcomes with a male population but there continues to be little known research available showing success in a female population (McHugh & Greenfield, 2010).

Lincoln, Liebschutz, Chernoff, Nguyen, and Amaro (2006) developed the Boston Consortium of Services for Families in Recovery (BCSFR) screener, a brief screening tool to identify co-occurring mental health issues among women presenting for substance abuse treatment. The use of such a tool has been found effective in identifying specific psychological issues that can be treated in addition to the substance abuse issues thus

improving chance for treatment success (Lincoln et al., 2006). Their research supports that identification of mental health issues at the time of entrance to substance abuse treatment programming can lead to better outcomes for both prevention of relapse and reduction in mental health related symptoms.

There are specific issues pertaining to women entering treatment for substance abuse including pregnancy and the risk of Fetal Alcohol Syndrome related to the effects of use during gestation. Russell (1994) identified the need for an assessment tool to address these issues in women, the Tolerance, Worried, Eye-Opener, Amnesia, K- Cut down (TWEAK) assessment. The screener is used for screening for at-risk drinkers with the intent to cut down on alcohol use/abuse during pregnancy (Russell, 1994). Brown and Melchior (2008) conducted research to investigate co-occurring mental health disorders and substance abuse in a female population. Specifically, they proposed that women who had longer stays in substance abuse treatment would be more successful in maintaining recovery once they complete the program (Brown & Melchior, 2008). Additionally, their research identified issues specific to women when entering treatment for both substance abuse and other mental health issues including pregnancy and history of trauma (Brown & Melchior, 2008). Results suggest that the longer women remain in treatment, 90 or more days, the greater likelihood of maintaining recovery, reducing unemployment, and lowering risk of incarceration (Brown & Melchior, 2008).

Substance Abuse, Gender Differences, and Social Support

Social support is another crucial factor to investigate in terms of substance abuse in women. Flores (2004) states that insecurely attached adults who desire treatment

for addiction may find the thought of individual therapy overwhelming and frightening, making group therapy or the fellowship of a Twelve-Step program a safer place to begin recovery. Smith and Tonigan (2009) conducted research on the effectiveness of Alcoholics Anonymous (AA) participation on one's degree of attachment anxiety, avoidance, or security. The authors predicted that involvement in AA would be associated with lower levels of avoidant and anxious-ambivalent attachment styles of attachment and higher levels of secure attachment styles. Also, they believed that AA exposure and practices would bring about changes in these attachment styles. Their results suggest that AA involvement leads to a significant increase in ratings of secure attachment and a significant decrease in ratings of anxious and avoidant attachment. Additionally, the results state that social support through AA involvement is related to a greater level of security in close relationships (Smith & Tonigan, 2009).

Lev-Wiesel and Shuval (2006) examined gender differences and social support in adults receiving treatment for opioid addiction. Their research acknowledges that women have a decreased amount of social support than men as typically they experienced greater severity of family and social problems as well as decreased social support when compared to men (Lev-Wiesel & Shuval, 2006). Smith and Rosen (2009) assert that as people age their social support systems often change and as result of relationship difficulties. Additionally, individuals in treatment for substance abuse often exhibit increased anxiety related to stress and have been known to isolate rather than seek out support from others (Smith & Rosen, 2009). Tracy, Munson, Peterson, and Floersch (2010) researched the role which social support has on recovery of substance abuse and

co-occurring disorders in a female population. Their research demonstrates that women are at a disadvantage in terms of positive social support received from primary supports (spouses, significant others) than their male counterparts. They define social support as consisting of three parts: informational, emotional, and concrete support (Tracy et al., 2010). Informational support refers to providing guidance, emotional support refers to providing encouragement, and concrete support refers to providing assistance and help to the individual with the co-occurring disorder (Tracy et al., 2010). Their findings confirm that social support can have both a positive and negative impact on substance abuse outcomes depending on the type of support received (Tracy et al., 2010). Tracy and Johnson (2007) investigated various types of social support that women with co-occurring mental health and substance abuse issues utilize specifically looking at family support versus support from peers. Their results support that women recovering from substance abuse and co-occurring disorders are in need of support both from family and peer groups and that often they have a mix of support including both positive and negative support that can negatively impact recovery success (Tracy & Johnson, 2007).

Smith and Rosen (2009) purport that relationship difficulties often result in increased anxiety and stress related to interpersonal relationships and often result in substance use and/or abuse. Tracey and Johnson (2007) also support the need to examine the role that social support has on both attachment and relapse to advance the current knowledge base. Lev-Wiesel and Shuval (2006) also address the continued need to investigate whether a connection exists regarding social support as a mediator between relationship attachment and relapse potential.

The PRQ was developed to evaluate two types of social support; the scope of social support and perceived social support (Brandt & Weinert, 1987). The tool uses the two-part method to identify the impact of social support on stress and overall wellbeing in various settings. It has been used previously in research pertaining to individuals with a variety of medical conditions as well as occupational stress (Braden, Cuthbert, Brenner, Hawley, Morey, Newman, & Harrison-Felix, 2012; Siying, Jian, Mianzhen, Zhiming, & Huangyuan, 2006). The present study will address the need to investigate the role of social support between attachment and relapse potential.

Substance Abuse and Attachment Style

There is limited literature available examining the relationship between attachment style and substance abuse. Flores (2006) investigated the relationship between attachment theory and substance abuse; noting that the two are intertwined either by attachment being either a cause of or solution to the addiction. Attachment can be a contributing factor to substance abuse and recurrent relapse as often those with addiction have insecure styles of attachment thus causing relapse to occur (Flores, 2006). Conversely, he states that the longer that an individual remains in treatment and works to develop healthy interpersonal relationships the better the opportunity for a positive treatment outcome (Flores, 2006). Thorberg and Lyvers (2006) researched the connection between various types of substance abuse (alcohol, heroin, and cannabis) and attachment styles. Their results identified that individuals who used these substances reported insecure attachment as well as increased fear of intimacy (Thorberg & Lyvers, 2006). Thorberg and Lyvers (2010) also investigated the connection between attachment style,

intimacy, and substance abuse identifying that individuals with illicit substance use have a higher level of difficulty forming and maintaining intimate relationships as result of increased insecurity that includes decreased trust and increased dependence. They identify the need to modify internal working models of insecure attachment developed during childhood to achieve a greater likelihood for success in treatment (Thorberg & Lyvers, 2010). Molnar, Sadava, Decourville, and Perrier (2010) examined the relationship between attachment styles and problem drinking. The authors specifically look at a dual-path model of high-risk drinking, which attributes two motivations to problem drinking: a social component of desiring to fit in and avoid rejection, and an affective component of enhancing positive affect and numbing negative affect (emotional regulation). Because this study looked at a dual-motive to problem drinking, however, its results yielded an interesting conclusion. Among those individuals who had higher scores in avoidance, there was a significant association with lower scores in social motivations behind drinking. Those who scored high in attachment anxiety but low in avoidance, on the other hand, had a significant association with both the social and affective motives to drink. This fits in the attachment theory model, as anxious-ambivalent (preoccupied) attachment style is more concerned about seeking approval and gaining a sense of worth from others.

A review of literature regarding parent-child attachment and substance abuse issues based on early life experiences also identified the role attachment style has on illicit substance abuse. Schindler, Thomasius, Petersen, and Sack (2009) conducted research regarding attachment style to family and three groups of substance abusers

(cannabis, heroin, and ecstasy). The authors discuss the connection between attachment styles to substance abuse disorders (SUD); which links those with insecure types of attachment such as fearful-avoidant at a heightened risk for development of a SUD (Schindler et al., 2009). Specifically the use of heroin and other opioids increased feelings that were similar to that of those with secure attachment styles so the use of these substances increased over time (Schindler et al., 2009). It was hypothesized that opioid users would have higher levels of fearful avoidant attachment and lower levels of secure attachment than those who use either cannabis or ecstasy. The outcomes of this research support the hypothesis that individuals in the heroin group would have the highest levels of fearful attachment and lowest levels of secure attachment (Schindler et al., 2009). Additionally, the authors' support that opioid abuse can be a substitute for social attachments as the abuser develops an emotional and physical addiction to the substance. Without the capacity for both intimacy and autonomy, insecurely attached adults will respond to their difficulty in forming relationships that meet the biological need for emotional management by searching for something else to control their affections (Flores, 2004).

Wedekind, Bandelow, Heitmann, Havemann-Reinecke, Engel, and Huether (2013) identified a relationship between individuals with insecure attachment and increased alcohol abuse using the Relationships-style-questionnaire (RSQ). The authors hypothesized that individuals who abuse alcohol will experience increased levels of anxiety and maladaptive coping patterns that contribute to increased risk of substance abuse (Wedekind et al., 2013). Their findings determined that adults with insecure

attachment styles experience higher levels of insecurity, lack of trust, and poor coping skills when presented with relationship stress thus increasing their risk for alcohol abuse (Wedekind et al., 2013).

Reinert and Edwards (2009) researched attachment in regards to likelihood for an individual to abuse substances later in life. They explored whether physical abuse and victimization during the development of their attachment style would impact their ability to bond with others during college and increase their risk for engaging in at- risk behavior (ie. substance abuse) (Reinert & Edwards, 2009). Their research contributes to the literature by identifying that both men and women who are physically or verbally mistreated as children may have an increased risk for engaging in at- risk behaviors. The results suggest that women are more likely to internalize emotions than men who typically externalize emotions. Both men and women who are victim to physical abuse early in life are at a greater risk for engaging in at- risk behaviors and substance abuse (Reinert & Edwards, 2009). They suggest future research utilizing a larger, more generalizable population to greater support their findings.

Caspers et al. (2006) researched attachment style in a group of adoptees participating in a longitudinal study to determine whether there is a relationship between secure versus insecure attachment styles and illicit substance use. They conducted a logistic regression analysis and their outcome supports a connection between insecure attachment styles and increased illicit substance use (Caspers et al., 2006).

Attachment theory and women have been researched studying the relationship between women with substance abuse issues and attachment to their children, but not

towards support systems including parents, spouses/significant others (Golder et al., 2005). Further research is recommended to identify whether adult romantic attachments will have an impact on recovery success in women receiving outpatient treatment for substance abuse (Golder et al., 2005). Adult women are one group of individuals who have yet to be studied with regard to attachment style and prescription pain medication addiction. (Golder et al., 2005).

Prescription Medication Addiction and Relapse

From the 1990s to the present, the number of individuals abusing prescription medications has escalated from hundreds of thousands to millions, initiating cause for concern (Inciardi, Surratt, Cicero, & Beard, 2009). This rapid increase is cause for concern as a growing number of individuals are utilizing prescription medications for non-prescribed purposes. Brown, Swiggart, Dewey, and Ghulyan (2012) further examined this epidemic and determined three categories of prescription medications most likely to be abused: opiates, sedatives, and stimulants. Of the three categories the researchers determined that opiate medications used to treat pain are the most commonly sought after prescription medication (Brown et al., 2012). Their research supports other studies that have concluded a need to increase education and awareness of risk factors to medical professionals providing prescription medications in order to decrease over-prescription of these medications (Brown et al., 2012).

Inciardi et al. (2009) conducted a rapid research study, a study that prioritizes realistic outcomes over a short period of time through use of focus groups, interviews, and surveys, to determine the extent to which prescription medications were being

diverted, or transferred illegally for illegal use, among various populations (Inciardi et al., 2009). They conducted a qualitative study using focus groups including law enforcement, physicians and other individuals in the healthcare field, as well as drug brokers, and users to obtain a variety of outcome data that is representative of the general population. Results of their research suggest that prescription drug use often leads to more serious substance abuse transitioning from legal, diverted, substances to illegal substances (Inciardi et al., 2009). The authors also recommend increased education and awareness of prescription medication diversion and abuse through increased education to physicians as well as potential clients (Inciardi et al., 2009).

Ward, Patel, Hanlon, Eldakar-Hien, Sherlinks, and Ward (2011) further examined the phenomenon of diversion through research examining prescription medication sharing in an adult population. Their research contributed to the knowledge gap regarding individuals presenting for treatment at medical clinics who have borrowed medications from family or friends. Results indicate that prescription medication borrowing and use occurred within one fifth of their surveyed population and that greater than half of those did so during the past year (Ward et al., 2011). This research further establishes a need to study trends among prescription drug abuse to decrease abuse and prevent relapse.

Prescription pain medications, also known as prescription opiates, are known to be highly effective in reducing and managing chronic severe pain (Pohl & Smith, 2012). It has been demonstrated that although these medications are prescribed to address pain issues, they also possess addictive characteristics. Ling et al. (2011) identify current

clinical issues when working with patients who use these medications and specifically current measures in addressing abuse and dependency from opiate medications. Their research identifies a need for increased education on behalf of physicians and clients in need of pain management and provides suggestions to minimize abuse and dependence of these medications through screening tools administered to patients and increased awareness of the risks of taking these medications (Ling et al.2011). Simoni-Wastila and Strickler (2004) support that women abuse these medications more often than men and that other risk factors such as alcohol use, marital status, and age are important contributing factors. The NIDA-QS was developed as a quick screener to determine appropriate interventions for various types of substance abuse and to determine primary and secondary substances abused (Smith, Schmidt, Allensworth-Davies, & Saitz, 2010). The AWARE Questionnaire was developed in order to identify symptoms of relapse in order to predict both short-term and long-term risk of relapse through identification of warning signs (Harris & Miller, 2000). Maxwell (2011) reports a drastic increase in prescription pain medication abuse and addiction, attributing this increase to several factors including increased marketing strategies, improper prescribing, and even the increase in illegal distribution and use of the medications on the streets. She identifies this problem as a worldwide problem that is impacting society in both the United States as well as other countries around the world (Maxwell, 2011). Pohl and Smith (2012) provide support to the current issue relating to treatment of pain and substance abuse as often pain management utilizes prescription medications. Their research identifies a need

for further education relating to the dangers of prescription pain medications as well as recognizing risk factors in patients presenting for treatment (Pohl & Smith, 2012).

Gender Differences and Prescription Pain Medication Addiction

Gender differences have been examined with regard to prescription pain medication addiction and it has been found that women are more often prescribed these types of medications over men. However, little research is available addressing the rate of abuse with this type of medication between genders (Rienert & Edwards, 2009). Tetrault, Desai, Becker, Feillin, Concato, and Sullivan (2008) examined whether men or women are more likely to abuse prescription opioid medications. Their research identifies that there were similarities between use among both men and women in regard to non-medical opiate abuse during the past year (4.5% women versus 5.2% men) but that women with specific factors such as cigarette smoking, serious mental illness, and those that began using substances over the age of 24 were more likely to use prescription opioids for non-medical reasons (Tetrault et al., 2008). They recommend further research in this area to include other populations such as the homeless and those institutionalized as these were not included in their research (Tetrault et al., 2008). Back, Payne, Wahlquist, Carter, Stroud, Haynes, and Ling (2011) conducted research examining gender differences among opioid users and sought to determine whether women are more likely than men to become dependent. Their research identifies that although women are less likely to present for treatment than men (35% of women enroll in programs) they are at an increased risk for becoming dependent on opioid medications (Back et al., 2011).

Summary

Attachment theory provides a psychological framework to determine how early childhood relationship experiences can be predictive of future relationship outcomes and how these relationships will have either a positive or negative impact on the individual. Bowlby proposed that the internal working models that are developed as children influence the way that as adults they will view the world and others. This theory explains the relationships that people have with support systems and can be a predictor of treatment success and relapse potential for prescription pain medication addiction among women. Relapse potential is the preferred outcome variable as research supports success in treatment by number of relapse episodes or successful recovery (Moos & Moos, 2006). Relapse potential will be evaluated using the AWARE Questionnaire (Harris & Miller, 2000). Further research conducted by Hazan and Shaver (1994) and Collins and Read (1990) support that attachment continues throughout the lifespan only in a different capacity in adults. Fraley, Waller, and Brennan (2000) were interested in studying dimensions of attachment, specifically anxious and avoidant attachments and developed the ECR-R Questionnaire to evaluate the level of insecure attachment.

During the past five years there has been increased interest in the study of prescription pain medication addiction and its relationship to psychology. Research has been conducted looking at various psychological contributing factors to addiction but attachment style has not yet been researched looking at a female population that primarily abuses prescription pain medication. The present research will not address the role that motherhood or victimization has on social support or relapse as the present research focus

is on adult attachment relationships and relapse. There is limited research available to support the relationship between prescription pain medication addiction and attachment in an adult female population.

Most studies pertaining to substance abuse and prescription medication addiction and attachment focus on parent-child attachments and attachment in younger adult relationships. After a thorough search of existing literature, there appears to be no research identifying how attachment style impacts family and other support systems and relapse in women receiving treatment for prescription pain medication addiction. Research conducted by Shivpuri (2006) examined the role that attachment has with substance abuse at a correctional residential treatment center in a male population. Her findings indicate that insecure, fearful styles of attachment are directly related to increased likelihood of substance abuse. It was recommended that research be conducted to include females to determine if these findings transfer between genders (Shivpuri, 2006). Berry, Wearden, and Barrowclough (2007) investigated dimensions of attachment including attachment anxiety and attachment avoidance as they pertain to individuals with psychosis. Tracey and Johnson (2007) support the need to identify whether there is a mediating relationship between attachment and relapse potential. The present study attempts to bridge the empirical gap that exists in the relationship between attachment style and social support on relapse potential for women receiving outpatient treatment for prescription pain medication addiction. Also, the present study seeks to determine whether perceived social support is a mediating factor between attachment and relapse potential.

Chapter 3 will address the methodology of the present research study including a brief review of research design, population and sampling procedures, instrumentation, statistical analysis, threats to validity, and ethical considerations.

Chapter 3: Methodology

The purpose of this study was to quantitatively and nonexperimentally examine the relationship between attachment style and perceived social support on relapse potential in a population of women with prescription pain medication addiction.

Participants who were enrolled in outpatient treatment facilities responded to a series of questionnaires to determine whether social support was a mediating variable between attachment style and relapse potential.

This chapter includes a description of this study's design, sample, instrumentation, data analysis, and ethical considerations. Key components I discuss include an overview of the study's research design and rationale, methodology, threats to validity, and ethical considerations. I also discuss the data collection process and analysis.

Research Design and Rational

In this study, I sought to determine whether a significant relationship exists between adult attachment in women with prescription pain medication addiction and relapse potential. Also, I assessed whether a significant relationship exists between perceived social support for women with prescription medication addiction and relapse potential.

To participate in this quantitative study, participants needed to be enrolled in an outpatient treatment facility for prescription pain medication addiction for a minimum of 2 months and needed to have prescription pain medications as their primary substance abused with a diagnosis of opioid abuse/dependence. They were provided an invitation

letter to participate by their licensed alcohol and drug counselors. Participants needed to have basic understanding of computers and Internet access. Each participant was required to provide consent to participate in the study. After consent was obtained, participants completed a demographic survey, the AWARE Questionnaire, the ECR-R Questionnaire, and the PRQ. To complete all required documentation, participants were expected to spend a maximum of 30 minutes completing necessary documentation.

I used a nonexperimental design, because no variables were manipulated no experimental interventions were provided in this research. A quantitative approach appeared to be most appropriate for this study, because the goal of this research was to collect and analyze statistical data using psychometric instruments (Beckman, Ostergaard, & Rasmussen, 2006). The present study used a quantitative approach to collect and analyze continuous data. A quantitative approach was more appropriate than a qualitative or mixed-methods approach because my study sought to identify relationships between attachment, relapse, and social support. Surveys were the chosen method of data collection as they are easy to administer and data can be collected quickly (Beckman et al., 2006). In addition, an advantage to using surveys is that reliability and validity have been established through research thus increasing the reliability and validity of the present study.

I used a multiple regression analysis and mediational analysis in this study. Multiple regression is used to determine correlational relationships where multiple independent variables are predicted to influence one dependent variable (Gravetter & Wallnau, 2009). I used a mediational analysis, with social support as the mediator

between attachment style and relapse potential, to determine a link between variables (Kenny, 2013). Using a mediation approach was appropriate because I was trying to understand the mechanism through which the predictor variable (attachment) affects the outcome (relapse) (Kenny, 2013; Purmuy, Merino, & Fernandez-Rey, 2010). Other statistical methods were considered for this study but were rejected because I sought to determine correlational relationships between variables.

Population

The participants of this study were a convenience sample of women enrolled in outpatient treatment for prescription pain medication addiction with a primary diagnosis of opioid abuse/dependence. Only women currently who were enrolled in treatment for a minimum of 2 months were eligible for this research study. I used a power analysis to determine the ideal sample size. The analysis revealed that at least 67 participants are required to obtain significant results using the two independent variables: attachment (anxiety or avoidance) and perceived social support (Soper, 2012). At least 67 participants were required to maintain a confidence interval of 95%. Because there were exclusion criteria, limitations for Survey Monkey, and the possibility of missing data, more than 67 participants were needed to obtain the minimum of 67 eligible participants.

The sample size was calculated using an alpha level of .05, a power of .80, and an effect size of medium effect size of .15, which are considered acceptable levels to reduce the likelihood of a Type-I Error (Gravetter & Wallnau, 2009; Soper, 2012). An effect size of .15 is considered a medium effect size as commonly effect sizes of .02, .15, and .35 are considered to be small, medium, and large respectively (Gravetter & Wallnau, 2009;

Soper, 2012). A Type 1 error occurs when the researcher rejects a null hypothesis that is actually true (Gravetter & Wallnau, 2009).

Sampling and Sampling Procedures

This study used a convenience sample of participants as the sampling strategy. Participants were recruited through a privately funded, fee for service organization, Center for Behavioral Health; and were given the option to participate in the proposed research. Center for Behavioral Health is a group of outpatient opioid treatment facilities that consists of 20 clinics in eight states (Arizona, Idaho, Indiana, Iowa, Kentucky, Louisiana, Nevada, and South Carolina) (Center for Behavioral Health, 2013). The organization treats primarily opioid abuse and addiction and a requirement for admission is for patients to have been abusing opioids for at least one year and that they are able to afford treatment either through cash payments or insurance benefits (Center for Behavioral Health, 2013). Participants were identified and recruited by their licensed alcohol and drug counselors at these outpatient treatment centers and were provided an invitation to participate letter that included a website address link to reach the surveys via Survey Monkey. Their licensed alcohol and drug counselors solely provided the invitation letter and any other questions were be directed to the researcher. Selected participants were informed that it was their choice to either participate or decline to participate and this would not influence their treatment as this was optional and voluntary for each participant. The researcher did not have direct involvement in the recruitment process and had no affiliation with Center for Behavioral Health.

Each potential participant was provided an invitation to participate letter that contained an Internet link for SurveyMonkey. The website link directed them to the study that included a brief introduction to the study, informed consent to participate, the procedures for participation, a discussion of confidentiality, the voluntary nature of the study, and any ethical concerns (See appendix A). An e-mail address was provided so that any additional questions regarding participation could be directed to the researcher.

This study sought to determine if attachment style and perceived social support had an impact on relapse potential of individuals receiving treatment for prescription pain medication addiction.

Procedures and Data Collection

Individuals interested in this study were directed to a research website designed exclusively for this study by the researcher available on Survey Monkey. To participate in the study, participants were asked to voluntarily consent via an electronic consent form provided through the website. Participants were asked to select either “agree” or “disagree” to give consent for participation.

Once the consent was received the participant was directed to complete a brief demographic questionnaire and the additional survey questions. The demographic questionnaire will be used to determine the, race, age, marital status, and socioeconomic status (see Appendix B). Participants were informed to contact their treatment facility for assistance if they experienced mild anxiety or distress related to the urge to abuse their medications. This study did not require any other follow-up procedures and a debriefing page was included at the end of the survey (see Appendix F). Participants were assigned

an identification number that correlated to their responses and although personal information was collected, no identifying information was required to preserve confidentiality.

Instrumentation

The AWARE Questionnaire

The AWARE Questionnaire was designed by Gorski and Miller (1982) and revised in 2000 by Harris and Miller to measure warning signs of relapse potential and includes statements such as... “I feel nervous or unsure of my ability to stay sober”; “I tend to overreact or act impulsively”; “I feel like things are so bad that I might as well use”; and “I am doing things to stay sober.” (Harris & Miller, 2000). The AWARE Questionnaire is a 28-item Likert type scale rated on a 7-point system with scores ranging from 1 (Never) to 7 (Always). The assessment is scored to determine a total score where higher scores indicate a greater potential of relapse (Harris & Miller, 2000). The AWARE Questionnaire has been evaluated to show strong internal consistency (Cronbach's alpha: 0.92-0.93) as well as test-retest stability across 2-month intervals estimated reliability at $r = 0.80$ (Harris & Miller, 2000).

The AWARE Questionnaire was the appropriate instrument for this study as it measures the occurrence of relapse through rating of warning signs. Kelly, Hoepfner, Urbanoski, and Slaymaker (2012) supported that the AWARE Questionnaire successfully predicts relapse over both short-term (30 days) and long-term (6 months or more) periods. This study sought to determine if a relationship existed between attachment style in women with prescription pain medication addiction and relapse potential. Harris and

Miller (2000) disclosed that the total score on the AWARE Questionnaire was the best predictor of impending relapse. This assessment tool is not copyrighted and the researcher has permission to use. A copy of the AWARE Questionnaire is available in Appendix C.

The ECR-R Questionnaire

The ECR-R Questionnaire was designed by Fraley, Waller, and Brennan (2000) to assess individual differences with respect to attachment-related anxiety and attachment-related avoidance. The ECR-R consists of 36 items that are answered using a 7-point Likert type scale where 1 = Strongly Disagree and 7 = Strongly Agree. To obtain a score for attachment-related anxiety, a person's responses to Items 1 through 18 were summed with a higher total score representing increased anxiety (Fraley et al., 2000). To obtain a score for attachment-related avoidance, a person's responses to Items 19 through 36 were summed with a higher total score representing increased avoidance (Fraley et al., 2000). The ECR-R took approximately 5 minutes to complete. Internal consistency reliability tends to be .90 or higher for the ECR-R (Sibley & Lew, 2004). This study sought to determine if there was a significant relationship between dimensions of attachment anxiety and avoidance and relapse potential in women in treatment. A copy of the ECR-R is available in Appendix D.

The PRQ

The PRQ was developed to evaluate two types of social support; the scope of social support and perceived social support (Brandt & Weinert, 1987). The assessment allows for both parts to be administered together or the two scales can be utilized

independently of each other. The PRQ Part 2 was utilized for the current study. The PRQ part 2 consists of 25 items presented on a Likert-type scale where 1 = strongly disagree and 7 = strongly agree. The PRQ was scored by obtaining a total score where higher scores indicate a higher level of perceived social support. The PRQ Part 2 took approximately 5 minutes to administer. Test-retest reliability was determined using *Cronbach's* alpha reliability with a range from .85 to .93 (Brandt & Weinert, 1987). Construct validity was determined comparing it to Eysenck's Extroversion scale with a positive correlation ($r = .32$) (Brandt & Wienert, 1987). The PRQ was the appropriate instrument for this study as it sought to determine perceived social support yielding a total score. This study sought to investigate the relationship between perceived social supports and relapse potential. A copy of the PRQ is available in Appendix E.

Data Analysis

This study included multiple variables for analysis. The independent variables in this study included attachment-avoidance, attachment-anxiety, and perceived social support. The dependent variable in this study was relapse potential. The level of attachment anxiety and avoidance was determined using the ECR-R. Perceived social support was measured using the PRQ. Relapse was measured using the AWARE Questionnaire.

The AWARE Questionnaire and PRQ were hand scored and the ECR-R was scored using an excel spreadsheet provided by the assessment's developer. The data were entered into the Statistical Package for Social Sciences (SPSS) Version 10. SPSS was used for data analysis. I first used a multiple regression analysis to determine

relationships between multiple predictor variables and one criterion variable (Gravetter & Wallnau, 2009). The data was analyzed using a multiple regression analysis to seek whether a positive relationship existed between attachment dimensions and relapse potential and was used to determine whether a relationship existed between social support and relapse potential (Gravetter & Wallnau, 2009). Last, a mediation analysis, with social support as the mediator between attachment dimensions and relapse potential, was used to examine whether social support had either a direct or indirect effect or both on attachment style and relapse potential.

Research Questions and Hypotheses

Research Question (RQ) 1. Does a relationship exist between attachment anxiety or avoidance and relapse potential in women with primary drug dependence on prescription pain medications? Attachment anxiety or avoidance will be measured using the ECR-R and relapse potential will be measured using the AWARE Questionnaire.

H_{01} . There is no significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

H_{a1} . There is a significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

RQ2. Does a relationship exist between perceived social support and relapse potential in women with primary drug dependence on prescription pain medications? Perceived social support will be measured using the PRQ and relapse potential will be measured using the AWARE Questionnaire.

H_{02} . There is no significant relationship between perceived social support and relapse potential.

H_{a2} . There is a significant relationship between perceived social support and relapse potential.

RQ3. Is there a significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator in women with primary drug dependence on prescription pain medications?

H_{03} . There is no significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

H_{a3} . There is significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

Ethical Considerations

Careful consideration was taken to identify possible effects and impact on the lives of the participants who consented to participate. These included informed consent and participant protection. Participants were recruited by their licensed alcohol and drug counselors at outpatient opiate treatment facilities across eight states and were given the option to participate. Their counselors identified potential participants as women who had a primary diagnosis of prescription pain medication addiction, opioid abuse/dependence, and that had been participating in treatment for a minimum of two months. This did not influence their therapeutic relationship with their substance abuse counselor as participation was optional and information regarding participants was not be shared with the treatment facilities or counselors.

The present study sought to determine relationships and interactions between attachment style and perceived social support on relapse potential for women with prescription pain medication addiction. The results of the present research did not impact participant functioning directly and was designed only to contribute in better understanding of relapse and contributing to current knowledge in the field of psychology.

Informed consent was provided to all potential participants and outlined the purpose for the research, procedures for participation, participant confidentiality, information related to the voluntary nature of the study, possible risks and benefits, and contact information for the researcher and their chair in the event that additional questions arise in regard to the study. Deception was not be used in the present study and participants were informed of the purposes for the study. Participants were aware that information shared in the questionnaires was kept confidential and was used to contribute to current knowledge in the field of psychology. The informed consent explained that participants were free to withdraw without penalty at any time during the data collection if they became uncomfortable. This study did not have any physical risks or benefits for the participants and had minimal risk for psychological distress. Informed consent was electronically obtained by the participant selecting either “yes” or “no” when prompted on the website indicating that the participant understood the informed consent. By taking necessary steps including use of informed consent and a statement of confidentiality, participant information was kept confidential and participants only participated knowing any risks involved in the present study.

To decrease the potential for emotional response on behalf of participants all questions were phrased as objectively or neutral as possible as printed in the assessments utilized. To minimize any potential risks, the licensed alcohol and drug counselors selected possible participants as patients who had a primary diagnosis of prescription pain medication addiction (opioid abuse/dependence) and those who had been participating in treatment for a minimum of 2 months. Those who had been in treatment for this amount of time typically had established rapport with their counselors and were at increased likelihood of asking for help, if necessary. Participants remained anonymous through assignment of an identification number to each set of responses and no identifying information was collected for participants. Each participant that chose to participate completed a numbered participant packet via the Internet that only this researcher had access to through the website that the survey was posted. As measures were taken to resolve any ethical considerations regarding informed consent, participant protection also was addressed. There was no risk of physical harm in the present study but the nature of the research left potential for emotional response from participants including possible anxiety, guilt, or regret. It should be noted that the researcher did not provide treatment but could provide referrals if needed. If participants experienced any emotional responses from participating in the proposed research they were referred by the researcher to contact their licensed alcohol and drug counselors for further treatment as needed as explained in the consent form.

To collect data from participants, approval was obtained from Walden University's Institutional Review Board (IRB) (10-06-14-0154810). The survey was

posted via SurveyMonkey on a web server and participants were provided with an invitation letter containing a link to participate. They completed the consent form and then the surveys. In addition, data will be stored on a password protected USB flash drive as well as locked in a file cabinet and destroyed after 7 years.

Summary

This chapter presented and discussed research methods for the present quantitative non-experimental study that examined the relationship between prescription pain medication addiction and attachment style in adult women who were participants in outpatient treatment facilities specifically exploring how attachment style and perceived social support impacts relapse potential. The chapter provided a detailed description of the study's research design, sampling procedures, instrumentation, data analysis plans, and possible ethical considerations. Reliability and validity were discussed for the present study as well as for each instrument that was used. Special attention was given to ethical issues for this research and protection of participant information. The following chapter will review results of the data and statistical outcomes of the present study.

Chapter 4: Results

Introduction

The purpose of this study, using a quantitative research design, was to examine the relationships between insecure dimensions of attachment (anxiety or avoidance), perceived social support, and relapse potential. I hypothesized that perceived social support would be a mediating factor between insecure attachment (anxiety or avoidance) and relapse potential. I sought to answer whether a relationship exists between dimensions of insecure attachment and relapse and whether a relationship exists between perceived social support and relapse. I used a third research question to answer whether perceived social support has a mediating effect between insecure attachment and relapse. I collected data from an online website, SurveyMonkey, that consisted of a demographic survey (Wong, 2014), the AWARE Questionnaire (Miller & Harris, 2000), the ECR-R (Fraley et al. 2000), and the PRQ (Brandt & Weinert, 1987). In this chapter, I present the results of data collected from October 7, 2014 through March 10, 2015. This chapter includes descriptive statistics for the participants, such as age, ethnicity, educational background, socioeconomic status, marital status, and number of dependents. It also includes the results of statistical analyses described in Chapter 3.

Data Collection

I collected data for 6 months from October 7, 2014 through March 10, 2015. A total of 73 female respondents during the 6-month time frame responded to the survey. All participants were enrolled in outpatient treatment for prescription pain medication opioid addiction and were participating in treatment for at least 2 months. Since data was

collected from the target population, the data were representative of the population surveyed. Due to missing data, four respondents were screened out for a total of 69 respondents who completed the survey instruments successfully.

Results

Descriptive Statistics

Table 1 displays all demographic characteristics of the sample. Of the 69 women who responded, 32.86% were between the ages of 18 and 25 years, 30% were between the ages of 26 and 35 years, 24.29% were between the ages of 36 and 50 years, 5.71% were between the ages of 51 and 60 years, and 7.14% were 61 years and older. The majority of the participants were Hispanic (47.14%) with White representing 42.86%, Black representing 5.71%, Asian representing 2.86%, and Native Hawaiian/Other Pacific Islander representing 1.43%. The majority of the sample had a high school diploma/General Education Diploma (GED) (54.29%). Most made an average salary, \$40,000 to \$59,000 (37.14%). The majority of the respondents reported being married/in a relationship (45.71%) and 32.86% of respondents reported having one dependent.

Table 1

Demographic Characteristics of the Study Sample (N = 69)

Characteristics	<i>n</i>	%
Age, years		
18 – 25	32	32.83
26 – 35	21	30.0
36 – 50	17	24.29
51 – 60	4	5.71
61+	5	7.14
Race/ethnicity		
Native Hawaiian/Other Pacific Islander	1	1.43
Black or African American	4	5.71
Hispanic or Latino	33	47.41
White	30	42.86
Asian	2	2.86
Educational background		
High School/GED	38	54.29
College graduate	23	32.86
Master's degree	9	12.86
Socioeconomic status		
\$0 – 20,999	12	17.14
\$21,000 – 39,999	24	34.29
\$40,000 – 59,000	26	37.14
\$60,000 – 79,000	4	5.71
\$80,000 – 99,999	0	0
\$100,000+	4	5.71
Marital status		
Single/never married	26	37.14
Married/in a relationship	32	45.71
Divorced	10	14.29
Widowed	2	2.86
Dependents		
0	26	37.14
1	23	32.86
2	16	22.86
3+	5	7.14

The means and standard deviations of four variables (attachment anxiety, attachment avoidance, social support, and relapse) are presented in Table 2. Statistical significance tests are subsequently presented.

Table 2

Means, and Standard Deviations for the Research Variables (N = 69)

Scale	<i>M</i>	<i>SD</i>
ECR-R attachment anxiety	60.69	18.40
ECR-R attachment avoidance	79.02	7.59
PRQ social support	82.86	12.60
AWARE relapse	85.88	10.95

Assumptions

A preliminary check of statistical assumptions tested for the four variables (attachment anxiety, attachment avoidance, social support, and relapse) prior to conducting the multiple regression analyses. These assumptions assess outliers, collinearity of data, independent errors, random normal distribution of errors, homoscedasticity and linearity of data, and nonzero variances. An analysis of standard residuals was carried out, which showed that the data contained no outliers (Standard Residual Minimum = -2.333, Standard Residual Maximum = 2.125). Outliers are determined to be data where the minimum value is equal or below -3.29, or the maximum value is equal or above 3.29 (Field, 2005). See Figure 1.

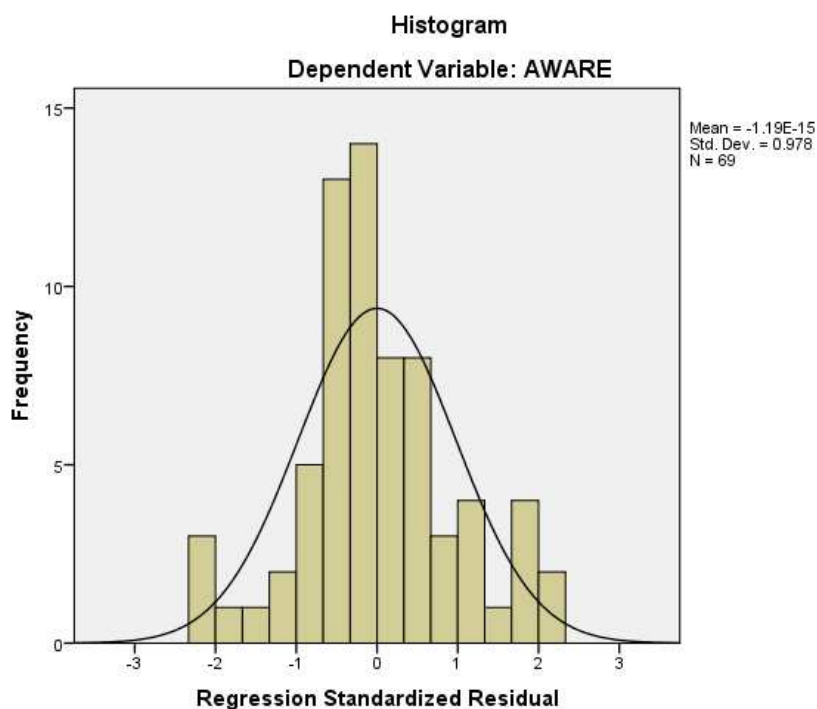


Figure 1. Histogram of frequency and regression standardized residual.

Collinearity was evaluated by reviewing the variance inflation factor (VIF) and tolerance and scores. If the VIF value is greater than 10, or the tolerance is less than 0.1, there are concerns of multicollinearity (Field, 2005). Tests to see whether the data met the assumption of collinearity indicated that multicollinearity was not a concern (attachment anxiety, tolerance = .44, VIF = 2.23; attachment avoidance, tolerance = .61, VIF = 1.63; social support = tolerance = .47, VIF = 2.12).

The Durbin-Watson value was calculated to meet the assumption of independent errors. This value can be anywhere between 0 and 4; however, a value as close to 2 is needed meet the assumption of independent errors. The data met the assumption of independent errors (Durbin-Watson value = 1.66). The histogram of standardized

residuals indicated that the data contained approximately normally distributed errors, as did the normal P-P plot of standardized residuals, which showed points that were not completely on the line but close meaning that the data did not greatly deviate from the line (see Figure 2).

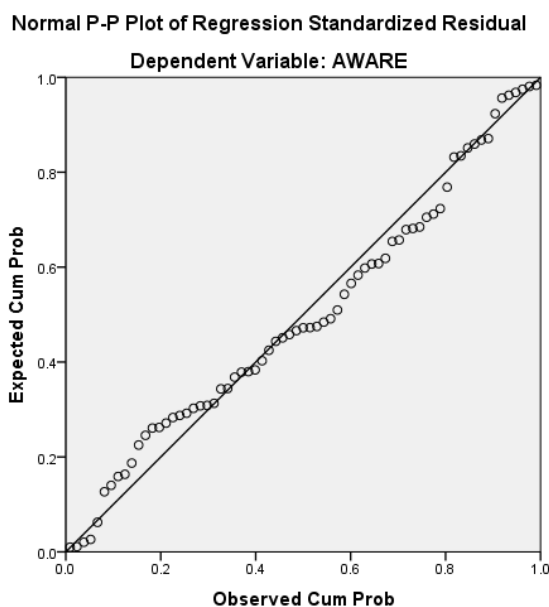


Figure 2. Normal P-P Plot to assess for normality.

The scatterplot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity. See Figure 3. The data also met the assumption of non-zero variances (Relapse, Variance = 119.98; Attachment Anxiety, Variance = 338.59; Attachment Avoidance, Variance = 57.70; Social Support, Variance = 158.76). In order to meet the assumption of non-zero variances the value for each variable must be greater than zero (Field, 2005).

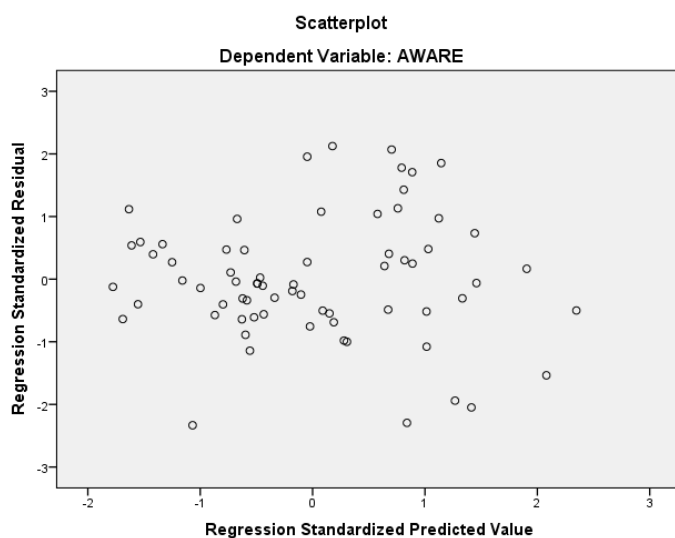


Figure 3. Residuals scatterplot to assess for homoscedasticity.

Mediation analyses have a few sets of assumptions; the first set of assumptions, while not testable, are important to consider while building the mediation models (Hayes, 2013). Through a search of the literature it was determined that there are no testable assumptions for mediation analysis (Kenny, 2014). There are several conditions that are implicitly assumed that the model is being run correctly including that all covariates are included. Untestable assumptions for the mediation analysis are as follows: Condition 1: No omitted variables of the attachment (anxiety or avoidance) and relapse relationship exist; that is, any variable that causes both attachment (anxiety or avoidance) and relapse must be included in the model. Condition 2: No omitted variables of the social support and relapse relationship exist. Condition 3: No omitted variables of the attachment (anxiety or avoidance) and social support relationship exist. Condition 4: Variable attachment (anxiety or avoidance) must not cause any confounder of the social support and relapse relationship (Kenny, 2014).

Research Questions 1 and 2

RQ1. Does a relationship exist between attachment anxiety or avoidance and relapse potential in women with primary drug dependence on prescription pain medications? Attachment anxiety or avoidance will be measured using the ECR-R and relapse potential will be measured using the AWARE Questionnaire.

H_{01} . There is no significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

H_{a1} . There is a significant relationship between attachment anxiety or avoidance and relapse potential in women in treatment.

RQ2. Does a relationship exist between perceived social support and relapse potential in women with primary drug dependence on prescription pain medications? Perceived social support will be measured using the PRQ and relapse potential will be measured using the AWARE Questionnaire.

H_{02} . There is no significant relationship between perceived social support and relapse potential.

H_{a2} . There is a significant relationship between perceived social support and relapse potential.

A multiple linear regression analysis was completed to test hypotheses one and two and to determine whether a relationship existed between the two independent variables, attachment dimension (attachment anxiety and attachment avoidance), perceived social support, and the dependent variable, relapse. Correlations from the model indicate that there is some correlation between the independent variables,

attachment anxiety and perceived social support ($p = -.706$) suggesting that the variables are negatively associated with each other (Table 3). The coefficient of determination (R^2) was 0.367 (Table 4) which indicates that 36.7% of the variability in the likelihood of relapse was accounted for by the independent variables, attachment anxiety, attachment avoidance, and perceived social support.

Table 3

Correlations Among Major Study Variables (N = 69)

	Attachment anxiety	Attachment avoidance	Social support	Relapse
Attachment anxiety	1.00			
Attachment avoidance	-.588*	1.00		
Social support	-.706*	.558*	1.00	
Relapse	.557*	-.440*	-.550*	1.00

* $p < .05$

Table 4

Coefficients for the Multiple Regression Analysis

Model	R	R ²	Adjusted R ²	SE of Estimate
1	.606	.367	.338	8.91

To determine significant relationships in the multiple regression the Beta coefficient (β) is used to determine the relationship between the independent variables and the dependent variable (Field, 2005). The multiple regression analysis did not find any of the individual independent variables to have a significant relationship with the

dependent variable, relapse. Attachment Anxiety did not have a statistically significant positive correlation with relapse potential ($\beta = .293, p = .052$) indicating that level of attachment anxiety was not associated with the risk for relapse. Attachment Avoidance also did not have a statistically significant correlation with relapse ($\beta = -.110, p = .385$). Perceived social support of women with prescription pain medication addiction did not have a statistically significant relationship with their relapse potential ($\beta = -.282, p = .054$). These regression coefficients are presented in Table 5.

Table 5

Regression Summaries for the Relationships Between Attachment Dimensions, Perceived Social Support, and Relapse

Model	Unstd. coefficients		Std. coefficients		
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Attachment Anxiety	.174	.088	.293	1.98	.052
Attachment Avoidance	-.159	.182	-.110	-.874	.385
Perceived Social Support	-.245	.125	-.282	-1.96	.054

Dependent Variable: Relapse

The multiple linear regression analysis revealed that as a whole the model is significant in showing that when combined, the three independent variables do result in a significant effect. The model proved significant as result of the overlap that these variables had on the dependent variable. This overlap is explained through the significant R^2 and the insignificant Beta coefficients, meaning that the variables may be measures of the same thing and both predict the dependent variable, relapse. Although none of the

individual variables indicated significance, the independent variables of attachment anxiety and perceived social support had p values approaching significance while attachment avoidance did not appear to contribute to the model. In the model, the R^2 is significant and the β values are insignificant because one independent variable, attachment avoidance, was not contributing unique variance but was correlated with the other variables thus reducing their unique variance. As a result, it was decided to conduct a second multiple linear regression model while excluding the independent variable, attachment avoidance.

A second multiple linear regression analysis was completed to determine whether a relationship existed between the two independent variables, attachment anxiety and perceived social support, and the dependent variable, relapse without inclusion of the independent variable, attachment avoidance. With the exclusion of the variable attachment avoidance, the coefficient of determination (R^2) was 0.359 (Table 6) which indicates that 35.9% of the variability in the likelihood of relapse was accounted for by the independent variables, attachment anxiety and perceived social support.

Table 6

Coefficients for the Second Multiple Regression Analysis

Model	R	R^2	Adjusted R^2	SE of Estimate
1	.600	.359	.340	8.89

In order to determine significant relationships in the multiple regression the Beta coefficient (β) is used to determine the relationship between the independent variables

and the dependent variable (Field, 2005). The second multiple regression analysis did find that both independent variables, attachment anxiety and perceived social support, had a significant relationship with the dependent variable, relapse. Attachment Anxiety did have a statistically significant positive relationship with relapse potential ($\beta = .336, p = .019$), meaning that as the level of attachment anxiety increases so does the risk for relapse. Additionally, perceived social support had a statistically significant negative relationship with relapse potential ($\beta = -.314, p = .028$) indicating that an increase in perceived social support would result in a decrease in relapse potential. These regression coefficients are presented in Table 7.

Table 7

Second Regression Summaries for the Relationships Between Attachment Anxiety, Perceived Social Support, and Relapse

Model	Unstd. coefficients		Std. coefficients		
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Attachment Anxiety	.200	.083	.336	2.41	.019
Perceived Social Support	-.273	.121	-.314	-2.25	.028

Dependent Variable: Relapse

The second multiple linear regression analysis revealed that as a whole the model is significant in showing that when combined, the two independent variables do result in a significant effect. The outcome of the second multiple linear regression also identified that both independent variables, attachment anxiety and perceived social support are statistically significant and that they both contribute to the dependent variable, relapse,

when the other variable was accounted for. Results identified a significant positive relationship between attachment anxiety and relapse indicating that increased levels of attachment anxiety would result in a greater likelihood for relapse. A significant negative relationship was identified between perceived social support and relapse, indicating that the higher the level of perceived social support the decreased potential for relapse.

Research Question 3

RQ3. Is there a significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator in women with primary drug dependence on prescription pain medications?

H_{03} . There is no significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

H_{a3} . There is significant link between attachment anxiety or avoidance and relapse potential where perceived social support is the mediator.

A mediation analysis was the chosen statistical method used in order to understand the mechanisms through which the independent variable affects the dependent variable; specifically, to understand whether the independent variable, attachment anxiety, would have an effect on the dependent variable, relapse, through the mediating variable, social support. Results of the multiple regression analysis suggested a relationship between the two independent variables, attachment anxiety and perceived social support.

The present study sought to determine whether significant relationships continue to exist between the independent variable, attachment anxiety, and the dependent

variable, relapse, through the mediating variable, social support. Mediation uses an $X \rightarrow M \rightarrow Y$ model, where X = attachment anxiety, M = perceived social support, and Y = relapse, to test for direct and indirect effects. Mediation examines four pathways (a , b , c , and c') (Kenny, 2014). The total effect is $X \rightarrow Y$ (path c) and the direct effect is the $X \rightarrow Y$ relationship by way of M (path c') (Kenny, 2014). Mediation in this study consists of four separate pathways: path a (attachment \rightarrow social support), path b (social support \rightarrow relapse), path c (attachment \rightarrow relapse), and path c' (attachment \rightarrow social support \rightarrow relapse) (Kenny, 2014). Per Kenny (2014), path c is the total effect, path c' is the direct effect, and $a*b$ is the indirect effect. The total effect is calculated by the formula: $c = c' + ab$ (Kenny, 2014). The four pathways though Baron and Kenny do not provide a standard error for the indirect effect, therefore a bootstrapping method was used to obtain a standard error for the indirect effect as Baron and Kenny's model (1986) was based solely on p-values. Bootstrapping is a method of resampling that obtains a standard error for the indirect effect (Hayes, 2013).

Mediation analyses (Hayes, 2013) were conducted using 5,000 bootstrapping resamples (Baron & Kenny, 1986; Preacher & Hayes, 2004) to access each component of the proposed mediation model. The effects of attachment anxiety on relapse potential through mediating effect of social support were tested in a path model on 69 women with primary drug dependence on prescription pain medications (see Figure 4), (Baron & Kenny, 1986; Hays, 2013). Table 8 presents the coefficients of model 1. The model examined each of the four pathways to determine relationships.

Supporting hypothesis 3, attachment anxiety is negatively associated with social support ($a = -.483, p < .001$). That means that the higher the level of attachment anxiety the lower level of social support. Social support also negatively predicted relapse while controlling for attachment anxiety ($b = -.273, p = .028$). This suggests that the higher level of social support there is a decreased risk for relapse. The c path, or the total effect, of attachment anxiety on relapse, was also significant confirming that higher levels of attachment anxiety are associated with higher levels or relapse potential ($c = .332, p < .001$). The c' path, or direct effect, was statistically significant indicating that by way of social support the relationship between attachment anxiety and relapse continues to be statistically significant ($c' = .200, p = .019$). The c' path demonstrates the mediating effect as it takes into account the mediating variable, perceived social support; complete mediation is indicated when the value of c' is zero. The c path, also referred to as the total effect, indicates that the sum of direct and indirect effects of attachment anxiety on the outcome relapse is at a statistically significant level. As both c and c' are significant it can be concluded that some of the direct effect continues to exist even above and beyond the indirect effect of social support therefore partial mediation is accounted for. Partial mediation occurs when the $X \rightarrow Y$ path continues to exist even with the introduction of the mediating variable, M and that the mediating variable accounts for some but not all of the relationship between $X \rightarrow Y$ (Kenny, 2014). Outcomes of the mediation analysis support that women who rate higher in levels of attachment anxiety will have an increased risk for relapse even when that relationship is mediated by perceived social support. When the mediator, perceived social support, was introduced into the attachment

anxiety and relapse relationship, there was a decrease in risk for relapse but those women with greater levels of attachment anxiety continued to be at a higher risk for relapse.

As the Baron and Kenny (1986) model concluded that there is a partial mediation between the three variables another test was conducted in order to identify the significance of the indirect effect. Partial mediation in this case means that perceived social support, the mediator, accounts for some, but not all, of the relationship between attachment anxiety and relapse. In order to determine the standard error which is needed to test the significance of the indirect effect ($a*b$), a 95% bootstrap confidence interval for the indirect effect of attachment anxiety ($a*b$) on relapse was calculated by using the formula, $a*b = c - c'$ (Kenny, 2014). The value of ($a*b = .132$) with a confidence interval ranging from .041 to .239, indicates there was evidence of an indirect effect of attachment anxiety on relapse through the influence of social support.

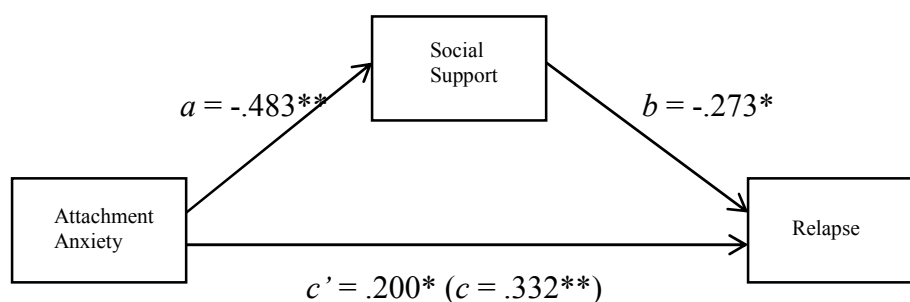


Figure 4. Path diagram showing social support as a mediator of the effect of attachment anxiety on relapse ($*p < .05$; $**p < .001$). The value outside parentheses is the effect of attachment anxiety on relapse after taking into account the effect of social support.

Table 8.

Coefficients for Mediation Analysis Model.

		Consequent						
		<i>M</i> (Social support)			<i>Y</i> (Relapse)			
		Coeff.	<i>SE</i>	<i>p</i>	Coeff.	<i>SE</i>	<i>p</i>	
<i>X</i> (Attach anxiety)	<i>a</i>	-.483	.059	< .001	<i>c'</i>	.200	.083	.019
<i>M</i> (Social support)	--	--	--		<i>b</i>	-.273	.121	.028

Summary

The present study consisted of responses from 69 women currently enrolled in outpatient treatment for prescription pain medication addiction for at least two months. Participants completed a demographic survey (Wong, 2014), the AWARE Questionnaire (Miller & Harris, 2000), the ECR-R (Fraley et al., 2000), and the PRQ (Brandt & Weinert, 1987).

A multiple regression analysis was conducted to identify whether significant relationships existed between independent variables; attachment dimension (anxious and avoidant) and perceived social support on the dependent variable relapse. The multiple regression model as a whole indicated a significant result indicating that attachment anxiety, attachment avoidance, and perceived social support combined correlated to relapse. Individually, none of the independent variables in this model resulted in a

significant relationship therefore a second multiple linear regression analysis was conducted excluding the independent variable, attachment avoidance, as results from the first multiple regression model did not indicate that attachment avoidance was contributing to the model. Results of the second multiple linear regression identified a significant relationship between both independent variables, attachment anxiety and perceived social support, and the dependent variable, relapse. For research question one the null hypothesis is retained as attachment avoidance did not have a statistically significant relationship with relapse even though attachment anxiety did have a statistically significant relationship in the second multiple regression model. The null hypothesis for RQ2 is rejected as a significant relationship was identified between perceived social support and relapse.

To address the third research question, a mediation analysis was conducted to determine whether the mediating variable (perceived social support) would change the relationship between the attachment anxiety and relapse. Results of the mediation model for attachment anxiety indicated that all four paths produced statistically significant outcomes. Specifically, the total effect (relationship between attachment anxiety and relapse) yielded a significant result as did the direct effect (relationship between attachment anxiety and relapse by way of social support). As both the total effect and direct effect proved significant, an additional test was conducted using a bootstrapping method to determine the standard error needed to test the significance of the indirect effect between the variables. Results of the bootstrapping confirm evidence of an indirect effect of attachment anxiety on relapse through the influence of social support. Therefore

the null hypothesis for research question 3 is rejected. The results show that in both the $X \rightarrow Y$ path and the $X \rightarrow M \rightarrow Y$ relationship women continue to be at an increased risk for relapse. By way of perceived social support the risk for relapse is smaller but still is significant. This means that even when women have higher levels of perceived social support they are still at a greater risk for relapse as result of the higher level of attachment anxiety although the likelihood is reduced. Chapter Five discusses the findings of this study as well as limitations, social change implications, and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter is arranged into six sections. In the first section, the introduction, I describe an overview regarding the purpose of the research, a review of the research questions and hypotheses, and a brief summary of the results. In the second section, I provide an interpretation of the findings in the context of the literature review and theoretical framework. In the third section, I discuss limitations to the study. In the fourth section, I identify recommendations for future research. In the fifth section, I address social change implications. In the sixth section, I provide concluding statements of the present study.

Overview of Research

It has been documented that prescription pain medication overuse and addiction are a growing trend in the United States and has drawn national attention in recent years. Past research has demonstrated a connection between substance abuse and those with insecure attachment styles (Shivpuri, 2006; Thorberg & Lyvers, 2006; Wedekind et al., 2013). Research has also documented many contributing factors to addiction in addition to physical dependency including psychological and social factors (Karow et al., 2008).

The present study used attachment theory developed by Bowlby to address prescription pain medication and relapse in terms of the role that insecure styles of attachment (anxiety or avoidance) have on relapse. Attachment theory suggests that early relationships in life influence future relationships and those individuals will develop these future relationships based on their past experiences. Attachment theory had been

previously researched as a component of other types of substance abuse but never with prescription pain medication and a female population (Golder et al., 2005).

Research has demonstrated that attachment styles are formed in early childhood and often remain the same with time, even with other significant relationships. Although a relationship has been documented between style of attachment and relapse, other factors also influence likelihood of relapse, specifically perceived social support. Lev-Wiesel and Shuval (2006) acknowledged that women have a decreased amount of social support than men do, because as typically women experienced greater severity of family and social problems that often contribute to increased risk for substance abuse. Also, Smith and Tonigan (2009) identified that social support through AA group involvement is related to a greater level of security in close relationships, thus decreasing the risk for relapse. Smith and Rosen (2009) concluded that relationship difficulties often result in increased anxiety and stress related to interpersonal relationships and often result in substance use and/or abuse. Outcomes of research by Tracey and Johnson (2007) supported the need to examine the role that both attachment style and perceived social support have on relapse to advance the current knowledge base. Although many factors contribute to likelihood of relapse, the present study aimed to investigate relationships between attachment dimensions (attachment anxiety and attachment avoidance), perceived social support, and relapse potential.

Previous research has identified that both attachment style and perceived social support are factors that influence risk for relapse. Based on attachment theory by Bowlby, attachment styles are developed early on in life and predict future relationships (Thorberg

& Lyvers, 2010). Perceived social support was defined by Tracy, Munson, Peterson, and Floersch (2010) as “verbal or nonverbal information or advice, tangible aid or action provided by social network members or inferred by their presence, which has beneficial emotional or behavioral effects on the recipient.” (p. 259). Since attachment is developed first it made sense to use perceived social support as a mediator since it is later developed but also documented to have an impact on relapse potential (Tracy & Johnson, 2007). It was hypothesized that perceived social support would be a mediating factor between insecure attachment (anxiety or avoidance) and relapse potential.

Research Questions and Hypotheses

Current research to date has not tested the relationship between attachment style and perceived social support on relapse potential in an adult female population in treatment for prescription pain medication addiction. This dissertation attempted to address the need for additional research on this topic. The present study consisted of three research questions. The first two questions examined whether significant relationships exist between dimensions of insecure attachment (anxiety or avoidance) and relapse, and whether a significant relationship exists between perceived social support and relapse in this population of female substance abusers. A third research question asked whether perceived social support had a mediating effect on the direct relationship between attachment dimensions and relapse. It was hypothesized that there would be significant relationships between attachment dimensions and relapse and also a significant relationship between perceived social support and relapse. It was hypothesized that

perceived social support would be a mediator on the relationship between attachment dimension and relapse.

Summary of Results

Results of the present study identified that women with anxious styles of attachment were found to have a higher potential to relapse but women who reported higher levels of perceived social support had decreased potential for relapse. Also, results identified that women with higher levels of perceived social support appeared to have decreased attachment anxiety. Finally, women with more anxious attachment styles who also reported higher levels of perceived social support showed a reduced potential to relapse. These results will be discussed in detail in the following section.

Interpretation of the Findings

Interpretation of Results

In order to address the first two research questions, preliminary analyses were conducted through multiple regression to determine whether significant relationships existed between attachment anxiety and relapse, attachment avoidance and relapse, and social support and relapse in a population of women with prescription pain medication addiction. Results of the multiple linear regression analysis revealed that as a whole the model is significant accounting for 36.7% of the variance showing that when combined, the three independent variables do result in a significant effect on the dependent variable, relapse. The model proved significant as result of the overlap that these variables had on the dependent variable. This overlap is evidenced through the significant R^2 and the insignificant Beta coefficients. Although none of the individual variables indicated

unique significance, the independent variables attachment anxiety and perceived social support had p values approaching significance while attachment avoidance did not appear to contribute to the model. In the model attachment avoidance was not contributing unique variance but was correlated with the other variables thus reducing their unique variance. As result, it was decided to conduct a second multiple linear regression model excluding the independent variable, attachment avoidance.

Results of the second multiple linear regression analysis revealed that as a whole the model was significant showing that when combined both attachment anxiety and perceived social support accounted for significant overall variance of 36% in the relationship with relapse. Attachment anxiety yielded a significant positive relationship with relapse indicating that increased levels of attachment anxiety would result in a greater likelihood for relapse. Perceived social support, however, had a significant negative relationship with relapse indicating that the higher the level of perceived social support the potential for relapse decreased. Additionally, the independent variables, attachment anxiety and perceived social support had a significant negative correlation, meaning that as attachment anxiety increases perceived social support decreases and vice versa as social support increases attachment anxiety decreases. Looking at these results the question was raised whether the relationship between attachment anxiety and relapse continues to exist or is changed with perceived social support as a mediator.

The third research question asked if social support was placed in the model between attachment anxiety and relapse, if it would make a difference in the outcome. Specifically, would relapse decrease even though attachment anxiety exists when

perceived social support is high? Although it could not be determined which independent variable would be a mediator in the relationship between attachment anxiety, perceived social support, and relapse, I believed that perceived social support would mediate the relationship between attachment anxiety and relapse as previous evidence suggests attachment style is developed at infancy and an individual's support network develops later in life (Golder et al., 2005; Thorberg & Lyvers, 2010).

A mediation analysis was conducted in order to address whether risk for relapse would decrease in women with high levels of attachment anxiety but also with high levels of perceived social support. Mediation examines four pathways to determine whether a chosen third mediating variable will have an effect on an already existing relationship between two variables. Results of the mediation model for attachment anxiety indicated that all four paths produced statistically significant outcomes. Specifically, the results of the total effect (relationship between attachment anxiety and relapse) and the direct effect (relationship between attachment anxiety and relapse by way of social support) were statistically significant. As both the total effect and direct effect proved significant, an additional test was conducted using a bootstrapping method to determine the standard error needed to test the significance of the indirect effect between the variables. Results of the bootstrapping confirmed evidence of an indirect effect of attachment anxiety on relapse through the influence of social support. Therefore the null hypothesis for research question 3 was rejected. The results showed that in both the relationships, women with prescription pain medication addiction continued to be at risk for relapse. However, the

risk for relapse was decreased in those women who reported a higher level of perceived social support.

Literature Review and Research Findings

The current findings contribute to the substance abuse literature in the field of psychology by expanding and adding to previous research. This study found that increased attachment anxiety resulted in a higher risk for relapse in women primarily using prescription pain medications but when those women reported higher levels of perceived social support their relapse risk decreased. Wedekind et al. (2013) researched attachment style and alcohol abuse in a population of men and women. They found that both men and women with insecure styles of attachment were more likely to engage in alcohol abuse than those with secure styles of attachment. Their results concluded that those with insecure styles of attachment experienced higher levels of insecurity in relationships, lack of trust, and poor coping skills (Wedekind et al., 2013). The authors suggested further research to identify the role that relationships have on the already existing relationship between insecure attachment and alcohol abuse. Thorberg and Lyvers (2006) also examined individuals in treatment for alcoholism, heroin addiction, amphetamine/cocaine addiction or cannabis abuse and their attachment styles. They found that individuals who reported insecure attachment styles were more likely to engage in substance use. The findings from the current study extend those of both Wedekind et al. (2013) and Thorberg and Lyvers (2006) through research that included individuals receiving treatment for prescription pain medication addiction and confirming

that those with anxious attachment styles are more likely to relapse on prescription pain medications.

Current findings also found that perceived social support does decrease relapse potential for women in treatment for prescription pain medication addiction who reported attachment anxiety. Smith and Rosen (2009) investigated attachment in a sample of geriatric men and women receiving treatment for opioid addiction. They found that those with increased anxiety were known to isolate rather than seek out others for support thus increasing their relapse potential. Smith and Rosen (2009) suggested these findings should be used to study whether increasing social support for this population would lead to decreased use of opioids. The findings from my study do confirm that relapse risk is decreased when perceived social support is increased in my population of women who reported high attachment anxiety. Results of the present study are also consistent with previous research that found that increased perceived social support would result in a lower risk for relapse (Smith & Rosen, 2009; Wedekind et al., 2013).

Past research has studied social support and different types of substances that are commonly abused using populations of both men and women, as well as only women. Tracy and Johnson (2007) studied substance abuse recovery and social support in a population of women with co-occurring substance abuse and mental health disorders. They specifically investigated differences in family and peer social support. Tracy and Johnson (2007) identified that positive family and peer social supports for women are an important component of successful recovery. Results of the current study confirm the importance for women of having a high level or perceived social support in order to

decrease their relapse potential. The influence of social support is also supported by Tracy et al. (2010) who studied the role of social support in a sample of women in treatment for various types of substance abuse. Their results identified that social support was linked to improved treatment outcomes for women in the study. They also found that their treatment outcomes depended on whether the participants rated social support as positive or negative. Tracy et al. (2010) concluded that there is a need to further study the role that social support has on relapse potential. Lev-Wiesel and Shual (2006) examined gender differences and social support in adults receiving treatment for opioid addiction. Their research acknowledged that women reported a decreased amount of social support than men in the study and also found that women typically experienced greater severity of family and social problems. Lev-Wiesel and Shual (2006) recommended further research to address social support in women with opioid addiction. Current results support the importance of social support for women with prescription pain medication addiction in preventing relapse.

My study supports previous research by Thorberg and Lyvers (2006) and Smith & Rosen (2009) that both attachment style and social support predict relapse potential. Findings from the current study also add to the current knowledge base by including only women in treatment for prescription pain medication addiction. The present research further extends the literature through demonstrating that in a population of women receiving treatment for prescription pain medication addiction, increasing the amount of perceived social support decreases risk for relapse for those with an anxious style of attachment.

The current study expands on other research regarding attachment, perceived social support, and relapse potential. Previous research conducted by Caspers et al. (2005) investigated attachment style and illicit substance abuse in a population of adoptees. Their research used a mixed methods approach and sought to identify whether perceived social support would mediate the relationship between attachment and relapse. Results of Caspers et al. (2005) confirmed perceived social support to mediate the relationship between insecure attachments and relapse although they did report that the respondents in their study may have provided an overly optimistic perception of their social support network. My study found that the role of perceived social support is an important component for women in treatment for prescription pain medication addiction who reported increased attachment anxiety.

More recently, Borhani (2013) studied the correlation between insecure attachment and substance abuse in romantic relationships in a population of college aged men and women. She utilized the ECR-R modified to measure attachment in romantic relationships. Borhani (2013) found that for both men and women in romantic relationships, those who reported a higher level of insecure attachment towards their romantic partners also reported a higher level of substance use. The author suggested that these findings should be used in a larger population to determine overall generalizability. Additionally, Borhani (2013) only studied insecure attachment and substance abuse in terms of those in romantic relationships and suggested further research including other types of relationships. My study investigated insecure attachment and social support in

general terms in a population of women in treatment for prescription pain medication addiction.

The current study contributes to the literature by confirming that there is a mediating effect from perceived social support in women with increased attachment anxiety and relapse. Although similar studies have been conducted, my study is unique and important to the field as it confirms that increasing social supports for women in treatment for prescription pain medication addiction with anxious attachment styles can improve their likelihood for success in treatment and decreased relapse risk.

Theoretical Implications

Attachment theory was the theoretical foundation utilized for this study. Attachment theory suggests that an individual's experiences in early relationships can predict future relationships (Reinert & Edwards, 2009). Since attachment theory was introduced by Bowlby in the 1960s many other theorists have used this model to explain other types of relationships throughout the lifespan including adult attachment (Hazen & Shaver, 1994, Collins & Read, 1990). For the current study, women in treatment for prescription pain medication addiction responded to the ECR-R to identify their style of attachment (either avoidant or anxious) (Fraley, Waller, & Brennan, 2000).

My study expands on already existing knowledge about how attachment theory is linked to various types of substance abuse and relapse. The current findings identified that in women with addiction to prescription pain medications having an anxious style of attachment increased their relapse potential. The present research contributes to the literature that has already determined how substance abuse impacts attachment between

adults and children (Golder et al., 2005; Caspers et al., 2006) and explains the additional role that perceived social support has on the relationship between this population and risk for relapse. Also, it found that women with higher levels of perceived social support have a decreased risk for relapse even with higher levels of attachment anxiety. It contributes to attachment theory by identifying the important role of attachment in a population of women in treatment for prescription pain medication addiction. Also, the current results contribute that perceived social support does appear to have a mediating effect on attachment style and relapse in this population.

Limitations

Several limitations may be present in the current study. First, the data for this study came from self-reports by female participants from 20 outpatient opiate treatment facilities across eight states that were patients for at least two months and were recruited by their Licensed Drug and Alcohol Counselors. Self-report measures can have limited reliability due to the possibility that social desirability, demand characteristics, and response sets may influence participant responses.

As the data were collected through self-report there is the unlikely possibility that participants may have completed the surveys more than one time; which this researcher was unable to control and had no way of tracking. Also, there was the risk for missing data due to skipped questions or by participants utilizing their right to stop participation at any time. This was the case in the current study where of the 73 participants only 69 completed all items of the surveys.

Third, as the facilities are fee-for-service treatment facilities, only those able to afford treatment participated in this study. This limited the population to only those who were able to afford treatment at the time of data collection. Therefore, the results may not generalize to other populations.

Fourth, as participants volunteered to complete the questionnaires there was no control of ethnicity or cultural background of participants. The majority of the participants were Hispanic (47.14%) with White representing 42.86%, Black representing 5.71%, Asian representing 2.86%, and Native Hawaiian/Other Pacific Islander representing 1.43%. The participants were drawn from a very small population and no attempt was made to recruit a representative sample across ethnic and cultural backgrounds. Therefore the outcomes of this study may not be a broad description of prescription pain medication addiction in the general population.

Fifth, I did not control for or have any measurement tool to quantify the number of times that participants had relapsed so some participants may never have had a relapse episode. The AWARE Questionnaire used for this study did not ask participants for the number of times they had relapsed and this was not included elsewhere, such as on the demographic questionnaire.

Lastly, as all participants in the current research study are female the results may not generalize to males that are in treatment. This limitation also was addressed in research conducted by Reinert and Edwards (2009) who identified that both college aged men and women with insecure attachment styles were more likely to engage in high-risk behaviors including substance abuse. Their research identified that in a population of

drug users, women are more likely to internalize emotions whereas men tended to externalize and expressed the need to examine how women with this style of attachment bond towards others (Reinert & Edwards, 2009).

Social Change Implications

After an exhaustive search of the literature, a gap in the knowledge base was identified regarding the mediating role of social support for women in treatment for prescription pain medication addiction. Results of the present research suggest that women with higher levels of attachment anxiety are at an increased risk for relapse but that by increasing their level of perceived social support the risk for relapse decreases. Attachment anxiety has been defined as the extent to which individuals are uncomfortable being emotionally close to others (Fraley, Waller, & Brennan, 2009).

The results of this study benefit society through identifying that attachment style does have a role in identifying relapse potential; specifically for those who rate high in attachment anxiety. The results support the need to address attachment in treatment in order to decrease future relapse episodes possibly by providing training to substance abuse professionals regarding different styles of attachment. After professionals receive increased training they can then incorporate that knowledge into the treatment modality to benefit the patients.

The present research also confirmed that when women in treatment report higher levels of perceived social support they are at a decreased risk for relapse. The implications for social change here include potential modifications in treatment programming to address issues of attachment and social support as they pertain to relapse

potential. The results identify that social support has a protective factor in promoting success in treatment. This information may benefit treatment centers to promote an increase in positive social supports, possibly by encouraging participation in support groups or conducting work in therapy to identify and promote positive social relationships to boost social support. The present study explained how the specific psychological factors of attachment anxiety and perceived social support impact outcomes for the women in treatment. The results identified the need for women in treatment to develop a strong support system, especially if they report an anxious style of attachment.

Lastly, the present research will contribute to an increase in public awareness of prescription pain medication addiction. The current results identified that women with increased attachment anxiety are at an increased risk for relapse, but also found that those who reported higher levels of perceived social support decreased that overall risk. The present research contributes to social change through further investigating psychological factors related to substance abuse of prescription pain medications and identifying how attachment and social support impact relapse potential and outcomes for women in treatment.

Recommendations

My research confirms that social support does have a partial mediating effect on the relationship between attachment anxiety and relapse. This is important information which suggests a complex relationship between multiple factors that may influence relapse potential. Current results demonstrate that although women may have higher

levels of perceived social support, those with higher levels of attachment anxiety continue to be at a greater risk for relapse but that perceived social support does decrease the risk overall. Additionally, as the present study only obtained responses from individuals who were actively participating in treatment, it would be interesting to conduct research on other groups of individuals, possibly those not yet in treatment or those who have participated in treatment for a shorter period of time. Future areas of research would be recommended to investigate whether different types of social support (i.e., friends, family, social media) have different outcomes than that of the present research which solely investigated perceived social support for women in close relationships. Furthermore, as the present study utilized a quantitative method to collect data it would be interesting to add a qualitative component regarding the social support aspect in the relationship. The present research elected only to study women who are currently enrolled in treatment for prescription pain medication addiction therefore, future research is recommended to include men in the surveyed population in order to determine whether outcomes are equal across genders or if results differ between genders.

Conclusions

The present research examined the mediating relationship of perceived social support on the relationship between attachment dimensions (anxiety and avoidance) and relapse in a population of women currently enrolled in outpatient treatment for prescription pain medication addiction. The study utilized online survey data collection to anonymously collect responses from participants to determine their potential for relapse,

styles of attachment, and level of social support. An initial multiple regression analysis identified that when combined, all three independent variables (attachment anxiety, attachment avoidance, and perceived social support) had a statistically significant relationship to the dependent variable, relapse, but that individually no significant relationships were identified between attachment anxiety and perceived social support, and relapse; although the results did approach statistical significance. Also the first multiple regression results indicated that attachment avoidance did not appear to contribute to the model. As no significant relationship was identified between attachment avoidance and relapse in the multiple regression analysis a second multiple regression analysis was conducted without attachment avoidance in the model to determine whether significant relationships existed between the other independent variables and the dependent variable. The second multiple regression analysis did support that statistically significant relationships exist between attachment anxiety and relapse, perceived social support and relapse and also between the two independent variables, attachment anxiety and perceived social support. In order to respond to the third research question, a mediation analysis was run. The mediation analysis confirmed that perceived social support had a partial mediating effect on the relationship between attachment anxiety and relapse. Results further identified that women with high levels of attachment anxiety continue to be at a greater risk for relapse even when they report higher levels of perceived social support; although the risk does decrease in the mediating model. These findings contribute to previous research that also had determined that there is a significant link between styles of insecure attachment and relapse. The present research

attempted to close a gap in the literature regarding psychological factors influencing relapse potential in a female population receiving outpatient treatment for prescription pain medication addiction. The results identified a partial mediating role of social support on the relationship of attachment anxiety and relapse.

Outcomes of the research support the idea that although individuals with higher levels of attachment anxiety have a higher risk for relapse, the level of social support can partially affect the outcome of relapse for these individuals decreasing the risk as the level of perceived social support increases. This knowledge is important to understand as it may have an impact on treatment for this population. The results are useful for treatment providers as they can educate themselves on different types of attachment and then educate clients about attachment as it pertains to addiction and relapse risk. This information is useful for treatment providers who intend to incorporate strategies to build positive support systems for women in treatment. Further, it allows for additional research to examine whether this mediating relationship exists with other populations, such as men, as well as with other substances. These findings lend important insight into the relationships between attachment, social support, and relapse. They also give other researchers the opportunity to conduct further studies in order to build upon this knowledge.

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Appendix A: Invitation to Participate

INVITATION TO PARTICIPATE IN A PRESCRIPTION
MEDICATION ADDICTION STUDY

- Volunteers are sought for participation in a doctoral research study. This study will examine relationships between attachment anxiety or avoidance and perceived social support and relapse potential in women receiving treatment for prescription pain medication opioid addiction.
- If you are an adult female currently enrolled in treatment for prescription pain medication opioid addiction, have been enrolled in treatment for at least two months, and are interested in being part of this study, please go to (surveymonkey webaddress) and complete the questionnaires.
- All information will be held in strict confidentiality. This is a research study only, the study does not provide additional treatment, recommendations, or referrals, and no information provided by specific participants will be provided to their counselors.
- Your counselor does not have information to answer specific questions about this study but more information will be available on the study consent form.
- Thank you for your interest!

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Appendix B: Demographic Questionnaire

Completion of the demographic questionnaire is significant for determining the influence of variety of factors on the results of this study. All of these records will remain confidential. Please click the appropriate circle.

Age 18-25 26-35 36 – 50 51 – 60 61 +**Ethnicity** White Black or African American Asian Hispanic/Latino American Indian or Alaskan Native Some Other Race Native Hawaiian or Other Pacific Islander**Educational background** (check the highest level of earned academic degree) High School Diploma/GED College graduate (4 year degree) Master's Degree Doctoral Degree**Socioeconomic Status**

What is your average annual income?

0-20,999

21,000-39,999

40,000-59,999

60,000 -79,999

80,000-99,999

100,000+

Marital Status

Single/Never Married

Married/In relationship

Divorced

Widowed

Dependent Status

How many children do you have (living in the home?)

0

1

2

3 or more

Appendix C: AWARE Questionnaire

Please read the following statements and for each one click a number, from 1 to 7, to indicate how much this has been true for you recently. Please click on one and only one number for every statement.

Never	Rarely	Sometimes	Fairly Often	Often	Almost Always	Always	
1	2	3	4	5	6	7	
1. I feel nervous or unsure of my ability to stay sober.	1	2	3	4	5	6	7
2. I have many problems in my life.	1	2	3	4	5	6	7
3. I tend to overreact or act impulsively.	1	2	3	4	5	6	7
4. I keep to myself and feel lonely.	1	2	3	4	5	6	7
5. I get too focused on one area of my life.	1	2	3	4	5	6	7
6. I feel blue, down, listless, or depressed.	1	2	3	4	5	6	7
7. I engage in wishful thinking.	1	2	3	4	5	6	7
8. The plans that I make succeed.	1	2	3	4	5	6	7
9. I have trouble concentrating and prefer to dream about how things could be.	1	2	3	4	5	6	7
10. Things don't work out well for me.	1	2	3	4	5	6	7
11. I feel confused.	1	2	3	4	5	6	7
12. I get irritated or annoyed with my friends.	1	2	3	4	5	6	7
13. I feel angry or frustrated.	1	2	3	4	5	6	7
14. I have good eating habits.	1	2	3	4	5	6	7
15. I feel trapped and stuck, like there is no way out.	1	2	3	4	5	6	7
16. I have trouble sleeping.	1	2	3	4	5	6	7
17. I have long periods of serious depression.	1	2	3	4	5	6	7
18. I don't really care what happens.	1	2	3	4	5	6	7
19. I feel like things are so bad that I might as well use.	1	2	3	4	5	6	7
20. I am able to think clearly.	1	2	3	4	5	6	7
21. I feel sorry for myself.	1	2	3	4	5	6	7
22. I think about drinking.	1	2	3	4	5	6	7
23. I lie to other people.	1	2	3	4	5	6	7
24. I feel hopeful and confident.	1	2	3	4	5	6	7
25. I feel angry at the world in general.	1	2	3	4	5	6	7
26. I am doing things to stay sober.	1	2	3	4	5	6	7
27. I am afraid that I am losing my mind.	1	2	3	4	5	6	7
28. I am drinking out of control.	1	2	3	4	5	6	7

Appendix D: The Experiences in Close Relationships-Revised
(ECR-R) Questionnaire

The statements below concern how you feel in emotionally intimate relationships. I am interested in how you *generally* experience relationships, not just in what is happening in a current relationship. Respond to each statement by clicking a circle to indicate how much you agree or disagree with the statement

1-----2-----3-----4-----5-----6-----7
Strongly Disagree Strongly Agree

1. I'm afraid that I will lose my partner's love.

1-----2-----3-----4-----5-----6-----7

2. I often worry that my partner will not want to stay with me.

1-----2-----3-----4-----5-----6-----7

3. I often worry that my partner doesn't really love me.

1-----2-----3-----4-----5-----6-----7

4. I worry that romantic partners won't care about me as much as I care about them.

1-----2-----3-----4-----5-----6-----7

5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.

1-----2-----3-----4-----5-----6-----7

6. I worry a lot about my relationships.

1-----2-----3-----4-----5-----6-----7

7. When my partner is out of sight, I worry that he or she might become interested in someone else.

1-----2-----3-----4-----5-----6-----7

8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.

9. I rarely worry about my partner leaving me.

1-----2-----3-----4-----5-----6-----7

10. My romantic partner makes me doubt myself.

1-----2-----3-----4-----5-----6-----7

11. I do not often worry about being abandoned.

1-----2-----3-----4-----5-----6-----7

12. I find that my partner(s) don't want to get as close as I would like.

1-----2-----3-----4-----5-----6-----7

13. Sometimes romantic partners change their feelings about me for no apparent reason.

1-----2-----3-----4-----5-----6-----7

14. My desire to be very close sometimes scares people away.

1-----2-----3-----4-----5-----6-----7

15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.

1-----2-----3-----4-----5-----6-----7

16. It makes me mad that I don't get the affection and support I need from my partner.

1-----2-----3-----4-----5-----6-----7

17. I worry that I won't measure up to other people.

1-----2-----3-----4-----5-----6-----7

18. My partner only seems to notice me when I'm angry.

1-----2-----3-----4-----5-----6-----7

19. I prefer not to show a partner how I feel deep down.

1-----2-----3-----4-----5-----6-----7

20. I feel comfortable sharing my private thoughts and feelings with my partner.

1-----2-----3-----4-----5-----6-----7

21. I find it difficult to allow myself to depend on romantic partners.

1-----2-----3-----4-----5-----6-----7

22. I am very comfortable being close to romantic partners.

1-----2-----3-----4-----5-----6-----7

23. I don't feel comfortable opening up to romantic partners.

1-----2-----3-----4-----5-----6-----7

24. I prefer not to be too close to romantic partners.

1-----2-----3-----4-----5-----6-----7

25. I get uncomfortable when a romantic partner wants to be very close.

1-----2-----3-----4-----5-----6-----7

26. I find it relatively easy to get close to my partner.

1-----2-----3-----4-----5-----6-----7

27. It's not difficult for me to get close to my partner.

1-----2-----3-----4-----5-----6-----7

28. I usually discuss my problems and concerns with my partner.

1-----2-----3-----4-----5-----6-----7

29. It helps to turn to my romantic partner in times of need.

1-----2-----3-----4-----5-----6-----7

30. I tell my partner just about everything.

1-----2-----3-----4-----5-----6-----7

31. I talk things over with my partner.

1-----2-----3-----4-----5-----6-----7

32. I am nervous when partners get too close to me.

1-----2-----3-----4-----5-----6-----7

33. I feel comfortable depending on romantic partners.

1-----2-----3-----4-----5-----6-----7

34. I find it easy to depend on romantic partners.

1-----2-----3-----4-----5-----6-----7

35. It's easy for me to be affectionate with my partner.

1-----2-----3-----4-----5-----6-----7

36. My partner really understands me and my needs.

1-----2-----3-----4-----5-----6-----7

Appendix E: Personal Resource Questionnaire

Below are some statements with which some people agree and others disagree. Please read each statement and CLICK the response most appropriate for you. There is no right or wrong answer.

1-----2-----3-----4-----5-----6-----7
 Strongly Disagree Strongly Agree

1. There is someone I feel close to who makes me feel secure

1-----2-----3-----4-----5-----6-----7

2. I belong to a group in which I feel important

1-----2-----3-----4-----5-----6-----7

3. People let me know that I do well at my work (job, Homemaking)

1-----2-----3-----4-----5-----6-----7

4. I have enough contact with the person who makes me feel special

1-----2-----3-----4-----5-----6-----7

5. I spend time with others who have the same interests that I do

1-----2-----3-----4-----5-----6-----7

6. Others let me know that they enjoy working with me

1-----2-----3-----4-----5-----6-----7

7. There are people who are available if I need help over an extended period of time

1-----2-----3-----4-----5-----6-----7

8. Among my group of friends we do favors for each other

1-----2-----3-----4-----5-----6-----7

9. I have the opportunity to encourage other to develop their interests and skills

1-----2-----3-----4-----5-----6-----7

10. I have relatives or friends that will help me out even if I can't pay them back

1-----2-----3-----4-----5-----6-----7

11. When I am upset, there is someone I can be with who lets me be myself

1-----2-----3-----4-----5-----6-----7

12. I know that others appreciate me as a person

1-----2-----3-----4-----5-----6-----7

13. There is someone who loves and cares about me

1-----2-----3-----4-----5-----6-----7

14. I have people to share social events and fun activities with

1-----2-----3-----4-----5-----6-----7

15. I have a sense of being needed by another person

1-----2-----3-----4-----5-----6-----7

Appendix F: Debriefing Page

DEBRIEFING PAGE

Thank you for your participation!

No further action is needed on your part, participant information will not be shared, and overall findings of the present study will be made available to your clinics once the study is completed.

*If you have experienced any distress following your participation in this research please contact your Licensed Alcohol and Drug Counselor as discussed in the informed consent. If you have any additional questions I can be contacted at the email address provided in the informed consent page.