THE RELATIONSHIP BETWEEN PARENTAL LIFESTYLE, ATTACHMENT STYLE AND THE MEDIATING EFFECT OF FAMILY ENVIRONMENT ON THE CHARACTERISTICS OF THEIR ADULT CHILDREN IN SUBSTANCE ABUSE TREATMENT

by

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This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. Paul R. Peluso, Department of Counselor Education, and has been approved by the members of his supervisory committee. It was submitted to the faculty of the College of Education and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

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The role of attachment style in overall family functioning and in individual substance abuse patterns has been researched extensively. Lifestyle constructs have been seen as predictors of substance abuse related behaviors, including future drug related difficulties. Dysfunctional family environments have been seen as predictors of poor mental health outcomes in family members. Despite the high rates of co-morbidity in alcohol and drug dependent individuals, parental lifestyle, attachment style, and the overall influence of family environment on the psychological traits of substance dependent individuals had not been previously examined.

This study examined a group of parents and their adult children (actively in substance abuse treatment, with diagnoses of substance dependence) who participated in a weeklong family education program at an inpatient treatment center. The parental group (n=37) was given a series of lifestyle (Basis-A), attachment (Experiences in Close Relationships Inventory - Revised), and family environment (Family Environment Scale) instruments to complete, and the adult children (n=28) completed the Millon Clinical Multiaxial Inventory III in order to measure their psychological traits. Data analysis was conducted using a parallel multiple mediation model, and bootstrapping, which increased the sample size to 5,000 per group. Based on the literature review and a basic correlational analysis between the parental and adult child characteristics, pathways were theorized to exist by the researcher which indicated the use of the parent lifestyle and attachment styles as the independent variable, the adult children's psychological traits as the dependent variable, and family environment factors as the mediating variable(s). Results were given in unstandardized regression coefficients for the individual pathways, including direct and total effects, and in bias corrected confidence intervals for the specific indirect effects of the mediators.

Direct effects were found between attachment style, lifestyle and patient traits, as well as several significant total effects (combined direct effect and the effect of overall family environment). Specific indirect effects were also found from individual family environment mediators, including moral religious emphasis and control, on the

relationship between independent and dependent variables. An analysis of the results is given, along with a discussion of clinical implications and directions for future research.

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CHAPTER 1
INTRODUCTION

Substance Abuse in the United States: Impact

In order to have the greatest societal impact, counseling research must focus on the topics and issues that can have the most benefit to the overall mental health of the nation's population. Substance abuse and dependence in the United States is clearly one of these most pressing of public health concerns. The Substance Abuse and Mental Health Services Administration estimates that 120 million Americans aged 12 or older consume alcohol and almost 20 million Americans aged 12 or older use illicit drugs on a regular basis (SAMHSA, 2003). Including health costs, crime and productivity loss, estimates of the total overall costs of substance abuse in the United States are $181 billion for illicit drugs (Office of National Drug Control Policy, 2004), and $185 billion for alcohol (Harwood, 2000). Additionally, the prevalence of alcohol and drug abuse in the U.S. appears to be increasing. In 2005, the National Institute for Alcohol Abuse and Alcoholism reported that approximately 4.6 % of the nation's population has alcohol abuse or dependence issues, which is an increase of 1.6% percent from 10 years ago (NIAAA, 2005). Drug and alcohol related conditions impact every aspect of society, from criminal justice to the family structure. Of 11.1 million victims of violent crime each year, almost one in four, or 2.7 million, report that the offender had been drinking prior to the crime (Greenfield, 1998). When compared to moderate or non-drinkers,

individuals identified as heavy drinkers incur significantly higher medical costs (Hunkeler, Hung, Rice, Weiser & Hu, 2001).

Co-morbidity, or co-occurring mental health disorders and substance abuse disorders are also a tremendous public health and societal problem worldwide today (Swendson & Merikangas, 2000). Approximately 33.2 million American adults age 18 and older have a serious mental illness or a substance use disorder. Of this group, 29.1 million have either a substance use disorder or a serious mental illness; however, 4 million are afflicted with co-occurring mental illness and substance use disorders (COD) and approximately 61 percent of these individuals have never received treatment for either condition (SAMHSA, 2003).

Additionally, treatment for substance abuse disorders can be significantly complicated by the presence of a co-occurring disorder; there are clear indications of substance use relapse following the re-occurrence of mood disorder symptoms in these individuals (Hasin et al., 2002). The impact of co-occurring disorders on the individual and society reaches beyond the realm of mental health and substance abuse. Research has also shown that individuals who suffer from co-occurring mental health and substance abuse issues have higher rates of chronic health problems, consistently use emergency services at a higher rate, and often present for care within the primary health care context (Gournay, Sandford, Johnson, & Thornicroft, 1997; Dickey, Normand, Weiss, Drake, & Azeni, 2002). While there is a large body of research that confirms the difficulty in effectively treating co-occurring disorders, there is still a gap in knowledge of how to determine their origins (Grant, Moore, & Kaplan, 2003). The chronic nature of these conditions, and the devastating societal impact, make it imperative that we continue to

explore the characteristics of the individuals affected, so that healthcare providers can begin to develop more effective treatment protocols (McClellan, Lewis, O'Brien, & Kleber, 2000).

Substance use disorders also have been shown to have a tremendous impact on the family structure and functioning. Approximately one in four children under 18 years old in the United States is exposed to chronic alcohol abuse or alcohol dependence in the family (Grant, 2000). More than one-half of American adults have a family member who has, or has had, alcohol abuse or dependence (Dawson & Grant, 1998). The family unit is one of the most powerful influences on human development, and understanding its' role in the problem of substance abuse and dependence is central to more effectively treating the disorder (Scharff, Broida, Conway, & Yue, 2004).

Addictive disorders, whether substance related or not, are behavioral diseases. Therefore, they exist within a social context; often the development, maintenance and recovery process from the disease are all intimately involved with the family system (Rotgers, Keller, & Morgenstern, 1996). In the chemically dependent family, dysfunction abounds; in many cases, the individuals who are afflicted with the disease are impacted as much (if in different ways) as those around them in their immediate familial circle. Lack of expression, the hyper-vigilance of children around adults in the household (Isaacson, 1991), and 'hiding' of true feeling and emotions are classic symptoms of a family unit suffering from the disease of addiction, which may play a role in the generational continuation of the condition. In the family unit impacted by substance dependence, often the lack of expression has other long-term impacts as well. Crnkovic

and Delcampo (1998) discuss in more detail the three “unwritten rules” of the family impacted by substance abuse:

> The three main rules of addicted families are "don't trust," meaning that it is unwise to believe that what is good today will necessarily be good tomorrow, "don't feel," many family members of addicts are punished physically or emotionally for expressing any emotion such as anger or happiness. The third family rule is "don't talk," which implies that expressing oneself, within or outside of the family, could result in retribution (p. 3).

The hyper-vigilance and fear shown by many family members and children of substance abusing individuals is also a symptom of a larger issue. Many family members will, as is commonly seen through a family systems theory perspective, adjust and find equilibrium in the family unit (Hamid & Galea, 2005). They quickly realize that if their basic needs are to be met, they will need to adjust and take on manipulative features, in many ways almost identical to that of the identified patient. Family members are then able to adjust to and work within the confines of the addictive process in order to achieve some semblance of order and stability (Starr, 1989). Another key element in substance abusing familial units is the lack of, or over-abundance of, boundaries among family members (Mackensen & Cottone, 1992). This creates either over involvement with family members (“covering up”, lying about the substance abusers’ activities, etc.) or complete isolation from one another, thereby perpetuating the harmful condition amongst

the entire family. These patterns of behavior are consistent with behaviors displayed by many adult substance dependent individuals. Although much has been written on the impact these familial systems issues have on adolescent drug and alcohol usage, little has been explored as it relates to adult treatment for substance abuse (Dobkin, Civita, Praherakis, & Gill, 2002). Exploring these issues and finding correlations between these factors and other treatment or demographic characteristics of the identified patients may shed some light on relationships between these factors and assist in both treatment planning and prevention.

Significance/Statement of the Problem

While previous studies have examined processes in the family and found that they may contribute to drug use onset, course, and outcome (Rotgers et al., 1996), etiological theories to explain drug use and behavior as an outcome of the family unit dynamics are often controversial (Erickson, 2000). One reason for this may be the difficult nature of diagnoses, as in the case of dually disordered individuals. The question of which disorder was present first is often asked when attempting to discern whether or not an individual's mood or personality disorder developed prior to the development of a substance abuse problem. However, research has shown that these conditions operate and are observable in substance abusers with co-morbid conditions, well after any effects of intoxication and acute or sub-acute withdrawal symptoms have ceased (Hasin & Nunes, 1997; Hasin & Grant, 2002). Additionally, researchers in the last ten years have thoroughly explored the connections, and found positive correlations, between personality traits and substance abuse (Gerra et al., 2004; Kashdan, Vetter, & Collins, 2005; Tremblay & Ewart, 2005). Personality traits and characteristics have also been linked as predictors of future drug

issues an individual might experience, as well as shedding light on drug of choice users prefer (Kirkcaldy, Siefen, Surall, & Bischoff, 2004).

The theory of Individual Psychology, developed by Alfred Alder, is a holistic, teleological theory, which considers the whole person as represented by their lifestyle. Considered to be synonymous with personality, or personality-in-action (Lombardi & Melchior, 1996; Ansbacher & Ansbacher, 1956), the concept of lifestyle is central to understanding Adler and his theory of Individual Psychology. Lifestyle, to Adler, began to take shape around the ages of four or five, and determines how a person reacts and addresses the issues all human beings face in their lives; in essence, it determines how we live our lives. It is an all-encompassing concept, the sum of one's private logic, values, knowledge and observations, that are the product of experience, environment, and even hereditary factors (Ansbacher & Ansbacher, 1956). The Adlerian concept of lifestyle was, in many ways, a rejection of the deterministic, physiologically driven conception of personality held by his former colleague, Sigmund Freud. While Adler did feel that lifestyle began to form as a young child, he did not believe that it was static, or unable to be modified over the years to help one live in a more socially connected way.

The development of the BASIS-A Inventory (Wheeler, Kern, & Curlette, 1993) finally provided a quantitative measure of Adlerian lifestyle. There has been research studies performed with substance dependent individuals using this instrument (Wheeler et al., 1993; Bauman, 2000). Bauman (2000) examined the results of BASIS-A tests as well as psychiatric diagnoses given to a large group of patients receiving counseling services at a crisis center in the Southeastern United States. The BASIS-A results were shown to be a significant predictor of substance use disorders within the study group. Gender was

not significant as a predictor of a psychiatric or substance use disorder diagnosis, but certain scales of the BASIS-A positively correlated with the presence of a substance abuse or dependence diagnosis. However, it is important to note that there is virtually no published research examining characteristics of adult substance abusers in primary substance abuse treatment using both a quantitative measure of lifestyle and personality trait-based psychometric testing. Personality traits have clearly been shown as a factor in treatment success; if lifestyle can be viewed as personality in action, then the role of Adlerian lifestyle needs to be considered as it relates to both treatment success and the development of psychopathology within the family structure. This study aims to address this deficit in the literature, and examine these relationships in order to further establish a link between lifestyle and substance abusers' personality and mood disorder conditions. This link could be effective in not only predicting treatment outcomes in the future for these individuals, but also assist in treatment planning, patient management and aftercare.

Parental bonding and attachment is often seen as crucial to a healthy developmental process in humans. Attachment theory, as espoused by Bowlby (1969), focuses on attachment behaviors, centered on a prominent figure in the individual's life, with the goal of security promotion. Variations of attachment style result from different working models of the self which are primarily formed, from infancy, through the parent-child relationship. (Bowlby, 1973). Attachment theory has been used as a theoretical model for exploring substance abuse related topics; for example, examining college students, drinking problems and negative view of self (McNally, Palfai, Levine, & Moore, 2003). and adult attachment, emotional distress, and interpersonal problems in individuals in treatment (Doumas, Blasey, & Mitchell, 2006). Positive correlations have

also been found between significant interpersonal distress and substance abusing individuals with a negative view of self. (Haaga et al., 2002). However, there is little research on the relationship between adult attachment style, substance abusers in treatment, and personality traits as measured by psychometric assessment. Ability to link attachment styles, family environment and relational styles to patterns of pathology and personality traits may assist in assessment and evaluation of drug and alcohol dependent individuals, and form the basis of improved aftercare arrangements for this population.

Lastly, the acute care model remains the primary vehicle for delivery of treatment services for the chemically dependent in the United States today (McLellan, Lewis, O'Brien, & Kleber, 2000). This acute care model focuses around a combination of detoxification of the substance abuser (if necessary), and a relatively short treatment episode, either in or out patient, designed to stabilize the individual and create a period of abstinence from substance usage. Aftercare, and patient management following discharge, is often seen as a much lower priority than the treatment episode itself. Several have challenged the lasting value of a purely acute care model of treatment considering the complexity of the disease of addiction (McLellan, Lewis, O'Brien, & Kleber, 2000). Regardless, despite the numerous similarities between addictive disorders and other chronic, possibly fatal, conditions such as diabetes and hypertension, this type of treatment modality has become the standard for care (McLellan & White, 2008). While some studies have shown success in managing addictive disorders through a more comprehensive process, including regular follow ups and monitoring of patient progress (Dennis, Scott, & Funk, 2003), addiction care in the United States today mainly remains focused on stabilization and crisis management.

Issues such as lifestyle, family environment, and attachment may play large roles in development of substance use or dependence, drug of choice, as well as identifying co-occurring conditions that may play a role in an individual's long-term recovery process. However, these are often not addressed in the context of treatment due to time and monetary constraints. The acute care model primarily is designed to reduce symptoms of substance use disorders, or physical dependence on substances, if needed, but not on long-term aspects of care, which may play the greatest role in improved mental health and quality of life for the patient. Social support systems and their maintenance and development play a large role in reducing the severity of alcohol and drug use among individuals with substance use disorders (Dobkin et al., 2002). Gaining a greater understanding of the inner aspects of the close relationships and lifestyle that family members of drug and alcohol treatment patients have, and establishing correlations between their personality patterns, relationships and substance use can help to provide a solid foundation on which to assist them in a successful treatment episode, but also in a recovery process that increases their overall quality of life.

Purpose of the Study

The following study proposal is designed in order to determine the effect that parental attachment style and parental Adlerian lifestyle of parents have on the development of personality traits and related pathological indicators of their substance dependent children at an in-patient substance abuse treatment center. The family member participants in the study have all attended a weeklong family psycho-educational program at a large inpatient facility in Southeastern Florida, and all patients participating in the study are inpatient participants in an alcohol and drug treatment program at the same

facility. All patients participating in the study have received DSM-IV diagnoses of drug, alcohol, opiate, cocaine, or poly-substance dependence.

Research Questions

1. Is there a relationship between patients' mood disorders, personality pathology and their parents' attachment style and lifestyle profile, and is there an overall impact of family environment on this relationship?

2. Do specific elements of the familial environment have a mediating influence on the relationship between parental lifestyle, attachment and the personality disorder and mood disorder traits of their adult children in substance abuse treatment?

Hypotheses

HQ1: Less secure parental attachment style and specific scores on lifestyle instruments will not significantly relate to clinically significant patient mood disorder scores and/or clinically significant patient personality disorder indicators, even in the context of the family environment as a whole.

Alternative 1: Less secure parental attachment style and specific scores on lifestyle instruments will positively relate to clinically significant patient mood disorder scores and/or clinically significant patient personality disorder indicators in the context of the family environment as a whole.

HQ2: Specific family environment characteristics will not be a mediator between parental lifestyle, attachment style and the mood disorder and personality disorder traits of their adult children in substance abuse treatment.

Alternative 2: Specific family environment characteristics will be a significant factor or mediator between parental lifestyle, attachment style and the mood disorder and personality disorder traits of their adult children in substance abuse treatment.

Limitations of the Study

The following limitations on the study are imposed by the researcher:

- While all instruments to be used in the study have high rates of reliability and validity, the instrument will be self-administered by the patients and their family members, and thus will be self-reported methods used to determine lifestyle, close relationship style, family environment and personality traits, including mood disorder and personality pathology indicators.

The following limitations on the study are imposed by the situation:

- Participation in the family week program where these study instruments will be administered is voluntary, and the family members' participation in the study is also purely voluntary. No random control measures will be in place for this study.
- The facility where this study will be undertaken is an in-patient substance abuse treatment facility, where an abstinence-based approach is presented, with emphasis on group and individual therapy, 12-step program involvement and psycho-education. The results may not be applicable to therapeutic community

treatment programs, methadone maintenance programs, harm-reduction based treatment programs, or outpatient treatment programs.

Delimitations of the Study

The following are delimitations of the study:

- The study examines a primarily middle-class socio-economic status group of patients currently in an in-patient substance abuse treatment center, and their family members; the results may not be applicable to other socio-economic groups of patients or family members.

Definitions

- Substance abuse: The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), defines substance abuse as a "maladaptive pattern of substance use, leading to clinically significant impairment or distress" (APA, 1994). Criteria for meeting this clinical definition include significant impairment in work, school, social or interpersonal functioning, usage despite physically hazardous conditions (including operating machinery, etc.), or substance related legal difficulties. These must occur once (or more) during a twelve-month period to satisfy the conditions necessary for this diagnosis (APA, 1994).
- Substance dependence: The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), defines substance dependence as the "persistent use of alcohol or other drugs" resulting in "problems related to the use of the substance", as well as

  compulsive and repetitive use which may result in "tolerance to the effect of the

drug and withdrawal symptoms when usage is reduced or stopped" (APA, 1994). While drug dependence can be diagnosed with physiological dependence present, or evidence of withdrawal or tolerance, it may also be diagnosed without physiological dependence. Other criteria necessary for a diagnosis based on the DSM-IV include a combination of three symptom criteria over a twelve month period, including, tolerance, withdrawal symptoms, substance use in greater amounts or over a longer period than initially planned upon, desire to quit or cut down on usage, neglect of important life activities, spending an inordinate amount of time acquiring, using, or thinking about the substance in question, or usage that exacerbates current physical or psychological difficulties (APA, 1994). For the purposes of the study, all patients involved have received a diagnosis of substance dependence from a licensed physician.

- Attachment theory: Attachment theory is a psychological theory, which focuses on the relationships between humans, primarily the infant-child relationship. This theory, first espoused by John Bowlby (1969) suggests that for social and emotional development to occur with a minimum of dysfunction, an infant needs to develop a secure relationship with a caregiver. The pattern established through the development of this primary relationship then impacts future relationships, either positively or negatively, that the individual engages in throughout childhood, as well as adulthood. Several other prominent clinicians and researchers have expounded upon this theoretical base over the last four decades, and attachment theory today has become one of the most commonly used

frameworks to understand both early social development and social interactional patterns throughout the lifespan.

- Individual Psychology: This term generally refers to the holistic and teleological psychological theory developed by Alfred Adler in the early 20th century, which focused on environmental and social forces, and the individual's reaction to them, as the primary determinants of personality development. At the time, this was in direct contrast to the theory espoused by Sigmund Freud, who believed that sexuality and related issues were at the crux of personality development. Adler believed that the individual's creation of reality, or world-view, was formed and shaped by the child's interactions with the primary family unit, and that this world-view, or style of life, was individual and subjective based on the child's experiences and how they perceived them.
- Adlerian lifestyle: The concept of Adlerian lifestyle, or style of life, is one of the primary frameworks by which Adler viewed personality development. It is the way an individual reacts to, and addresses, the three life tasks as delineated by Adler himself, love, work, and friendship. Adler believed the development of this style, which remains relatively stable throughout the lifespan, originated in the early childhood experience, laying the foundation for an individual's personality development. The Adlerian concept of style of life is representative of Adler's holistic view of the human being; that individuals are made up of combinations of various factors and influences, and that they should be seen in this light.
- Mood disorders: Mood disorders are the term used in the DSM-IV to refer to a series of diagnoses in which a pervasive negative pattern in an individual's mood

is determined to be the most prominent feature. These diagnoses can include major depression, dysthymia, and bi-polar disorder.

- Personality disorders: Personality disorders are generally considered a much more severe mental disorder than mood disorders; these conditions are generally seen as pervasive and more associated with the innate personality traits and features of a particular individual. The DSM-IV describes personality traits as severe behavioral “deviations” from “cultural norms”, resulting often in marked dysfunction, either, social, emotional, or vocational in the individual experiencing their symptoms (APA, 1994). Long term patterns of rigidity and in-flexibility in interpersonal relationships and other maladaptive behavior are often hallmarks of these conditions. Diagnoses can include histrionic personality disorder, narcissistic personality disorder, anti-social personality disorder and borderline personality disorder.

CHAPTER 2

LITERATURE REVIEW

Introduction

Substance abuse and co-occurring mental health disorders are some of the nation's most disabling conditions (Center for Substance Abuse Treatment, 2005). Their impact on treatment and prevalence will be explored in the first section of the literature review. Literature on the issue of familial environment and its connection with the development of mental health disorders in individuals will then be reviewed. Parental attachment styles, their role in adult functioning and their links to substance use patterns will be then examined. Finally, Adlerian lifestyle and its connection with attachment theory, development of personality pathology, and substance use disorders will be explored, in order to further highlight the crucial role familial patterns play in the development of adult substance abuse disorders.

Co-Morbid Disorders and Substance Abuse

It has been over thirty years since the issue of co-morbidity and its impact on substance abuse treatment was first explored. Woody and Blaine (1979) began to explore the possibility that depressive symptoms were not purely substance induced, but that they were conditions that may have preceded the individual's development of drug dependence. The difficulties that come with successfully treating the substance dependent client remain, including unstable living arrangements, much lower levels of employment

and higher rates of other serious physiological illness (McLellan, Hagan, Meyers, Randall, & Durell, 1997). However, several studies have identified the need for clinicians and agencies to provide a much broader range of services to these clients (Hser, Polinsky, Maglione, & Anglin, 1999) than is generally seen in traditional substance abuse treatment facilities. Unfortunately, this comes at a time when resources are often stretched to their limit in the substance abuse treatment field (Pringle, Emptage, & Hubbard, 2006). Treatment providers are forced, due to the prevalence of the co-morbid conditions, to address much more than the traditional substance use disorders and the well-documented social problems they entail due to the impact these conditions have on both treatment and the entire recovery process (Flynn, Craddock, Luckey, Hubbard, & Dunteman, 1996).

Thus, there is an increasing need to both determine the levels of co-morbid pathology in the substance abuse treatment setting, as well as create new clinical structures in order to address the myriad of problems they accompany (Flynn & Brown, 2008). While estimates of COD's are widely varied in substance abuse treatment programs, an overview of the studies completed in this area have all indicated high levels of COD's (Cacciola, Rutherford, Alterman, McKay, & Snider, 1996). In an overview of substance abuse treatment programs over the 1980's and 1990's, 50% to 70% of their clients showed lifetime histories of CODs, and an examination of primarily mental health treatment programs during the same time frame reported 20% to 50% of their clients showing lifetime histories of substance abuse or dependence conditions (CSAT, 2005). In another study by McGovern, Xie, Segal, Siembab, and Drake (2006), addiction treatment agency directors, clinical supervisors, and clinicians in a state system were surveyed regarding the prevalence of COD's in their patient populations; 41% were found to have

significant mood disorders, 26% identified as having anxiety or affective disorders, 18% were identified as having significant anti-social personality disorder indicators, and 17% were noted as having borderline personality disorder traits. Similarly high rates of COD's (in the 50% to 70% range) have also been found in outpatient substance abuse treatment settings (Watkins et al., 2004).

Co-Morbid Disorders and Treatment

Although there is a growing need to effectively address COD's in substance abuse treatment protocols, there are also several who urge caution in "lumping together" COD's in terms of understanding their impact on treatment and aftercare. While we do have evidence that notes the overall prevalence of these conditions, as many have noted, conditions such as personality disorders often occur on a spectrum (Millon, 1997), and caution must be used in determining the impact of a specific COD on a substance abuse patient's treatment stay and outcomes. Researchers have emphasized the necessity of focusing on areas of greatest need, prevalence or specific clinical significance in collecting data on COD's in substance abuse treatment settings, due to the myriad of permutations that are present in the interactions between mental disorders and substance use disorders (Watkins, Hunter, Burnam, Pincus, & Nicholson, 2005). In short, a focused approach is not only more preferable in order to implement the most effective practices into a treatment protocol, but evidence points to clear differences in treatment outcomes based on COD diagnoses (Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel, 2003).

There is also significant evidence to show that severity of a patient's drug and alcohol usage may be directly linked to the severity of their primary COD. For example, Flynn et al. (1996) in a sample of 7,400 substance abuse treatment patients, found that

30% to 35% of patients with alcohol, cocaine or opiate dependency showed signs of anti-social personality disorder (APD), 45% with two of the three substance dependence diagnoses showed evidence of APD, and over 60% with all three substance dependence diagnoses showed APD traits. Even in the area of predicting future drug and alcohol disorders among individuals, several well-known longitudinal studies (Grant, Goldstein, Chou, Huang, Stinson, & Dawson, 2009) have positively correlated the presence of severe COD symptoms with future drug and alcohol dependence. Thus, a focus on the role of the most prevalent COD's in treatment, including mood disorders and personality pathology may be the best way to effectively measure their impact on treatment, as well as provide us with clues as to their etiology and relationship with the family structure and environment.

Personality Disorders: Prevalence and Severity

Several longitudinal studies have explored the prevalence of personality disorders and co-occurring substance use disorders. However, several of these (Robins & Regier, 1991, Kessler & Walters, 2002) focused primarily on the presence of APD and borderline personality disorder (BPD). While APD and BPD, as noted earlier, are some of the most commonly occurring CODs found in a substance abusing population sample, other personality disorders are clearly present in many community and clinical samples, thus their impact must also be considered. One study examined the prevalence of 7 of the 10 personality disorders in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM–IV) (APA, 1994) assessed in the 2001–2002 National Institute on Alcohol Abuse and Alcoholism (NIAAA) National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (Grant et al., 2003). The seven personality disorders

examined were avoidant, obsessive-compulsive, dependent, paranoid, schizoid, histrionic and antisocial. The findings indicated that at least one personality disorder was present in 28.6 percent and 47.7 percent of respondents with a 12-month alcohol use disorder and drug use disorder, respectively. Personality disorder presence for participants with drug abuse indicators was 37.8 percent, those with indications of drug dependence had a 69.5 percent rate, and among individuals with alcohol abuse and alcohol dependence, the percentages were 19.8 and 39.5, respectively (Grant, Stinson, Dawson, Chou, Ruan, & Pickering, 2006).

While this study was definitive in a number of ways, including its' comprehensive look at such a large sample of individuals (n=43,093), there are other findings which are of note. Although a community sample may not be indicative of the problem of co-occurring disorders in a treatment setting (many of those in a community setting may never receive treatment), there were startling similarities between the prevalence of co-morbid personality disorders in those seeking treatment and those in the general population. For example, previous research (Nelson, Rehm, Ustun, Grant, & Chatterji, 1999) using the Structured Clinical Interview for DSM–III–R Personality Disorders [SCID–II] to determine the presence of co-morbid personality disorders in a treatment population found a prevalence rate of 39% of personality disorders among alcohol dependent individuals, while the study above noted a 39.5% prevalence rate among their alcohol dependent subjects within the community setting (Grant et al., 2004). For drug dependent individuals, the rate was 59.5% in the Nelson et al. (1999) study; in the Grant et al. (2003) study, the rate was 69.5% (Grant et al., 2006). This may indicate that whether an individual actively seeks treatment for their co-occurring personality disorder

or not, the rate at which they occur in this substance dependent population is similar. The study, which investigates the dynamics of substance abusers in a treatment population, their personality pathology, and its etiology and relationship to the familial structure may both add to the body of literature on the condition as well as guide treatment planning and interventions.

Mood and Personality Disorders: Impact on Treatment and Relapse

Poorer prognoses are common for those individuals in substance abuse treatment who also have a co-morbid mood or personality disorder. One study showed that men who have mild to moderate depressive symptoms (as measured three months post-treatment) are three times more likely to relapse and return to harmful drinking patterns, while men suffering from severe depressive symptoms have been shown to be five times more likely to return to harmful drinking patterns (Curran, Flynn, Kirchner, & Booth, 2000). Another study (Greenfield et al., 1998) showed a positive correlation between a diagnosis of major depression and a return to harmful drinking patterns in a group of 101 individuals assessed at the one-year mark following discharge from residential treatment. Using mood disorder symptomology as the dependent variable, another study (Bobo, MacIlvain, & Leed-Kelly, 1998) revealed that in a group of patients one-year post-treatment, the group having depressive symptomology had a 21 to 28 percent higher chance of relapse than the non-depressive group. Glenn and Parson (1991) came to very similar conclusions, with the underlying factor of depressive symptomology being the strongest predictor of alcohol relapse after 14 months post-treatment.

While other studies have not found this connection between depression and relapse to harmful drinking patterns (Powell et al., 1992; Sellman & Joyce, 1996), these

studies have often used different criteria and methodology, including a diagnosis of lifetime depression; the two listed directly above used samples of only men, whereas the previously mentioned studies were of mixed gender. In regards to personality disorders, several large methodologically sound studies (McKay, Alterman, Cacciola, Mulvaney, & O'Brien, 2000; Janowsky, Boone, Morter, & Howe, 1999; Fisher, Elias, & Ritz, 1998) have shown correlations between relapse into harmful drug use and drinking patterns and personality pathology.

Co-morbidity and Treatment Dropout

Treatment attrition, or dropout, and adherence to aftercare protocols is often a vexing challenge to treatment providers and associated with poorer outcomes and lower quality of life in patients recovering from a substance use and a COD (Brown et al., 1998; Mueser, Drake, & Miles, 1997). This issue is compounded by the fact that several studies have shown significantly higher costs in treatment services and related items for those individuals impacted by CODs (Hoff & Rosenheck, 1999; Westermeyer, Eames, & Nugent, 1998; McGovern et al., 2006).

Thus, despite the literature highlighting this crucial issue in substance abuse treatment, many gaps remain in our understanding of this phenomenon. While certain key components such as training and agency resources may play a role in effective treatment (Gotham, Claus, Selig, & Homer, 2010), in many ways the field does not still have a good understanding of the underlying etiology of this increasingly common condition. For example, while the issue of self-medication (Bolton, Robinson & Sareen, 2009) has been raised as a major factor the high rates of relapse in this population, we still know little about the role other factors may play, such as familial environment and background.

Familial Characteristics: Mood and Personality Disorders

Several studies have noted the relationships between genetics and environment in psychiatric conditions. In the area of psychiatric disorders, the most important of these environmental factors, obviously, is the familial environment. For example, high levels of hostility in families, insecure attachment, negative affective style and over-involvement by family members have all been seen to be predictors of relapse as it relates to bi-polar disorder (Johnson, Lundstrom, Aberg-Wistedt, & Mathe, 2003; Geller et al., 2000) in adult patients. Other researchers investigating the familial environment of adult bipolar patients have found atmospheres marked by less cohesion and more conflict (Romero, DelBello, Soutullo, Stanford, & Strakowski, 2005) as measured by the Family Environment Scale (FES) (Moos & Moos, 2002). Regarding mood disorders, specifically depression, much of the research investigating links between family environment and depression have tended to focus on the issue of adult children of alcoholics, or adult victims of childhood abuse, whether physical or sexual. However, a few studies (Hoglund & Nicholas, 1995; Nicholas & Bieber, 1996) have identified emotionally neglectful or abusive household environments as predictors of adult depressive disorders. Prior research has well documented the individual's lower sense of self-worth and self-esteem as primary facets of depression across the age and gender spectrum (Crocker & Wolfe, 2001). In addition, development of personality disorders in adult children has been positively correlated with familial environment characterized by emotional withdrawal, lack of expression, and denial of the identified patient's feelings (Zanarini, 1997). Still, little research specifically targets the role of the parent's own attachment and lifestyle in the formation of mood disorders and personality disorders in their adult children. The

study attempts to address this deficiency in the literature, while also examining the protective role that positive family environments may have in mediating the relationship between attachment, lifestyle and psychopathological traits in their offspring.

Family Characteristics: Substance Abuse

There has been research performed on the familial characteristics that are prevalent in family environment marked by alcohol and drug dependence and/or abuse. However, much of the literature has been focused around studying the outcomes and characteristics of adult children of alcoholics (ACOA). Some of this research has shown that ACOAs have significantly higher rates of psychiatric disorders, aggressive behaviors, alcohol and drug dependence, as well as personality disorders (Hall & Webster, 2002; Harter, 2000; Loukas, Krull, Chassin, & Carle, 2000). There also has been research conducted on family environments marked by parental alcohol and drug abuse, several finding correlations between this factor and less cohesion, increased conflict, lack of expression, and lack of organization within the family unit (Havey & Dodd, 1995; Yeatman, Bogart, Geer, & Sirridge, 1994). Havey & Dodd (1995) also found that children of alcoholics tended to engage in more delinquent behavior. This is valuable from a family perspective, especially in the area of substance abuse treatment, as the rates of alcohol and drug dependence, as mentioned earlier, are clearly higher in those individuals who grew up in households impacted by significant alcohol and/or drug usage. For a clinician, understanding more clearly the role of their patients' familial drug and alcohol abuse history can be valuable from a therapeutic perspective.

Other studies have indicated that alcohol and drug dependence issues are frequently found in intergenerational patterns (Chassin, Rogosch, & Barrera, 1991; Sher,

Walitzer, Wood, & Brent, 1991). However, much of this research has not been able to single out either genetic or environmental factors as the primary factor in the transmission of alcoholism or drug addiction from one generation to the next (Agrawal & Lynskey, 2008). Research conducted over the last decade, comparing ACOAs to non-ACOAs, has begun to point to other factors that may correlate with poorer life functioning and outcomes in ACOAs. Several studies have concluded that these poorer outcomes (co-morbid disorders, lower life achievement) are primarily related to overall dysfunctional family environments, as opposed to parental alcohol usage itself (Anda et al., 2002; Bijttebier & Goethals, 2006; Scharff et al., 2004). This subject is one that the current study looks to explore; examining the role of the origins of individual pathology by looking at the lifestyle, family environment, and attachment styles of the parents of substance abuse patients.

Parental Attachment Style

Attachment theory, developed through the work of John Bowlby (Bowlby, 1969), is a theory that revolves around the concept of a central figure (in Bowlby's early works on the subject this was primarily the parent or primary caregiver) to which another figure (usually an infant) emotionally attaches to, with the primary goal being security. The attachment styles, which are formed through parental interactions with the child, then go on to play a key role in the child's development of their working models of self (Bowlby, 1973). Although anxiety and grief are noted as common reactions to the departure of a primary caretaker (even temporarily) from a child, consistent neglect and lack of parental attachment was seen as primary to the development of an insecure attachment style, and consequently, more dysfunctional working models of self are fostered within the child as

they develop. While much of Bowlby's work was focused around young children and their interactions with their caretakers, the study of attachment theory has grown tremendously in the last five decades. In the late 1970's, Mary Ainsworth was instrumental in developing specific categories to describe these attachment styles in children; these are known as secure, anxious-ambivalent, and anxious-avoidant attachment styles (Ainsworth, Blehar, Waters, & Wall, 1978).

Attachment theory considers the development of internal working models of self to be a primary outcome of the attachment experience as an infant or child. As Bowlby (1973) noted, issues of attachment remain consistent through adulthood as measures of functioning and are relevant to an individual's views of self and others throughout their lives. In the 1980's, attachment theory was applied to adult romantic relationships, using the three-category model noted above (Hazan & Shaver, 1987). This was the first objective measure of attachment style; Hazan & Shaver (1987) argued that due to that fact that many of key concepts of attachment theory (exploration, loneliness, security) were key issues in romantic or intimate relationships, it would follow that the development of attachment styles in these relationships could be directly related to the development of attachment styles by infants. There was criticism of this model, mainly that the model did not allow for an accurate picture of the quality, or degree of each attachment style that was being measured; for example, regardless of whether an individual agreed with most of the questions in a group, or all, they were classified as being in the exact same attachment style grouping.

This three-category model for adult attachment styles, developed by Hazan & Shaver was once again adjusted in response to some of this criticism; although still firmly

rooted in Bowlby's attachment theory, a four-category model was created (Bartholomew & Horowitz, 1991). This new model development resulted from a growing awareness of the relationship between adult attachment styles, and their impact on interpersonal relationships and overall human development throughout the lifespan. It also allowed the individual's attachment style to be seen in the context of a two-dimensional model, as opposed to the strictly categorical format of the three-category model (Bartholomew & Horowitz, 1991). The four-category model of adult attachment takes the two primary constructs noted above (views of self and of others), and the two styles (either positive or negative). Thus, the prototypes for the four-category attachment model are as follows; secure individuals (positive self, positive other), preoccupied individuals (negative self, positive other), dismissing individuals (positive self, negative other), and fearful individuals (negative self, negative others) (Doumas et al., 2006). These categories, as mentioned earlier, were developed to include both the basic ideas of infant attachment, but also include several patterns of adult behavior in interpersonal relationships. For example, the secure individual expects others to be accepting and responsive, whereas the fearful individual, on the far end of the spectrum, desires intimacy, but has a basic distrust of others. (Doumas et al., 2006).

Although attachment theory has been adapted and re-adapted multiple times, a significant principle of it (view of self and/or others, also characterized as anxiety and avoidance, respectively) can be seen in the theories related to the development of mood disorders, specifically depression (Beck, 1967). Bowlby himself (1980) noted that inconsistent or unreliable parenting or care-giving could be related to a lower view of self as worthy and a lack of trust towards others, with the opposite being true; consistent,

involved parenting could result in offspring with a more positive view of self and an increased capacity to trust others. Studies have shown clear links between generally positive functioning in adulthood and early adulthood and more secure attachment styles (Kenny & Barton, 2002). Earlier research also points in this direction, using the principle that a more secure attachment style results in greater support in addressing issues of stress, creating a more positive sense of self worth, and a lower occurrence of depressive symptoms in young adults (Brack, Gay, & Matheny, 1993, Larose & Boivin, 1997, Papini & Roggman, 1992).

Parental Attachment Style and Substance Abuse

Prior studies examining the role of attachment style in substance use and abuse (Doumas et al., 2006) have been focused on young adults (specifically college students) and adolescents. Adult attachment style has been linked to alcohol use patterns in college students using the traditional three-category model of attachment as delineated by Ainsworth et al. (1978), with some studies concluding that ambivalent attachment was related to drinking problems (Brennan & Shaver, 1995; Cooper, Shaver, & Collins, 1998). Other research, using the four-category model as proposed by Bartholomew and Horowitz (1991), found correlations between fearful and preoccupied styles of attachment and drinking related problems. In contrast, other studies noted students with secure and dismissive styles (McNally et al., 2003; Ognibene & Collins, 1998) had significantly less problems related to their alcohol usage. Additionally, links between increased levels of interpersonal distress in individuals with fearful and preoccupied attachment styles (Haaga et al., 2002) have been noted. These relationships between less secure attachment styles, drinking related difficulties, and increased interpersonal distress

raise the question as to whether or not there are preventative factors within attachment styles that increase positive models of self as they relate to co-morbid disorders and problem drinking patterns. With an estimated 1 in 4 late adolescents and young adults experiencing a depressive episode at some point (Hart, Craighead, & Craighead, 2001), finding relationships between attachment style and mood disorders becomes an even more pressing issue.

Again, despite Bowlby's (1980) assertion that personality across the age spectrum was influenced by attachment styles, and that parental attachment contributes to working models of self (Simons, Paternite, & Shore, 2001), little research has been conducted on how attachment styles have impacted adults beyond their early 20's. In studies involving young adults, (Holmbeck & O'Donnell, 1991; Rice & Cummings, 1996) there were relationships found between lack of congruence in parental and child perceptions of attachment and increased conflict, neither of these studies specifically found relationships between parental attachment style and harmful substance use, substance dependence, or the development of psychopathology by their children (including mood disorders and personality disorders). While negative attachment style has still not been shown to be the cause of problems such as depression (Harter, 1999) or substance dependence, conditions which encompass a much broader range of factors, there have been links found between positive models of self and higher levels of self-worth and self-confidence (Simons et al., 2001). These models have also been seen as moderating the impact of depression on individuals (Simons et al., 2001). If Bowlby and others are correct in assuming that personality (as well as dysfunctional behaviors), are impacted throughout the lifespan by attachment style, it could be possible that a parent's own attachment style could have an

impact, or link to, the life difficulties experienced by their offspring. The study intends to further investigate this gap in the research.

Attachment, Support Systems and the Impact on Treatment

Finally, the impact of support cannot be overemphasized when it comes to the issue of substance abuse, dependence, and the recovery process from these conditions. More secure forms of attachment have been seen as related to greater sense of stability and support, and less secure forms have been correlated with increased interpersonal difficulties, as could be expected. Interpersonal difficulties and lack of sociability have been positively correlated with substance relapse (Hodgkins, El-Guebaly, & Armstrong, 1995), as well as lower retention rates in substance abuse treatment (Doumas, Blasey, & Thacker, 2005; Haller, Miles, & Dawson, 2002). While it has been postulated through earlier research (Rice & Cummings, 1996), that more secure attachment styles among young adults assist in development of coping skills to handle life stressors, and that these securely attached individuals still draw on the positive aspects of the attachment relationship as a source of support, the opposite may be true.

Family Systems and Attachment

Both individuals and families can be seen within a systemic perspective; that is, they are naturally interconnected. This concept, as it relates to these groups, is known as family systems. Based on biological principles (Bertalanffy, 1968), it asserts that to truly understand any living being, one must examine their functioning within the context of the entire unit. The idea is that a family and it's members are not simply individual parts that make up the unit itself; they are intertwined and part of a body that has an organizational

structure, ritual, and rules (Gladding, 2007). Key to understanding the family systems theory is the idea of circular causality (Goldenberg & Goldenberg, 2002); for example, a parent (who may have no history of substance abuse or dependence) of a child with a substance abuse problem may consistently shield (legally, financially, etc.) them from the negative impacts associated with their drug or alcohol use, thus participating directly in a self-perpetuating cycle where the child cannot experience any negative effects of their behavior. The child has no opportunity to develop any degree of insight into the possible consequences of their behavior, and naturally, the dysfunctional behaviors continue. This in contrast to linear causality; using the concept of linear causality, the parent would be seen as directly responsible for the child's drug and alcohol abusing behavior due to their over-protective behavior, including any consequences the child may face as a result, as opposed to simply a participating (albeit important) factor in perpetuating the cycle. Parents with fearful or other undesirable attachment styles may be ill-equipped to form a relationship with their adult children into one that is based around mutual respect and support, as opposed to one that is based purely around safety and comfort, for example. This may then contribute to later pathology and predict drug use patterns in these adult children, which this study seeks to investigate.

Individual Psychology: Adler and the Concept of Lifestyle

One of the few constants in the field of psychology is the concept that human behavior is consistently linked to patterns that developed through early life experiences (Bankhart, 1997). The role that childhood influences play on personality development and associated behaviors is clear through the lens of attachment theory. However, there are other theories, which also focus on the key role of childhood attachment, experiences

and perceptions that also play a role in the development of adaptive or maladaptive behavioral patterns. One such theory is that of Individual Psychology, as defined by Alfred Adler. Originally from Vienna, Austria, Adler was initially a colleague of psychologist Sigmund Freud; the two eventually parted intellectual ways over their disparate views regarding the key components of the development of personality (Ellis, Abrams, & Abrams, 2008). Breaking from Freud's long-standing view that sexuality was the key factor in the development of self, Adler felt that human behavior was non-reductive, goal-driven, and group-oriented.

The basic tenets of Adlerian theory began to develop around the concept that an individual's interactions within the family unit are primary to forming that person's subjective view of reality. In essence, this individual's subject view of reality, or "schema of apperception", is formed by a combination of experiences and perceptions about life and their own role in the world (Peluso, 2006). Adler postulated that this process was not necessarily built around concrete observations and recollections, but in fact their own subjective recollections of what occurred (Adler, 1937). These events take on meaning and "fit in" to that individual's particular worldview, which forms around the age of six. It is at this point that this "schema of apperception" forms the foundation for how the child will adapt their behaviors to begin to form social networks, and consequently how they will fulfill their emotional and physical needs. The development of the schema is firmly rooted in the family unit, as mentioned earlier, and the interactions the child experiences throughout early childhood; and becomes the framework by which the individuals' thoughts, personality and actions form a pattern for how they live their lives (Peluso, 2006). These patterns of thoughts, behaviors and recollections of life then,

according to Adler, form the basis for how they function in society, and remain stable throughout an individual's life (Kern & Peluso, 1999). This concept is commonly referred to as lifestyle, or style of life, and forms the basis for individual psychology and Adlerian theory.

Adlerian Lifestyle, Co-morbid Disorders and Substance Abuse

Lifestyle, or style of life, forms the foundation of individual psychology and Adlerian theory. It is the basis for the individual's coping mechanisms, social interactions, and forms the logic behind the ways that an individual behaves in order to achieve their desired goals and fulfill their needs (Disque & Bitter, 1998). While Adler (1937) firmly believed in the unique aspects of all individual lifestyle, or styles of life, there are clearly common patterns among them that can play a role in identifying similarities that can assist both research and practice. This has a direct relationship to co-morbid disorders; as mentioned earlier, Adlerian lifestyle has often been seen as personality (Ansbacher & Ansbacher, 1956) or personality in action (Lombardi & Melchior, 1996). Several studies have shown relationships between personality traits and substance use disorders, and personality traits have often been shown to be predictors of drug using behaviors, such as frequency of use, drug of choice, and susceptibility to future drug related difficulties (Tremblay & Ewart, 2005; Kashdan et al., 2005; Kirkcaldy et al., 2004).

Another key link between Adlerian lifestyle, substance use and co-occurring disorders can be found in one of the core concepts of lifestyle as proposed by Adler himself. As a teleological, or purpose driven, theory, coping skills and mechanisms form a crucial element in the way an individual's lifestyle should be examined. Adler believed,

much along the same line of reasoning that forms opinions about the origins of addictive behaviors themselves, that addictive behavior begins with a goal to alleviate stress (Ansbacher & Ansbacher, 1956).

Lifestyle and Attachment Theory

Bowlby (1969), the father of attachment theory, felt that attachment style remained stable throughout the lifespan, similar to Adler's theory of lifestyle (Ansbacher & Ansbacher, 1956). Additionally, both theories are based around the principle of early experiences; whereas attachment theory focuses on the bond between caregiver and child as central to the development of positive (or secure) attachment style, Adler's conception of lifestyle also focuses on early childhood development, experience, and recollection as central to the development of a worldview that will help the individual met their own needs (Peluso, Peluso, White, & Kern, 2004b). Even in terms of language to define the two theories, there are multiple similarities. While attachment theorists posit that an individual's attachment style forms the basis for working models of self (and consequently, others) (Simons et al., 2001), the Adlerian believes that lifestyle assists in forming self-governing strategies that form the basis for how an individual adapts to the social and familial environments they are in at a given time (Peluso, 2006). There are additional links, including biological ones; attachment theory (Bowlby, 1969) is clearly grounded in the inherent connection between parent and offspring, while Adler believed humans develop a particular lifestyle in order to increase the natural human desire to belong, and deal with the inferiority and feelings of helplessness that are inherent in the human condition (Peluso, 2006).

Finally, and perhaps most importantly, both theoretical constructs have been seen to significantly impact an individual's well-being and the quality of their lives. Just as attachment theorists have noted connections between positive working models of self and others and lower degrees of life dysfunction (Haaga et al., 2002; Kenny & Barton, 2002), Adler himself believed that a positive style of life was key to successfully addressing the key life tasks of love, work and friendships (Dewey, 1991; Peluso, 2006).

Individual Psychology, Lifestyle and Attachment Theory: Clinical Applications

The similarities between the theoretical constructs of individual psychology and attachment theory are clear. Both focus on stages of life, from early childhood, to early adulthood and beyond, as being the key to the development of lifestyle and attachment style; whereas the attachment theorist may focus on the interactions between child and parent and the Adlerian may focus on the behavioral combinations the child attempts in order to "find their place" in the family; both concepts are markedly similar in terms of their conception of the framework for human development. These similarities also extend beyond the theoretical realm and into the clinical setting.

One example of this is in the similar approaches adopted by emotionally focused therapy (EFT) practitioners and Adlerian, or Individual Psychology, clinicians. Originally designed for working with couples in distress, EFT proponents view attachment theory as an appropriate framework for working with couples; the relationship itself is seen as an attachment bond, and relationships that are encountering significant difficulties are seen as having the same dynamics of an insecure attachment bond (Johnson, Hudsley, Greenberg, & Schindler, 1999). Just as individual psychology practitioners do, there is a clear emphasis on understanding the nature of past experiences as a source of the

couple's current difficulties; while the Adlerian may focus on the teleological (or goal-driven) behaviors, which allow the therapist to see the meaning behind a couple's pattern of interaction, and the EFT therapist sees the goal of the couple's behavior as seeking a more secure attachment style, the clinical approaches are markedly similar. Even the actual process and course of therapy is similar in these two approaches; in the initial stage the Adlerian practitioner will try to identify the client's "private logic" (or the basis for the development of their unique style of life), in order to identify patterns which may be causing the patient (or couple) distress, while the EFT practitioner will focus on the negative interactions between individuals in a relationship as representative of unmet attachment needs (Peluso & MacIntosh, 2007). And in the example used above, couples therapy, the overall goals of both individual psychology and EFT are similar as well; both attempt to give the client insight into their behavior and world view as emblematic of their desire for belonging, and specifically in the context of attachment theory, their desire for an attachment style that meets their needs. Both theoretical constructs, and the clinical application of them, focus on the patient as the "expert" on themselves (Peluso & MacIntosh, 2007), and thus the original starting point for not only understanding their own personal distress, but for enacting change.

Lifestyle and Attachment Theory: Research

For many years little work had been done towards a systematic, empirical analysis of the lifestyle construct (Jones & Lyddon, 2003; Watts & Shulman, 2003), until recently. Kern, Gormley & Curlette (2006) identify some of these studies, and found a total of 42, which fell under the categories of clinical studies, school settings, international settings, organizational settings, normative study, and meta- analysis. In one study (Peluso,

Peluso, Buckner, Kern, & Curlette, 2009), the authors took a comprehensive look at lifestyle profiles, as measured by the BASIS-A Inventory and empirically measured them using a geographically sample of college students. This study, which addressed multiple issues related to valid measurement of the construct, assisted in showing that the instrument could be relied upon to give an accurate lifestyle profile despite geographically diverse subjects. The study is important due to its emphasis on quantifying and measuring the similarities between attachment theory and lifestyle, and assists in providing a methodological basis for future studies using both constructs. The empirical support for the construct of the instrument as an appropriate measure of lifestyle has also been increased by a study (Peluso, Stoltz, Belangee, Frey, & Peluso, 2010) conducting a confirmatory factor analysis to confirm the validity of the scale in this regard.

Peluso et al. (2009), as well as Curlette and Kern (2010) have also both made significant contribution to the empirical literature linking lifestyle measures and attachment measures, noting that several items on the BASIS-A Inventory measure a lifestyle construct that can be equated with the need to belong in one's own family of origin, a key element in development of attachment style. Curlette and Kern (2010) concluded that the need to belong in the family of origin was a much more explanatory concept than that of needed to belong in a group of one's peers, again focusing on the family unit and its primacy as a developmental factor. Another study, examining characteristics of incarcerated individuals, additionally identified possible links between lifestyle concepts and attachment theory (Slaton, Kern, & Curlette, 2000). In this study, the authors identify three distinct groups of inmates, the first being a group that may be

best defined as possibly "choosing" criminal activity as a career, a second more normative group in comparison to average BASIS-A scores, and a third whose profiles indicate some degree of psychiatric disturbance, possibly severe. They postulate that the BASIS-A may be identifying links between these individual's patterns of socialization, development of belief systems, and values; much of this personality development may well be associated with attachment styles formed during childhood. Similarly, Kern & Peluso (2002) used the BASIS-A to analyze lifestyle profiles of a group of domestic violence perpetrators. In conclusion, the authors suggest helping these batterers to identify family atmosphere and family constellation dynamics as a part of their treatment protocol, which could possibly include examination of attachment style and the role it plays in their maladaptive behavior. The BASIS-A has also been found to be a valuable and reliable instrument in identifying the link between addiction and lifestyle (Smith, Mullis, Kern, & Brack, 1999). The instrument has also been seen as a reliable tool for measuring the complex system of beliefs one holds about life, and for an understanding of the private logic that impacts many of the behavioral decisions an individual makes throughout their lives (Choca, 1998).

In regards to other research focusing on lifestyle and addiction, numerous studies using measures other than the BASIS-A have also shown the preventative effect that heightened sociability, flexibility, problem solving and emotional control on development of severe addiction disorders, and conversely the negative impact that neuroticism, withdrawal and lack of emotional regulation have on the addictive process (Cooper, Russell, & George, 1988; Carroll, 1999; Stenbacka, 2000). Thus, the coping skills that have been seen to reduce, or increase, the impact or susceptibility to development of

addictive disorders may be also a product of the individual's lifestyle or style of life. Despite these links, addiction related research using lifestyle as a key variable remains sparse.

Conclusion

As shown in this chapter, there are multiple parallels and correlations between the constructs of attachment theory and Adlerian lifestyle. Bowlby (1969) and Adler (1937) both firmly believed that these constructs hold steady as measures of and forces behind behaviors, thoughts, and beliefs that remain central to the individual's functioning over the course of the life span. They not only contribute to the development of healthy, adaptive behavior within societal and family structures, but can also contribute to the development of maladaptive behaviors and even harmful levels of pathology. If, in fact, these constructs remain steady over a lifetime, it would also follow that there may be generational links and correlations between lifestyle and attachment style of parents, and the overall functioning of their offspring.

In addition, the research supports both the connection between personality, substance use and pathology, along with the link between attachment and Adlerian lifestyle, as measurable constructs. The study seeks to investigate these factors and contribute to the body of knowledge in this area.

CHAPTER 3

METHODOLOGY

In the following chapter, the procedures and measures that were used in the study will be delineated. This includes the research study participants, methods used for obtaining the sample, instruments used, procedures, and a brief overview of the proposed data analysis.

Study Participants

The participants in the study came from two groups; one, adult patients in a residential substance abuse treatment facility in southeastern Florida, and two, their parents who participated in a week-long family program at the facility itself. The patients all received diagnoses of substance dependence upon their admission to the facility. The parents whom have agreed to participate in the study, and signed the appropriate consent forms, were then included in the study. This form includes contact information for the principal investigator if the need arises to contact him with any questions regarding the study or their participation.

Study Participants: Description

All participants in the study, both patients and their parents, are adult males and females, who are above the age of 18 and able to give prior legal consent to allow their information to be used in the study. No random controls or sampling were implemented during the study; all subjects that wish to participate in the study who have given prior

contest were sampled, and the results of their instruments were used in the statistical analysis.

The study group, patients and parents, come from a primarily middle class socio-economic demographic group. Race and ethnic groups are represented at the facility at a rate generally the same as that of the general population of the United States as a whole, with a slightly higher percentage of White, or Caucasian/European individuals expected to participate in the study, due to their slightly higher percentage within the facility as a whole.

Study Participants: Procedure/Guidelines for Administration of Instruments

Parents who are attending the family week activities were given a packet with the study instruments, by the co-investigator, upon the commencement of the week's educational sessions. They were instructed to return said packets (following their completion) to the co-investigator at a time designated by him, with the active cooperation of treatment center staff.

All participation by both patients and parents involved in the study purely voluntary; any refusal to participate in the study in no way impacted in any manner, the patients' normal course of treatment or their parents' participation in the family week educational programming. Patients and parents participating in the study were given clearly designated contact information for both the principal investigator and treatment center staff to contact if they have any questions regarding the study, or if they wish to withdraw their participation at a later date. Any and all identifying information related to individuals participating in the study will remain confidential; following completion of

the instruments and collection of them by the principal investigator they will be stored in a locked, secure location that can be accessed only by the principal investigator. All other information related to participant confidentiality, instrument distribution, and collection followed strict legal and ethical guidelines and abided by all regulations related to the conducting of research studies as delineated by the policies and procedures of the Institutional Review Board of Florida Atlantic University, Boca Raton, FL.

Instrumentation/Measures

Several instruments were used in the study; four for the parents participating, and two for the patients participating. The instruments are delineated below, beginning with the instruments that the parents completed.

Demographic Information Form

A form was completed by the parental unit that identifies several pieces of demographic information. This includes age, relationship with the identified patient in treatment, gender, ethnicity, educational attainment, total annual income, marital status and number of people in the immediate family unit. Data collected from this form was used during the statistical analysis, using multiple regression techniques, in order to identify any patterns or correlations that exist between the identified patients' personality profiles and psychosocial data and their parents' demographic profiles.

Family Environment Scale – Form R

The Family Environment Scale (FES) (Moos & Moos, 2002) is a 90 item scale, divided into 10 subscales, which was developed to assess family functioning and social climate. The three versions of the FES are as follows; the Expectations Form (FES-E),

the Ideal Form (FES-I) and the Real Form (FES-R). The parents involved in the study completed the FES-R.

The FES-R scale is being utilized in the study as it is designed to measure the individual's perceptions and attachment to their family unit as it is now, and it is based around family systems theory. Family systems theorists generally describe a well-functioning family unit as one that strikes a balance between enmeshment and disengagement. Family systems theory is firmly rooted in the idea that the individual cannot be understood in the isolation from each other – families are systems of interconnected and interdependent individuals who cannot be understood fully in separation from each other. A family's growth and development, whether the positive or in a dysfunctional sense, is a reflection of each member's behaviors, attitudes and perceptions of the family unit and environment.

Moos (1974), the developer of the FES-R, was among the first to advocate for this new way of looking at the family unit, which he called "family climate". Moos believed that family units and the way their role was seen had been oversimplified, into high versus low control or acceptance versus rejection. The FES-R is organized under three categories; Relationship, Personal Growth, and System Maintenance with the 10 subscales within these 3 dimensions, as seen in Figure 1:

Figure 1

FES-R Categories	Corresponding Subscales
Relationship	Expression, Cohesiveness, Conflict
Personal Growth	Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active Recreational Orientation, Moral-Religious Orientation
System Maintenance	Organization, Control

In the Relationship category, the three subscales are Expression, Cohesiveness and Conflict. The Conflict subscale is designed to measure open conflict or anger within the family unit, the Expression subscale is designed to measure the degree to which family members can openly express their feelings to one another, and the Cohesiveness scale is designed to measure intra-family support systems and the degree to which family members are committed to assisting one another (Moos & Moos, 2002). Under the Personal Growth dimension, the subscales are Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation and Moral-Religious Emphasis. The Moral-Religious Emphasis scale measures the degree to which moral and religious values are emphasized within the family unit, and the Active-Recreational Orientation scale measures the degree of participation in social and recreational activities by the family (Moos & Moos, 2002). Achievement Orientation is designed to assess to what degree activities are placed within a competitive framework, such as school or work activities, and the Intellectual-Cultural Orientation measures the family's involvement or interest in political, cultural and intellectual type pursuits. The Independence scale

measures the degree to which family members are assertive, self-sufficient, and can make their own decisions. The third dimension of the FES-R, System Maintenance, includes the subscales Organization and Control. The Control subscale is designed to measure the role rules and procedures play in the household functioning, and the Organization subscale measures the importance of order and structure within the day-to-day activities of the family unit (Moos & Moos, 2002).

The subscale alpha coefficients reported for the FES-R are as follows; Independence (.61), Achievement Orientation (.64), Active-Recreational Orientation (.67), Control (.67), Expressiveness (.69), Conflict (.75), Organization (.76), Cohesion (.78), Intellectual-Cultural Orientation (.78), and Moral-Religious Emphasis (.78) (Moos & Moos, 2002). Test-retest reliability coefficients for the subscales over a one year period ranged from .53 (Conflict) to .84 (Moral-Religious Emphasis) (Moos & Moos, 2002). Several studies have shown that a three-factor solution best characterizes the instrument, through the Relationship, Personal Growth and System Maintenance dimensions (Gondoli & Jacob, 1993; Kronenberger, Thompson, & Morrow, 1997). The scores are calculated by adding them in the direction indicated on the scoring sheet; they are then converted to a standard score. A high score indicates that the individual who took the test strongly identifies with the family environment variable that the subscale (or dimension) represents.

Several subscales of the FES-R, including Cohesion, Expressiveness, Organization, have been found to positively correlate with secure attachment styles (Armsden & Greenberg, 1987). Moos & Moos (2002) additionally noted that FES scores corroborate well with trained individuals' assessments of overall family function.

BASIS-A Inventory

The Basic Adlerian Scales for Interpersonal Support – Adult Version (BASIS-A), is one of the most commonly used measures of Adlerian lifestyle used today. While the structured lifestyle interview was, and is, still considered a valuable tool in the clinical setting, the lack of a measurement instrument for Adlerian lifestyle hampered research efforts in the field of individual psychology and created difficulty in making group comparisons (Wheeler, 1979). The BASIS – A Inventory (Kern, Wheeler, & Curlette, 1997) was constructed, in part, to alleviate some of these concerns.

The BASIS-A Inventory (Wheeler et al., 1993) is a 65-item inventory that is designed to assess the Adlerian lifestyle of the individual completing the inventory. The individual is asked to reflect on their childhood experiences, and all of the questions begin with the prefix "when I was a child, I" (Peluso et al., 2009). Questions are answered on a Likert scale system of one to five, ranging from Strongly Agree to Strongly Disagree. The scores are then added, and interpreted through five personality scales, designed to identify specific features of the individual's Adlerian lifestyle. These are; Belonging and Social Interest (BSI), Going Along (GA), Taking Charge (TC), Wanting Recognition (WR), and Being Cautious (BC) (Peluso et al., 2009).

The higher the score on the BSI scale, the more likely the individual is more extroverted, prefers communal problem solving strategies, and may have more refined social skills. The lower scoring individuals may be those who prefer a less-stressful work environment, prefer to work alone, or rely more on themselves than others (Peluso, Peluso, Buckner, Curlette, & Kern, 2004a). The GA scale high scoring individuals

generally prefer a structured environment, avoid conflict, and are focused on rules, whereas the lower the score indicates an individual more likely to be rebellious or tolerate ambiguity well (Peluso et al., 2004a). The TC scale high scoring individuals may have more leadership traits and prefer to tell people what to do, while a low score may indicate an individual who avoids leadership roles (Peluso et al., 2004a). The WR scale high scores generally suggest an individual who needs validation, and tends to focus on personal success and achievement, whereas lower scoring individuals do not have a need for outside validation and may be seen as aloof or uncaring (Peluso et al., 2004a). Finally, individuals scoring high on the BC scale may have a suspicious approach to individuals and issues in general, while a low score indicates a more trusting, flexible and optimistic outlook towards life (Peluso et al., 2004a).

Reliability coefficients for the BASIS-A have been reported to range from .82 to .87, and the test re-test coefficients ranged from .70 to .80 (Peluso et al., 2004a; Curlette, Kern, & Wheeler, 1993; Peluso et al., 2009). The issue of invariance, or the item structure across groups, has also been addressed in the last several years through the literature (Peluso et al., 2004a; Peluso et al., 2009). Curlette et al. (1993) also validated the five scales of lifestyle against the personality profiles of the Minnesota Multiphasic Personality Inventory (MCMI) and the Millon Clinical Multiaxial Inventory (MCMI), two widely used and highly respected psychometric instruments designed to identify personality traits in clinical settings ranging from corrections to substance abuse treatment facilities.

Experiences in Close Relationships Inventory – Revised

The Experiences in Close Relationships Inventory – Revised (ECR-R) is one of the most widely used and respected instruments designed to measure adult attachment styles. The ECR-R (Fraley, Waller, & Brennan, 2000) is the updated version of the Experiences in Close Relationships Inventory (ECR), originally developed and published in 1998 (Brennan, Clark, & Shaver, 1998). The ECR was originally developed by the authors to provide a reliable measure of both adult romantic and adult interpersonal attachment, and it has since become the standard for measurement in the field of attachment study. The authors, after an exhaustive literature review, came up with 323 items, divided into 60 subscales; this proved to be the largest analysis to date, and helped to eliminate some of the redundancy that was common in other attachment measurements. The multidimensional nature of the test allowed for a more accurate reading of the degree to which an individual "fits in" to a certain attachment category, not simply whether they are, in a general sense, part of a certain attachment style group (Fraley & Waller, 1998).

The original ECR scale (Brennan et al., 1998) was developed using attachment as the principal theoretical base. As others before them however (Bartholomew & Horowitz, 1991), the authors felt that there were four possible attachment styles which matched with the anxiety and avoidance subtypes, creating a four category model; the anxiety dimension, including fear of rejection and abandonment, and the avoidance dimension, including discomfort with closeness, and discomfort depending on others (Brennan et al., 1998). The ECR-R maintained the same basic structure, retaining a majority of the items, using item response theory (IRT) as the basis for revision (Fraley et al., 2000). The scale

itself consists of 36 items divided into groups of 18 (which fit under the anxious and avoidant dimensions), and is a self-report instrument that uses a Likert scale (1-7). As mentioned earlier, the use of the Likert scale measurement allows for a more in-depth assessment of the degree to which an individual fits into a certain category, not just assessing their general attachment style.

The ECR-R has been found to have excellent psychometric properties (Fraley et al., 2000). Alpha levels have been reported as .90 or above, for both the anxiety and avoidance dimensions (Fraley et al., 2000), by the test designer. While it has been seen as measuring insecure attachment styles more readily than secure attachment styles the IRT method used to revise the instrument appears to have addressed some of these concerns (Fraley et al., 2000). Test-retest reliability, as well as convergent and discriminant validity have all been shown to be very high in a large sample study (Sibley, Fischer, & Liu, 2005). Another study has also indicated that the dimensional format (as opposed to categorical) seems to better measure the true nature of adult attachment style (Ross, McKim, & DiTommasso, 2006; Peluso et al., 2009).

Psychosocial Interview

The psychosocial interview, administered to the patients involved in the study upon their admission to the treatment program where the study was conducted, was used as one of the patient testing instruments. A clinical staff member completes this document, approximately 7 pages long, following an initial interview with the patient. Basic demographic information is taken, along with other data that was used in the study, including, but not limited to; drug use history, drug of choice, co-occurring disorder

history, family structure, family history of substance use, treatment history of the patient, employment and educational history, reasons of admission into treatment, and history of abuse or neglect.

Millon Clinical Multiaxial Inventory - III

The Millon Clinical Multiaxial Inventory - III (MCMI - III) was also completed by all patient participants in the study, and is given to patients by staff members upon entry into the program, to be completed and used for both clinical application and in the study. It was used to primarily assess the substance usage and mental health profile of the patients involved in the study.

The MCMI is one of the most commonly used self-report instruments in clinical settings over the last 25 years (Campbell, Nieberding, & Hallmark, 1995; Choca, 2004), with several hundred journal articles being published on the instrument and its' properties since its' inception in 1977 (Craig, 1997). It has been translated into multiple languages (Mortensen & Simonson, 1991), and is a staple of most psychological testing textbooks and manuals (Millon & Davis, 1995, 1996, 1997). This test has also been frequently used for studying the mental health and substance abuse characteristics of both in and outpatient substance abuse treatment clinical samples (Calsyn, Wells, Fleming, & Saxon, 2000; Teplin, O'Connell, Daiter, & Varenbut, 2004). The MCMI-III is the third version of the instrument, which has undergone significant changes since it was first created by Millon (1983), and revised into the second version (Millon, 1987). However, while certain items and factors have been given different weight and importance in the overall structure of the test, it remains a highly reliable instrument for discerning personality

traits within a clinical sample (Craig, 1999). While not originally intended to correspond directly with traditional psychological disorder classifications, it has continued to mirror closely these classifications as they are detailed within the DSM-IV (APA, 1994), adding credibility to comparisons with traditionally diagnosed psychiatric conditions (Craig, 1999).

The theoretical basis of the test itself is based around Millon's bio-evolutionary theory of personality development (Millon, 1968). This is a holistic theory, much like Adler's individual psychology, that stipulates the psychological difficulties of any particular individual must be seen in the context of the entire individual. Millon theorized that the laws of nature postulated three basic "survival aims"; these survival aims are maintaining existence, adapting to the environment, and replicating the species, which apply, of course, to the human being as well. He also specified how these aims worked in the psychological makeup of the human being; maintaining existence encompasses gaining pleasure, enhancing life, or merely surviving (which causes pain). Adaptation to the environment refers to whether one works to better, or change, their condition or simply passively lets it change them, and replication of the species is generally seen through the lens of whether one is focused on self or others (Strack, 2002).

Through this theory, Millon identifies five "reinforcements" and two "coping styles"; the reinforcements being independent, ambivalent, dependent, discordant and attached, and the coping styles consisting of active and passive (Strack, 2002). This creates the five by two matrix through which Millon saw the development of personality traits, and subsequently, disorders within the human being (Strack, 2002). Additionally,

Millon (1968) noted that the development of personality pathology exists on a spectrum; that is, that normal, functioning persons may have very similar traits as a pathological, dysfunctional individual, the difference being that the first individual may be able to much more effectively adapt to his or her environment. The theory, and Millon's instrument that was developed as a result, postulates that personality traits and pathology exists on a spectrum, and are not fixed measures (Millon, 1968).

The instrument itself has 175 questions, with a true or false format, consisting of a total of 28 scales. This consists of 14 personality disorder (PDs) scales, 10 clinical syndrome scales (CSs), and four modifying indices (MIs). The T score compiled after the test is then converted into a base rate (BR) score, which is then placed on a scale of 0-115. Generally, scores of less than 75 are not considered to be clinically significant indicators of the condition being measured, while scores of 75 to 85 indicate a significant presence of the condition, and scores of 85 or above are considered to be very significant indicators of the presence of the disorder being measured.

While Millon (1987) himself felt strongly that misrepresentation on psychometric testing in general had a negligible impact compared to what the testing actually revealed about the patient themselves, his modifying indices were applied to the instrument to actually adjust for these types of factors. These four modifying indices are Debasement, Disclosure, Desirability and Validity. Of these four, only three are generally used in the test interpretation; the Validity scale is designed to detect at least one unusual answer on the three-item index, which then would invalidate the test results. The Debasement and Desirability scales are used to determine the degree to which the patient is over or under

reporting their symptoms or emotional turmoil, and a very high score on the Disclosure scale will also invalidate the test (Craig, 1999). Studies have shown that the MCMI, based on these indices, has been able to detect fake-bad responses better than fake-good responses (Bagby, Gillis, Toner, & Goldberg, 1991; Retzlaff, Sheehan, & Fiel, 1991). Based on the degree to which the Debasement and Desirability scales are higher or lower than the cutoff for clinical significance, studies have used this factor in considering the clinical significance of a particular scale (Vanem, Craig, & Hortman, 2008; Horton et al., 2009). The internal consistency of the MCMI has been found to range from .66 to .89 (Millon, Millon, & Grossman, 2006). The test-retest reliability of the MCMI has been found to range from .19 (Passive-Aggressive scale) to .91(Histrionic scale), with an average test interval of 3 months. A recent study (Rossi, Van den Brande, Tobac, Sloore, & Hauben, 2003) of a large correctional sample also showed good validity across measures (MMPI-2), with a range of .56 (Narcissistic) to .75 (Borderline).

Procedures

The study participants come from two groups; one, the parents of individuals enrolled in a residential substance abuse treatment program who are participating in a week long psycho-educational family program, located at the facility, focusing on the family impact of addiction, two, the patients themselves, who are enrolled in the program. The parents of the patients have voluntarily enrolled in the family, have agreed to participate in the study, and have completed the appropriate informed consent documentation allowing their participation. The patients have all been admitted and been receiving treatment at the facility for at least 2 weeks before having their families participate in the program.

The parents were all administered the BASIS-A inventory, the ECR-R and the FES, along with the demographic information sheet, during the weeklong program, by clinical staff members at the program. The patient group will have the MCMI-III and the psychosocial note administered shortly following their admission to the facility. All of the patients and their corresponding parents have unique identification numbers, and their files were collected and kept secure by the chief investigator with all information remaining confidential.

Data Analysis: An Introduction to Mediation

The field of behavioral science has long been interested in the idea of finding out the details of the relationship between an independent variable (X) and a dependent variable (Y). Obviously, establishing a relationship between variables is the most important factor in behavioral research, as establishing a correlation between two variables is a necessary step to inferring that there is a causal relationship between two factors. However, of primary interest to most researchers is to gain a greater understanding of how or through what mechanism these two variables act on each other. Simply knowing that two variables are interrelated in some way does not answer these questions. Especially in the area of theory driven research, where a hypothesis is established by showing evidence that there may be other factors that could possibly influence the impact of X on Y, or outcome, the concept of mediation may be taken into consideration.

Mediation is the process by which some variables exhibit some degree of influence on another set of variables through intervening variables. Mediation based hypothesis ask how, and by what means, X affects Y through a single (or multiple)

mediating variables (M). For example, in the study, the author has shown evidence that family environment may have an impact on the development of psychopathology, that attachment styles may exert influence on substance abuse patterns and the behavior associated with them, and that measured Adlerian constructs of lifestyle may have some impact on both. Using the process of mediation analysis is a statistically sound method to begin to understand to a greater degree how these factors may be inter-related and specifically, to what degree some of the variables may act as indirect influences on the overall relationship between the IV and the DV in a particular study. One of the most important factors in using a mediation model in data analysis is that the proposed mediation model must have a theoretical basis; it is important to establish evidence that the overall effect of the IV on the DV may be impacted in some way by another set of outside variables or factors (Azen, 2003). Mediation that involves only one mediator variable is called simple mediation; this is designed to show the both the indirect effect of X on Y (through M), as well the direct effect that X has on Y. It additionally gives the researcher a total effect, which calculated as the sum of the direct and indirect effects. Overall effects (X to M, M to Y, direct effects of X on Y) are shown in the statistical output as regression coefficients.

Mediation: Theoretical Constructs

Numerous different theories have been proposed regarding how to effectively analyze a mediation model (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The most popular, and commonly used in the behavioral sciences is the causal steps strategy (Baron & Kenny, 1986). This theory focuses primarily on the individual paths, requiring they all reach acceptable levels of significance (i.e., X to M, M to Y controlling

for X, X to Y), in addition to requiring that the influence of X on Y is lessened significantly when M is added to the equation. However, over the last 15 years several individuals have disputed the claim that a direct effect from X to Y is necessarily a prerequisite for conducting a mediation analysis (Collins, Graham, & Flaherty, 1998; MacKinnon, 2000; MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002).

Several approaches to mediation models focus not on the individual paths in the mediation model but instead on the product of the two pathways through the mediator (X to M + M to Y, or ab), positing that this total is equal to the difference between the total and direct effect. Sobel (Sobel, 1982) developed an approach that focused on this interpretation of the mediation model, commonly referred to as the product-of-coefficients approach. By calculating the ratio of ab to it's estimated standard error (SE), a p value for this ratio is computed in reference to the standard normal distribution of the data; a significant p level indicates that mediation has occurred due to the inclusion of M in the model. However, due to the fact that the sampling distribution is considered normal only in large samples, several have expressed concern over computing a p effect for the indirect effect of M on the relationship between X and Y (MacKinnon et al., 2002; MacKinnon, Lockwood, & Williams, 2004).

The resampling procedure known as bootstrapping is another method used in the application of mediation analysis that is not based on having a normal sample distribution. Bootstrapping repeatedly samples from a given data set and then estimates the indirect effect of M on the relationship between X and Y in each set of data. When this procedure is repeated thousands of times (5,000 generally being the most common),

the approximate distribution of ab is calculated and confidence intervals (CIs) are presented indicating the presence of any indirect effects of M on the relationship between X and Y. Bootstrapping has been shown to have significantly lower Type 1 error rates and greater power than either the causal steps approach or the Sobel method (MacKinnon et al., 2002; MacKinnon et al., 2004).

Multiple Mediation, Lifestyle, Attachment Theory, Family Environment and Characteristics of Substance Abusers in In-patient Treatment

Parallel multiple mediation, where multiple variables (M) are theorized to effect the relationship between X and Y, is considered to be a valid method of statistical measurement for the study due to several factors that are specific to the study. One, the research questions as proposed in chapter 1 are theoretically based, and are not exploratory in nature; i.e., there is a relationship between a parent's attachment style and increased pathology among their offspring, there are relationships between the style of life of parents and their and psychopathological features, etc. By testing the total indirect effect of X on Y, the researcher is essentially conducting a regression analysis with several predictors, with the aim of determining whether an overall effect exists. Two, the structure allows for a closer look at the regressions between factors in the equation; for example, what is the degree to which each of the factors, such as style of life and attachment styles of parents, are related to the psychopathology of their adult children in substance abuse treatment. Dependent on the other mediators in the model, we can see more clearly what impact a specific M, independent of the other mediators, has on the model. Third, the study looks to discover what the total effect of family environment in

on the relationship between lifestyle, attachment, and their children's psychological traits are, which multiple mediation allows for.

CHAPTER 4

RESULTS

In the following chapter, the results of the study will be delineated. This includes the demographic characteristics of the participants, descriptive statistical data, correlational relationships, and significant findings within the data set as they relate to Hypothesis 1 and 2.

Demographics

The final sample resulted in 37 parents and 28 of their adult children in substance abuse treatment (n=65) at the time of the parents' participation in the family week program at the facility where the study was conducted. Demographic information and frequencies are provided for the children group and parent group in Tables 1 and 2, respectively.

As for the adult children, the mean age of the group was 25.68 years, and there were more males (64.3 % to 35.7%) than females. The vast majority (85.7%) reported as being never married, and there was one each in the groups classified as married, divorced, separated, and living together/not married. Half (50%) listed their drug of choice as opiates, with alcohol in second with 21.4% of the participants. Half of the patient group reported as having up to 12 years of formal education, with the other half reporting up to 16 years; two (7.1%) of the group noted having received 16 years of

formal education. The sample was overwhelmingly Caucasian/White, with only one patient identifying as Hispanic.

The parental group, consisting of 37 individuals, had a mean age of 57.49, with a mean educational attainment of 14.81 years. The entire sample (100%) identified as Caucasian/White, and 62.2% were female. 78.4% reported as being married, and 75.7% reported as having annual incomes of over $75,000. Eight, or 21.6%, did report having a "substance abuse problem" at some point in their lives.

Table 1
Adult Children Demographics

Variable	n	%
Gender		
Female	10	35.7
Male	18	64.3
Drug of Choice		
Polysubstance	4	14.3
Alcohol	6	21.4
Opiates	14	50.0
Cannabis	2	7.1
Benzodiapzepines	1	3.6
Cocaine	1	3.6
Years of Education		
9 to 12	14	50.0
12 to 16	14	50.0
Marital Status		
Never Married	24	85.7
Married	1	3.6
Divorced	1	3.6
Living Together, Not Married	1	3.6
Separated	1	3.6

Table 2
Parental Demographics

Variable	n	%
Gender		
Female	23	62.2
Male	14	37.8
Total Annual Income		
$15,000-$35,000	4	10.8
$35,000-$55,000	1	2.7
$55,000-$75,000	4	10.8
< $75,000	28	75.7
Substance Abuse Problem in Lifetime		
Yes	8	21.6
No	29	78.4
Years of Education		
9 to 12	14	37.8
12 to 16	13	35.2
< 16	10	27.0
Marital Status		
Never Married	0	0
Married	29	78.4
Divorced	6	16.2
Separated	1	2.7
Living Together, Not Married	1	2.7

Descriptive Statistics: Means and Standard Deviations of Instruments

As noted previously in Chapter 3, all participants, both adult children and their parents, received a series of instruments to complete. The means and standard deviations of these instruments are noted in Tables 3 and 4, respectively. In terms of the instruments completed by the adult children, the means of both the MCMI Antisocial and Borderline scales both approach clinical significance (Millon & Davis, 1997), while the MCMI Depressive, Dysthymia and Major Depression scales are slightly below what is generally considered to be clinically significant, although they are close. In regards to the instruments completed by the parents, the ECR-R Anxiety scale (mean of 51.7) and the

Avoidance scale (mean of 54.84) do not reflect particularly high levels of the presence of either, based on the mean scores, within this particular group. However, the standard deviations for Anxiety (25.676) and Avoidance (20.118) do indicate the wide range of different attachment styles as reported by the parental group, as could be expected.

Table 3
Adult Children Millon Multiaxial Clinical Inventory III (MCMI-III)

Measurement	n	Mean	Standard Deviation	Variance
MCMI-III				
Depressive	28	64.64	25.781	664.683
Dysthymia	28	66.39	18.444	340.173
Antisocial	28	83.50	15.436	238.259
Borderline	28	70.32	15.183	230.522
Major Depressive Disorder	28	64.04	19.862	394.480

Table 4
Parental Experiences in Close Relationships Inventory Revised, Family Environment Scale, and Basis-A

Measurement	n	Mean	Standard Deviation	Variance
Experiences in Close Relationships Inventory Revised				
Anxiety	37	51.70	25.676	659.270
Avoidance	37	54.84	20.118	404.751
Family Environment Scale				
Cohesion	37	47.59	16.490	271.914
Expressiveness	37	45.78	14.580	212.563
Conflict	37	52.38	12.166	148.020
Independence	37	48.89	12.165	147.988
Achievement Orientation	37	48.81	11.125	123.769
Intellectual Cultural Orientation	37	41.32	13.377	178.947
Active Recreational Orientation	37	45.51	12.808	164.035
Moral Religious Emphasis	37	47.08	8.427	71.021
Organization	37	49.81	11.949	142.769
Control	37	49.70	9.746	94.992
Basis A				
Belonging Social Interest	37	33.57	5.156	26.586
Going Along	37	31.70	5.076	25.770
Taking Charge	37	19.54	6.694	44.811
Wanting Recognition	37	42.24	5.214	27.189
Being Cautious	37	16.22	7.012	49.174

Data Analysis

Following the collection of the data and the compilation of the demographic statistics and the means and standard deviations of the individual instruments completed by the participants, each SPSS dataset was combined to conduct correlational analysis and the subsequent bootstrapping, multiple regression and mediation modeling and previously discussed in Chapter 3. Each patient who had two parents attending the family week educational sessions was entered twice, in order to allow for more accurate modeling and data analysis. Correlational analysis formed the basis for mediation modeling, in combinational with the theoretical basis of the hypothesis; thus the mediation models, while specifically adhering to the theoretical basis proposed in the hypothesis presented in Chapter 1, were constructed based on the possible pathways suggested by the correlational relationships. Table 5 shows some of the more significant relationships between the dependent variables (patient psychological traits) and independent variables (parent attachment style scores) and Table 6 shows the relationships between the dependent variables and the second set of independent variables (parental lifestyle scores).

In terms of correlational relationships between patient MCMI scores and parental attachment styles, no significant relationship was found between MCMI Depressive scores and ECR-R Anxiety or Attachment scales; however, several other items were correlated. Patient MCMI Dysthymia scores and ECR-R Avoidance scores were significantly correlated, $r=.303$ ($p<.05$), MCMI Antisocial scores were negatively correlated with ECR-R Anxiety scores, $r=-.363$ ($p<.05$), and MCMI Borderline scores were positively correlated with ECR-R Avoidance scores, $r=.315$ ($p<.05$).

In Table 6, showing the correlational relationships between parental lifestyle scores and MCMI patient scores, no significant relationships were found between MCMI Depressive or Dysthymia scores and Basis-A lifestyle instruments completed by the parents. However, MCMI Antisocial scores were negatively correlated with parental Basis-A Belonging Social Interest scores, r=-.362 (p<.05), Basis-A Being Cautious scores, r=-.319 (p<.05), MCMI Borderline scores were positively correlated with Basis A Wanting Recognition scores, r=-.315 (p<.05), and MCMI Major Depression scores were negatively correlated with Basis A Taking Charge scores, r=.-414 (p<.01).

Table 5
Correlations MCMI-III Attachment Scores

Measurement	1	2	3	4	5	6	7
1. MCMI Depressive	-						
2. MCMI Dysthymia	.556**	-					
3. MCMI Antisocial	-.223	-.200	-				
4. MCMI Borderline	.390**	.570**	-.042	-			
5. MCMI Major Depression	.063	.533**	.042	.303*	-		
6. ECR-R Anxiety	.103	.135	-.363	.101	-.274	-	
7. ECR-R Avoidance	.231	.303*	-.261	.315*	-.074	.532**	-

Note: p<.01**, p<.05*

Table 6
Correlations MCMI-III Lifestyle Scores

Measurement	1	2	3	4	5	6	7	8	9	10
1. MCMI Depressive	-									
2. MCMI Dysthymia	.556**	-								
3. MCMI Antisocial	-.223	-.200	-							
4. MCMI Borderline	.390**	.570**	-.042	-						
5. MCMI Major Depression	.063	.533**	.042	-.303*	-					
6. Basis A BSI	.101	.084	-.362*	-.052	.015	-				
7. Basis A GA	-.600	-.400	.274	.201	.192	-.167	-			
8. Basis A TC	.115	.115	-.122	-.061	-.414**	.323*	-.593**	-		
9. Basis A WR	.019	.009	-.007	-.315*	.103	.070	.322*	-.107	-	
10. Basis A BC	-.034	-.035	-.319*	-.054	-.142	-.279*	-.416**	.128	-.279*	-

Note: p<.01**, p<.05*

Mediation models and multiple regression analysis were then conducted, with the use of models based on the theoretical construct of the hypotheses, concentrated on the

pathways identified in the correlational analysis. As discussed in Chapter 3, all direct effects, indirect and total effects of the dependent variable were calculated using a resampling, or bootstrapping, technique (Preacher & Hayes, 2004, 2008; Preacher, Rucker, & Hayes, 2007). Bootstrapping is a nonparametric re- sampling method that tests for indirect effects of mediation; it also combines the functions of a path analysis model and multiple regression analysis. A major advantage of using bootstrapping is that it does not assume normality of the distribution of the sample size, regardless of size. It uses its own sample to generate multiple re-samples from the data set. The bootstrapping method thus corrects biases in small sample sizes; the confidence intervals are then used to show an unbiased estimate of model fit. As opposed to the casual steps and Sobel (Sobel, 1982) method, bootstrapping provides a more realistic assumption regarding the shape of the sampling distribution and has been shown to have significantly more power and less Type 1 errors (MacKinnon et al., 2002; MacKinnon et al., 2004) than either the Sobel method or the causal steps method. As Preacher and Hayes (2004, 2008) have noted, mediation (the specific indirect effect of the specified mediator on the relationship between the independent variable and the dependent variable) is considered significant if the 95% confidence intervals for the indirect effect do not cross through zero, although 90% confidence intervals can also be used to indicate the presence of relationships between the variables.

Hypothesis 1

Hypothesis 1 addresses the relationship between parental lifestyle, attachment style, and their impact on the psychometric traits of their adult children in substance abuse treatment. While this section will focus on the direct effect of parental lifestyle and attachment style on the DV (patient psychometric scores), in order to thoroughly analyze all aspects of the data, and provide a complete picture of the relationships between family environment, lifestyle, attachment style and patient psychological traits, the three dimensional categorization of the FES (System Maintenance, Relationship and Personal Growth) are used as mediators in this model in order to determine their impact on the overall relationship between these variables.

As previously discussed, bootstrapping (Preacher & Hayes, 2004) was used to perform analysis on both the total, direct, and total and specific indirect effects. A recommended sample for bootstrapping is generally considered to be 5,000, although 1,000 is also considered to be adequate in many cases (Preacher & Hayes, 2004); however, for the purposes of this study, all samples will be 5,000. 90% confidence levels will be used when exploring total and specific indirect effects; if the confidence levels do not cross zero, it can be inferred that there is specific indirect effect from a particular mediator (or in the case of a total indirect effect, the sum of the mediators minus the direct effect of the IV on the DV). The total effect (c) is calculated as the sum of the direct effect (c') and the indirect effects of the mediator (ab, or in the case of multiple mediation, a_1b_1, a_2b_2, etc.). Conversely, the direct effect (c') can be expressed as c'=c-ab, or, the direct effect of the IV (X) on the DV (Y) minus the total indirect effects of the mediators (M) on the relationship between X and Y. Specific indirect effects (i.e., significant impacts of a particular mediator above and beyond the combination of

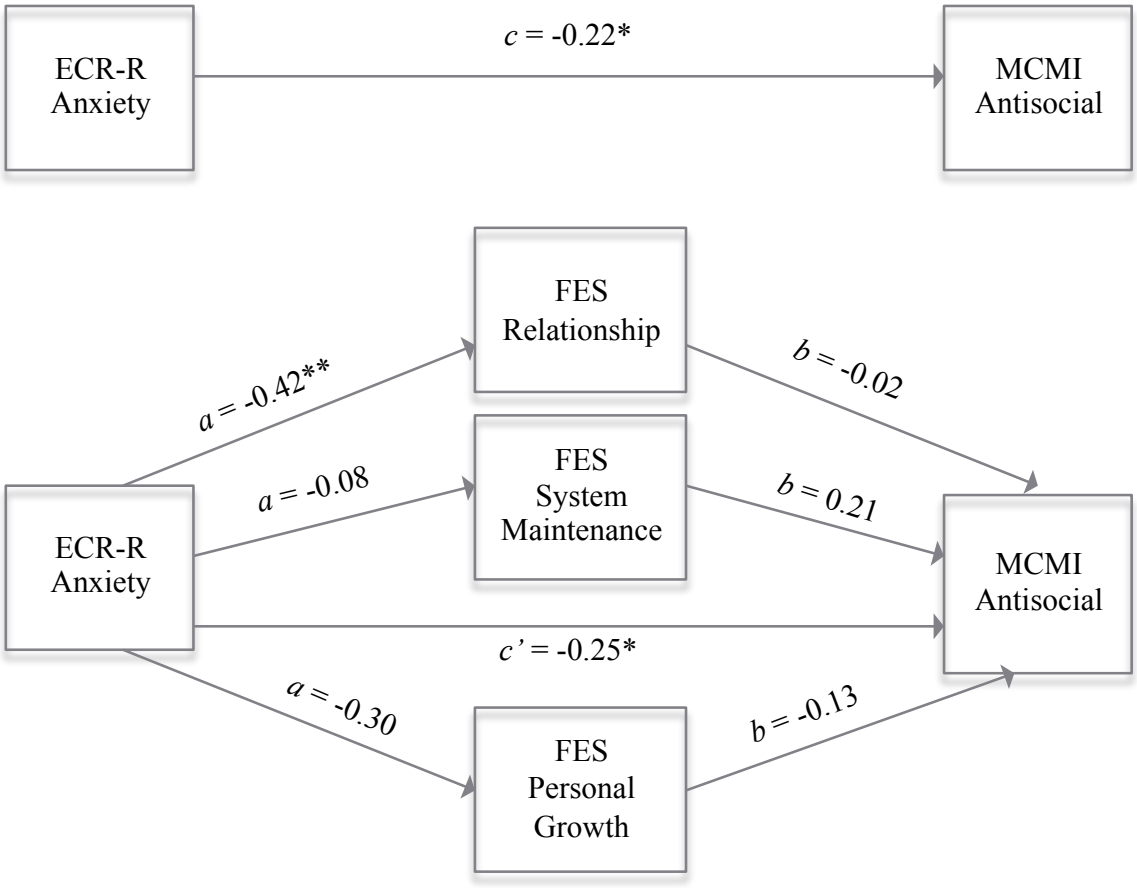
mediators) will also be shown, if found. Total and direct effects of X on Y will be shown as unstandardized regression coefficients (B).

Again, while this section focuses on direct effects of X on Y, adding the mediators allows exploration of both the three dimensional construct of the FES as well as the individual subscales as mediators (which will be focused on in discussion of Hypothesis 2), while maintaining the focus on the direct effect of X on Y. However, specific direct effects between M and Y will be discussed further in the Hypothesis 2, and specific direct effects between X and M will be addressed in the post hoc analysis section of this chapter.

Based on the findings of the correlational analysis, several models were constructed in order to explore the relationship between these IVs (lifestyle and attachment) and DVs (patient MCMI scores. Figure 2 shows a parallel multiple mediation model between an IV, the parental ECR-R Anxiety scores, and the DV, the MCMI Antisocial scores, with the three FES dimensions noted above acting as the mediators.

Figure 2

Parallel Multiple Mediation of the Relationships between Anxiety, Antisocial, and a 3 Dimensional Model of Family Environment



Note: p<.05*, p<.01**

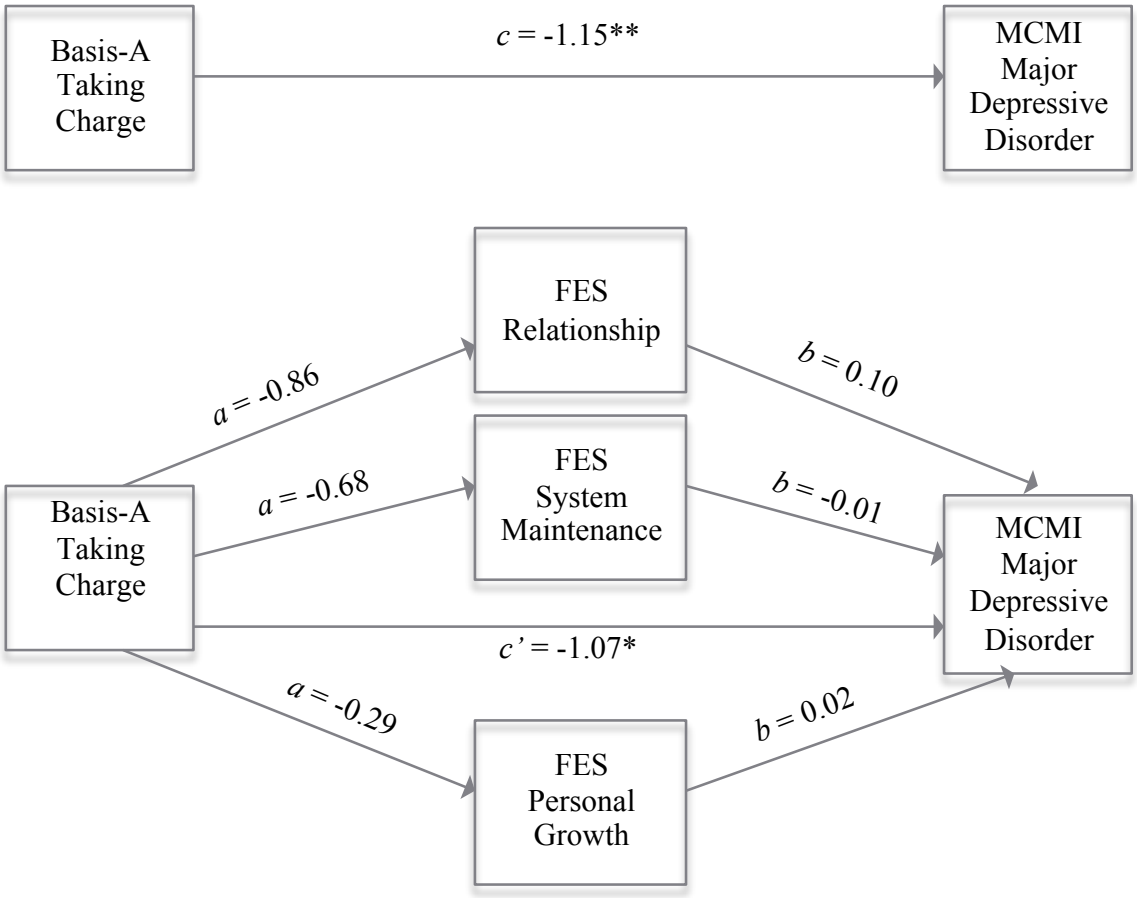
There was a significant total effect (c path) of ECR-R Anxiety scores on MCMI Antisocial scores (B=-.2175, SE=.1419, t=-2.9645 p<.05), as well as a significant direct (c' path) effect (B=-.2496, SE=.1029, t=.-2.4263 p<.05). Thus the possibility of mediation exists in this particular model, as we can see a clear relationship between low parental Anxiety scores and high patient Antisocial scores. However, no total indirect effect (the sum of the mediators influence on the relationship between X and Y, controlling for the direct effect of X on Y, or c-c') was found, and no specific indirect

effects were found that were significant. This may be due to collinearity, a common problem in regression analysis; as the three FES subscales being used as mediators are made up of different combinations of the ten subscales (which will be explored in Hypothesis 2), although there is some type of total effect on the IV when the mediators are included in the model, there is not a total indirect effect detectable (when the total indirect effect is calculated; c-c'). In essence, the researcher may assume that there is a possibility of either a specific total indirect or specific individual effect of one or more of the mediators if a ten subscale model is used, which will be explored in the section on Hypothesis 2.

Next, a model was constructed using the parental Basis-A Belonging Social Interest scale (BSI) as the IV and the MCMI Antisocial patient scores as the DV; the three dimensional FES scores were again used as the mediators. While there was a significant total effect ($B=1.0797$, $SE=.4695$, $t=-2.2994$ $p<.05$), there was no significant direct effect, or significant total indirect or specific indirect effects from the mediators.

Figure 3 shows another model constructed using the FES mediators, with the Basis A Taking Charge (TC) parental scores as the IV, and the MCMI patient Major Depression (MDD) scores as the DV.

Figure 3
Parallel Multiple Mediation of the Relationships between Taking Charge, Major Depression, and a 3 Dimensional Model of Family Environment



Note: p<.05*, p<.01**

There is significance at the p<.01 level (B=-1.1547, SE=.4295, t=-2.6887) for the total effect, as well as a significant direct effect between the IV and DV (B=-1.0715, SE=.4781, t=-2.2411, p<.05). This indicates a relationship between low Basis A TC scores and high MCMI MDD scores, however, no significant total indirect or specific indirect effects were noted. Again, the issue of collinearity may be at work here as well, as in the example seen in Figure 2. It could be expected one would find a total indirect effect, and possible specific indirect effects with both total and direct effects having

significance; however, the fact that there may be individual subscales in each of the 3 dimensions which do have some impact on the significant total effect, the multiple mediation model may not be able to determine a total or specific indirect effect from the mediators due to the similarities in what several of the subscales are measuring.

Two other models showed no total indirect or specific indirect effect of the mediators on the relationship between the IV and DV. However, there was a significant direct effect between parent Basis A Wanting Recognition scores and patient MCMI Borderline scores (B=1.0442, SE=.4796, t=2.1772, p<.05), and significant total and direct effects between Basis A Being Cautious scores and patient MCMI Borderline scores (B=-.7376, SE=.3587, t=-2.0562, p<.05). A summary of the total and direct effects is shown in Table 7 below.

Table 7
Summary of Total and Direct Effects: 3-Dimensional FES Scores Mediating

Independent Variable	Dependent Variable	Total Effect (c path)		Direct Effect (c' path)	
		B	SE	B	SE
ECR-R Anxiety	MCMI Antisocial	-.2175*	.0942	-.2496*	.1029
Basis A BSI		-1.0797*	.4695	-.9240	.5013
Basis A TC	MCMI MDD	-1.1547**	.4295	-1.0715*	.4781
Basis A WR	MCMI Borderline	.8706	.4430	1.0442*	.4796
Basis A BC		-.7001*	.3510	-.7376*	.3587

Note: p<.05*, p<.01**

Hypothesis 2

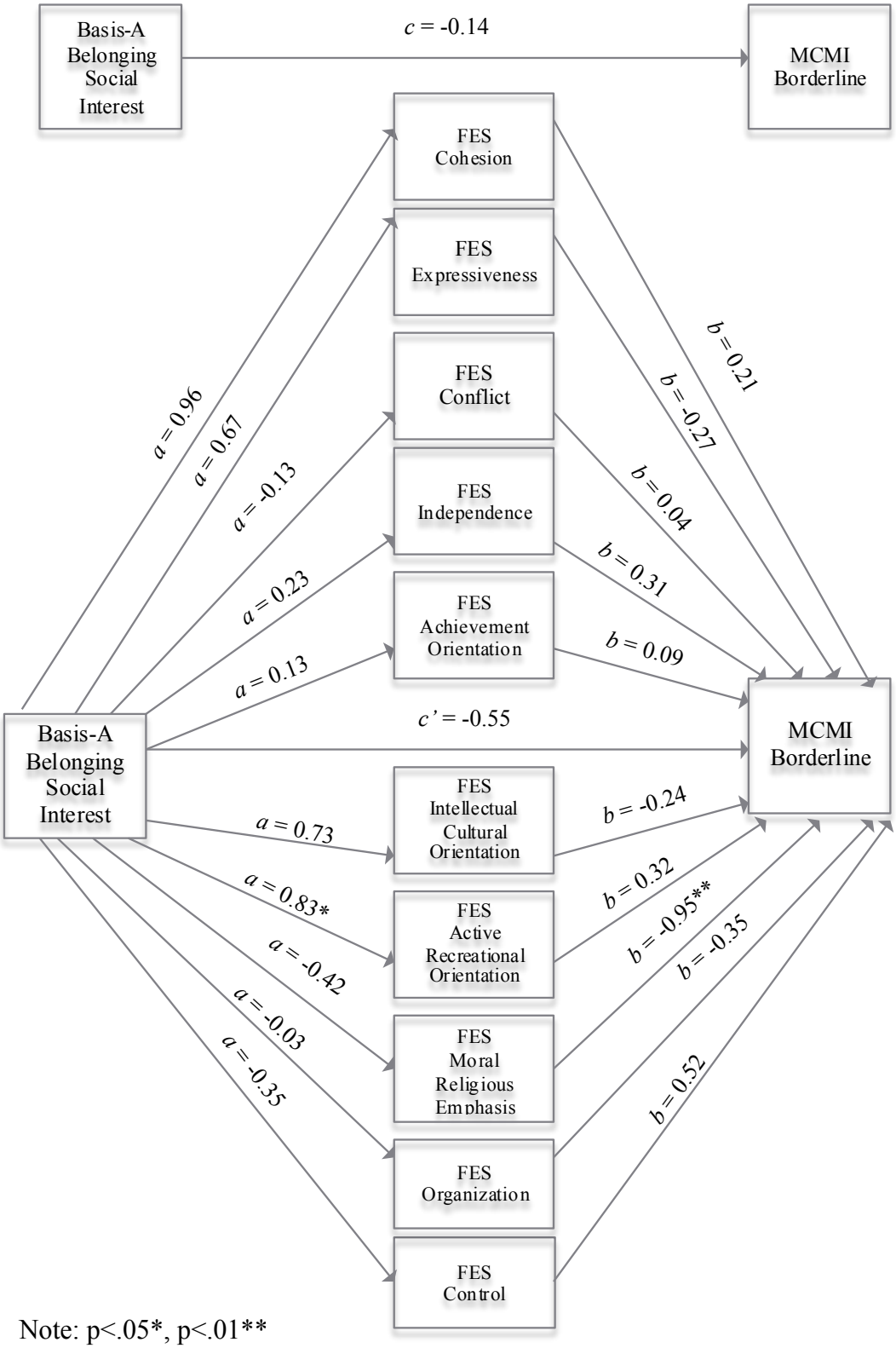
Hypothesis 2 focuses on the specific mediating influence of family environment in the relationship between parental lifestyle, attachment style, (IVs) and patient psychological traits (DVs). The ten-subscale model of the FES (Expression, Cohesiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural

Orientation, Active Recreational Orientation, Moral-Religious Orientation, Organization and Control) will be used as mediators in the following models. Direct effects of the IV on the DV in the following models will not be addressed, as they have been covered in the discussion on Hypothesis 1, as well as total effects; the main reason for this is that the 3 dimensional model of the FES consists of the 10 subscales, thus the total effect will remain the same, as the total effect equals the direct effect plus the sum of the mediators (c=c'-ab). However, direct effects of the individual mediators (FES subscales) on the DV (the b paths in a mediation model) will be addressed, as well as any total indirect effects and/or specific indirect effects from resulting from the inclusion of the ten subscale FES model as a mediating factor in the overall model.

Figure 4 shows a multiple mediation model using the parent Basis A BSI scores as the IV, and the patient MCMI Borderline scores. No significant total or direct effect between the IV and DV was found.

Figure 4

Parallel Multiple Mediation of the Relationships between Social Interest, Borderline, and a 10 Subscale Model of Family Environment



Note: p<.05*, p<.01**

However, in terms of the direct effects of the mediators on the DV, the FES Moral Religious Emphasis (MRE) scale was found to have a significant negative relationship with patient MCMI Borderline scores (B=-.9482, SE=.3013, t=--3.1467, p<.000). Additionally, as seen in Table 8 below, the bias corrected confidence intervals for the model show a specific indirect effect of the FES MRE on the relationship between the IV and the DV.

Table 8
Bias Corrected (BC) and Accelerated Confidence Intervals (CI's): Figure 4

Independent Variable	Dependent Variable	Mediators	BC and Accelerated CI's (90%)	
			Lower	Upper
Basis A BSI	MCMI Borderline	Total Indirect Effect	-.5512	1.0248
		FES Cohesion	-.0783	1.0255
		FES Expressiveness	-.7274	.0235
		FES Conflict	-.3935	.1183
		FES Independence	-.0605	.6239
		FES Active Orientation	-.0859	.3364
		FES Intellectual Cultural Orientation	-.9462	.0281
		FES Active Recreational Orientation	-.0752	.9816
		FES Moral Religious Emphasis	.0679*	.9699
		FES Organization	-.2710	.3591
		FES Control	-.8528	.0242

*Note: If upper and lower CI's do not pass through zero, specific indirect effect exists

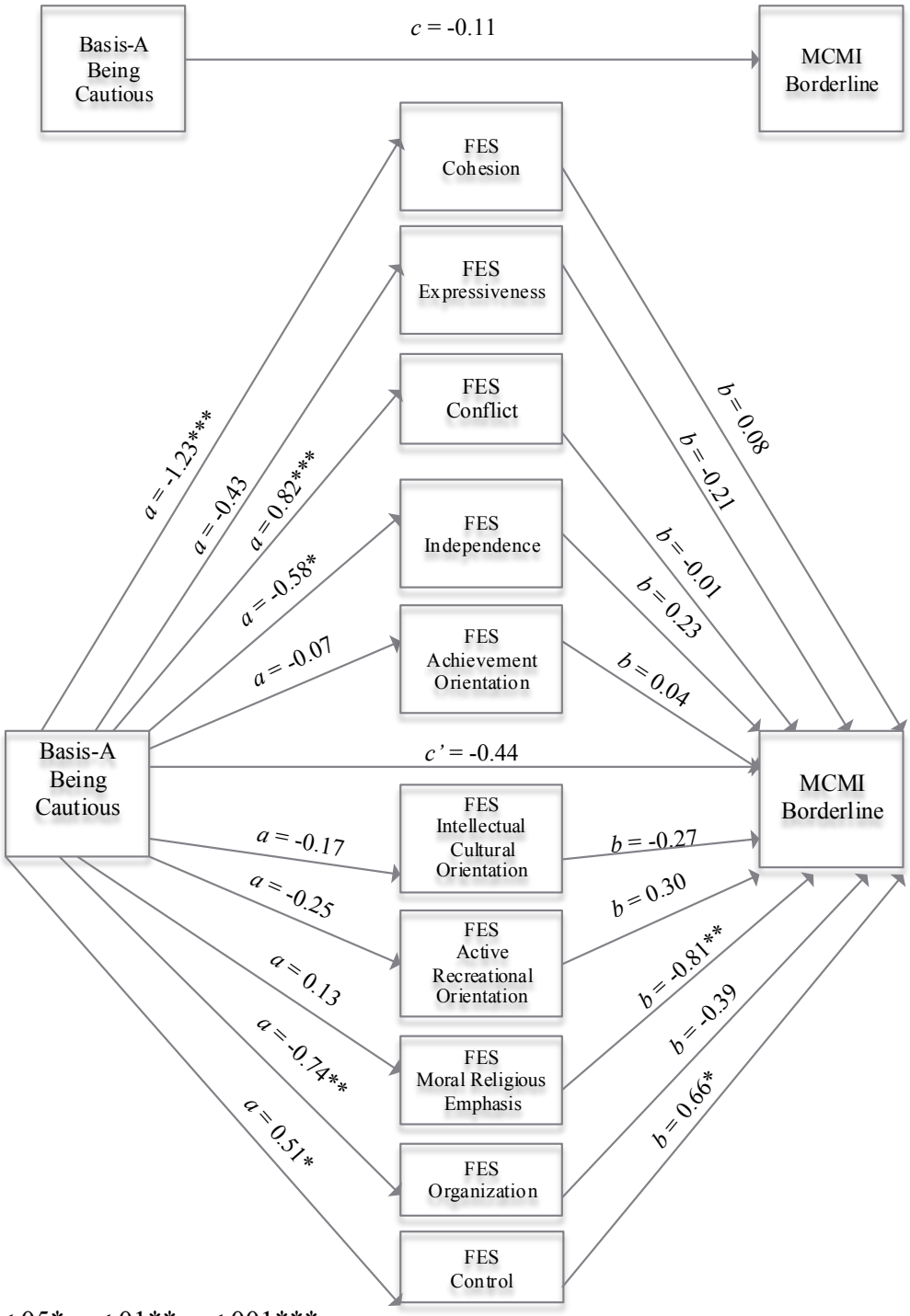
While there is no significant total indirect effect of the mediators on the entire model, Preacher and Hayes (2008) have suggested that this may occur (a specific indirect effect without the presence of a significant total effect or significant total indirect effect of the mediators, controlling for direct effect of the IV on the DV) when there is both a suppressing and mediating effect occurring simultaneously. For example, while the sum of the effect of the mediators between the patient MCMI Borderline scores and the parent Basis A BSI scores may be insignificant and small, the impact of one specific mediator (in this case, the FES MRE) may be very large in terms of it's specific influence on the pathway between parent and patient characteristics. This may be specifically the case in

this example, where as we see above there is a clear negative direct relationship between the mediator and the DV, but a positive relationship between the IV and DV through the mediator. Preacher and Hayes (2008) are very clear on insisting that that lack of a total significant indirect effect does not exclude the significance of a specific indirect mediator, as this may be worthy of further exploration.

Another model of interest, regarding specific indirect effects, is the relationship between parental Basis A BC scores and patient MCMI Borderline scores. Figure 5 shows this mediation model using the 10 FES subscales as mediators between the IV and DV.

Figure 5

Parallel Multiple Mediation of the Relationships Between Being Cautious, Borderline, and a 10 Subscale Model of Family Environment



Note: p<.05*, p<.01**, p<.001***

There are direct effects from the mediators MRE and FES Control (CTL) on the DV in the model shown above. However, despite having no significant total, direct, or total indirect effect at the p<.05 level, the specific indirect effect of the FES CTL subscale is significant, as shown in Table 9.

Table 9
Bias Corrected (BC) and Accelerated Confidence Intervals (CI's): Figure 5

Independent Variable	Dependent Variable	Mediators	BC and Accelerated CI's (90%)	
			Lower	Upper
Basis A BC	MCMI Borderline	Total Indirect Effect	-.4685	1.0754
		FES Cohesion	-.8984	.4101
		FES Expressiveness	-.0298	.4471
		FES Conflict	-.4279	.7045
		FES Independence	-.6475	.0320
		FES Active Orientation	-.1073	.1127
		FES Intellectual Cultural Orientation	-.0968	.4086
		FES Active Recreational Orientation	-.5307	.0502
		FES Moral Religious Emphasis	-.5068	.0917
		FES Organization	-.0578	.9182
		FES Control	.0422*	.8643

*Note: If upper and lower CI's do not pass through zero, specific indirect effect exists

While having no significant total, direct, total indirect or specific indirect effect, several models not shown here did have a direct effect from the mediators (FES 10 subscales) to various DVs (patient MCMI scores). These include significant relationships between the mediators MRE (B=-.8375, SE= .2874, t=-2.9141, p<.01), CTL (B=.5651, SE=.2695, t=2.0968, p<.01) and the DV of patient MCMI Borderline scores, the mediator FES Expression (B=.7174, SE=.3109 t=2.3076 , p<.05) and patient MCMI MDD scores. A summary of direct effects from the mediators (b path) and the DVs are shown in Table 10.

Table 10
Summary of Significant Direct Effects (b path)

Indpendent Variable	Dependent Variable	Mediators	B	SE
Basis A Belonging Social Interest	MCMI Borderline	FES Moral Religious Emphasis	-.9482***	-3.1467
Basis A Going Along	MCMI Borderline	FES Moral Religious Emphasis	-.8375**	-2.9141
		FES Control	.5651*	2.0968
Basis A Taking Charge	MCMI Borderline	FES Moral Religious Emphasis	-.8410**	-2.8287
	MMCI Major Depressive Disorder	FES Expressiveness	.7174*	2.3076
Basis A Wanting Recognition	MCMI Borderline	FES Moral Religious Emphasis	-.9714***	-3.5962
Basis A Being Cautious	MCMI Borderline	FES Moral Religious Emphasis	-.8073**	-2.7317
		FES Control	.6621*	2.3437

Note: p<.05*, p<.01**, p<.001***

Post Hoc Analysis

One of the biggest benefits in constructing a multiple mediation model in order to test theory or determine complex relationships between sets of variables is that when several simple mediation hypotheses are each tested with a simple mediator model, these separate models may suffer from the omitted variable problem, which can lead to biased parameter estimates (Judd & Kenny, 1981). Another benefit is that by the nature of the model (the relationship between X and Y as mediated by M) is that other data becomes available that may not be the a priori focus of the hypothesis being investigated, but do have a close relationship to the overall theme of the study. One of these pieces of data that becomes available in the course of the multiple mediation model is the relationship between the X variable (in this case, the parental lifestyle and attachment scores) and the mediators (the parental family environment scores), or, a path, in the models. In this case, these are valuable not only for observation in the context of this study, but also for future pathways to continued research on family structure as it relates to family environment, lifestyle, and attachment style. As the researcher has not previously discovered any studies that specifically examine these characteristics in this particular group (parents of adult children in substance abuse treatment), the within group (parent) significant effects

in the relationship between attachment style, lifestyle, and family environment are of interest. Table 12 shows some of the significant relationships between the parental lifestyle and attachment scores and the 10 subscale model FES scores.

Table 11
Summary of Significant Direct Effects (a path)

Indpendent Variable	Mediators	B	SE
ECR-R Anxiety	FES Cohesion	-.3588***	.0900
	FES Expressiveness	-.2289**	.0878
	FES Conflict	.2629***	.0666
	FES Indepedence	-.1708*	.0747
	FES Organization	-.2381***	.0676
	FES Control	.1593**	.0582
ECR-R Avoidance	FES Cohesion	-.3025**	.1288
	FES Expressiveness	-.2382*	.1157
	FES Conflict	.3418***	.0843
	FES Control		.0735
Basis A Belonging Social Interest	FES Active Recreational Orientation	.8288*	.3958
Basis A Going Along	FES Indepedence	.8567*	.3583
	FES Organization	1.0713***	.3534
Basis A Taking Charge	FES Cohesion	-.8293*	.3921
	FES Organization	-.5996*	.2842
Basis A Being Cautious	FES Cohesion	-1.2336***	.3384
	FES Conflict	.8258**	.2579
	FES Indepedence	-.5870*	.2759
	FES Organization	-.7358**	.2598
	FES Control	.5064*	.2188

Note: p<.05*, p<.01**, p<.001***

Of particular note are the relationships between high Basis A BC scores, low FES Cohesiveness subscale scores (B=-1.2336, SE=.3384, t=-3.6454, p<.01), and high FES Conflict subscale scores (B=.8258, SE=.2579, t=3.2021, p<.01).

Summary

Hypothesis 1

Hypothesis 1 focused on the direct effect of parental lifestyle and attachment style on the psychological traits of their adult children in substance abuse treatment, as well as the total effect taking into consideration family environment as a mediator. Analysis was performed in the context of a multiple mediation model (with a three dimensional model of family environment used as mediators) with results coming in the form of unstandardized regression coefficients. There were significant direct effects between scores on the ECR Anxiety scale and patient MCMI Antisocial scores, low Basis A Taking Charge scores and high patient MCMI Major Depression scores, and high parental Basis A Wanting Recognition scores and high patient MCMI Borderline scores. There were significant total effects (direct effect plus the sum of the mediators) between scores on the Basis A BSI scale, Basis A BC scale, the ECR Anxiety and patient MCMI Antisocial scores, and Basis A Taking Charge scores and high patient MCMI Major Depression scores. Thus the null hypothesis was rejected; there are several significant direct effects of parental lifestyle and attachment on the psychological traits of their adult children in substance abuse treatment, as well as total effects when the sum of the mediators is included.

Hypothesis 2

Hypothesis 2 primarily focused on the total indirect and specific indirect mediating influence of family environment on the relationship between parental lifestyle and attachment style and the psychological traits of their adult children in substance abuse treatment, as well as the direct influence of family environment on the psychological traits of their adult children in substance abuse treatment. Analysis was performed in the context of a multiple mediation model (with a ten subscale model of family environment used as mediators) with results coming in the form of unstandardized regression coefficients. There were specific indirect effects of the FES Control subscale on the relationship between Basis A Being Cautious and MCMI Borderline scores, as well as the FES Moral Religious Emphasis scale subscale on the relationship between Basis A Basic Social Interest and MCMI Borderline scores. There were also multiple specific direct effects of family environment on patient psychological traits. Thus the null hypothesis was rejected; there are significant direct effects of family environment on the psychological traits of their adult children in substance abuse treatment, as well as specific indirect mediating effects of family environment on the relationship between parental lifestyle, attachment and the psychological traits of their adult children in substance abuse treatment.

CHAPTER 5

DISCUSSION

In the final section, the significant findings of the study will be discussed, as well as conclusions drawn from these findings based on the literature. Implications for future research, as well as clinical implications be also be reviewed.

Summary of Findings

Direct Effects: Parental Lifestyle, Attachment Style and the Psychological Traits of their Adult Children

A significant direct effect between low parental ECR Anxiety scores and high child MCMI Antisocial scores was found in the course of the study. The authors of the ECR suggest that high anxiety scores for individuals indicate a fear of rejection and abandonment. The model used in this study did not allow for examination as to what degree each participant fit into each of these categories. The significance of looking at the overall effect of this factor on the antisocial characteristics of the adult children remains; some research suggests a link between parental anxiety disorders and antisocial offspring (Merikangas, Dierker, & Stazmari, 1998). This research focuses on more specific anxiety disorders, and not anxious attachment style, as the current study did. However, if we remain focused on the large body of literature that does suggest that parental characteristics and parenting do have an overall positive (or negative) impact on the

future pathology of their offspring there may be alternative explanations to this relationship. As the researcher, through the structure of the statistical model, did not examine the dimensional model of each parent and instead focused on the categorical model, the avoidant and anxiety scores were not taken into consideration together in each model. For example, if the low anxiety scores were significantly related to high avoidant scores in the individual parents, this may indicate a dismissive attachment style, possibly creating a lack of attention to a child's needs and lack of appropriate boundaries. These may be linked to a lack of empathy, consideration for other's needs and maladaptive behavior, all of which are hallmarks of antisocial personality disordered individuals. Interestingly enough, there was a strong correlation in the parent group between high anxiety and high avoidant attachment styles ($p<.000$), indicating an insecure attachment style, although the sample parent size was relatively small ($n=37$; correlations were performed prior to the bootstrapping method being conducted on the entire combined sample). As with any study examining groups of individuals that have not been extensively studied previously, more research is needed to fully explore this relationship.

There was a negative direct effect found between Basis A Taking Charge scores and MCMI Major Depression scores. Individuals scoring high on the taking charge scale are characterized as being forceful, strong, consistently drawing attention to themselves, and very outgoing and persuasive (Kern et al., 1997). Kern et al. (1997) have described these individuals as being in many cases the "life of the party"; however, they can in extreme cases be self-centered, overbearing, and lack listening skills. While there are some elements of depressive disorders that do actually take on characteristics of self-centeredness and lack of empathy, there does appear to be a connection with the opposite;

individuals with episodes of major depression are generally not considered to be the "life of the party" or particularly outgoing or persuasive, at least not in a positive sense. A lower sense of self-worth and self-esteem has been linked to depression across the age and gender spectrum (Crocker & Wolfe, 2001). In keeping with the theoretical construct of intergenerational environmental transmission of some of these traits between parent and child, this relationship would appear to have some value in terms of further exploration.

The final direct effect found was a positive relationship between high parental Basis A Wanting Recognition scores and patient MCMI Borderline scores. Individuals high on wanting recognition can be seen as most comfortable when they are receiving praise and recognition for their accomplishments; however, if they are not recognized for this, they can become impatient and discouraged as their concept of self-worth is so closely tied to the approval of others (Kern et al., 1997). Similarly, the individual with borderline is often very outgoing, may have many close relationships, and many acquaintances. They also often maintain these relationships for long periods of time. However, these individuals can vacillate between very intense and very distant relationships, can behave erratically and exhibit a lack of empathy if they feel their interpersonal needs are not being met. The similarities between the high scoring Basis A Wanting Recognition individual, whose needs are not being met in terms of recognition for accomplishments, and the borderline patient are striking. Parents who meet this profile may have a strong influence on their own offspring's perception of the world; for example, how others are expected to act towards you when you are in need of some type of emotional validation, and how you react when it does not occur or does not occur to

the degree to which you feel it should. While it is important to remember that the adult children participating in this study all have diagnosis of active substance dependence, which can impact judgment and functioning separate from any co-occurring psychological diagnosis, these are also likely traits (as well as the behavioral manifestations of them) present in both groups which are long established and have become part of the overall functioning of the family structure over the years.

Total Effects: Lifestyle, Attachment Style, Family Environment and Psychological Traits

There were both significant direct and significant total effects (direct effect plus the sum of the mediators) between scores on the ECR Anxiety and patient MCMI Antisocial scores, and Basis A Taking Charge scores and patient MCMI Major Depression scores. However, two Basis A scales (Being Cautious and Belonging Social Interest) were negatively correlated with MCMI Antisocial scores when the total effect was examined, without having a significant direct effect.

Individuals scoring high on Belonging Social Interest are characterized as individuals who are supportive and respectful of others, empathize with others and generally had a good family environment, which was pleasant, supportive, and comfortable (Kern et al., 1997). They additionally enjoyed playing in groups generally, and form positive relationships fairly easily. This is the polar opposite of the antisocial personality, often marked with violating others' rights and a lack of empathy. It should be noted that not all high scores on the MCMI Antisocial scale indicate the presence of a violent, sociopathic personality type; however, certain traits, including a lack of empathy

and respect for others tends to be a common theme in individuals scoring high on this measure, no matter how it is manifested behaviorally. This may be particularly evident in drug and alcohol dependent individuals, as in many cases manipulative and self-centered behavioral patterns are integral to the maintenance of active addiction.

Additionally, there is significant evidence that individuals scoring high in antisocial measures have a disproportionately higher incidence of familial violence (directed towards themselves or others in the family unit) as well as parental drug and alcohol problems (Mueser et al., 2012). In the model used at this stage of the study, multiple mediation between the IV (parental Basis A BSI scores) and DV (patient MCMI antisocial scores), a three dimensional model of family environment was used as the mediator (FES System Maintenance, Relationship and Personal Growth). Parent histories of substance abuse problems (which were approximately $1/5^{th}$ of the parent sample) were not included as a factor in the model, either directly or indirectly; while there was no total (or specific) indirect effect of the three mediators on the relationship between the IV and DV (possibly due to collinearity), the model could be influenced by the presence of the responses on the FES of these individuals who had experienced prior problems with drugs and/or alcohol. There is a possibility that this may represent a circular relationship (Goldenberg & Goldenberg, 2002) between lower parent social interest, higher child antisocial tendencies/traits, and substance abuse that is transmitted generationally (as discussed in Chapter 2); this finding warrants further research investigation in the future.

In terms of the total effect of low Basis A Being Cautious scores on high MCMI Antisocial scores in the context of the three dimensional FES model, there are some

similarities between these two measured constructs. Lower scoring individuals can be seen to have impulsive patterns of behavior, with reckless decision making patterns, poor emotional regulation and excessive risk taking; individuals with stressful childhoods tend to exhibit these traits more frequently (Kern et al., 1997). While there is not a direct effect between a lack of being cautious and antisocial behaviors, with the inclusion of the family environment influence as a mediator, a significant relationship emerges. Again, this suggests that there may be identifiable patterns between substance abuse, pathology and familial organizational patterns that are strongly environmentally influenced.

In terms of the total effects between ECR Anxiety and MCMI Antisocial scores, as well as Basis A TC scores and MCMI MDD scores, the reinforcing effect of family environment is clear on the relationship between these sets of variables. The lower parental anxiety/higher patient antisocial score is particularly interesting, as we have previously noted the strong connections in the research literature (Merikangas et al., 1998) between high incidence of parental anxiety and antisocial traits of their offspring. As for the relationship between parent Basis A TC and child MCMI MDD scores being reinforced by the three dimensional model of family environment (the total effect is also significant), there are several factors which may be at work. For example, familial environments characterized by emotional withdrawal, and lack of expression, have been associated with the development of significant mental distress in children within these families (Zanarini, 1997). The lack of expression characterized by low Basis A TC scores, and the direct influence this has on MCMI MDD scores in the study, is enhanced ever further by the inclusion of the family environment into the model; this raises the

possibility of one (or more) factor within the FES specifically contributing to enhancing this effect.

Specific Indirect Effects: Specific Mediating Family Environment Factors

Significant indirect effect between Basis A BSI, Basis A BC scores and MCMI Borderline scores were found through the analysis of the data. This analysis was done using a multiple mediator model, with the ten-subscale model of the FES as the mediators in the relationship between the IV (in this case, parental Basis A scores) and the DV (in this case, the child MCMI Borderline scores).

In the case of the relationship between low Basis A BSI scores and higher MCMI Borderline scores, a higher FES Moral Religious Emphasis (FES MRE) score appeared to be a significant mediating factor in this relationship. It is important to reiterate that no significant direct or total effect was found in the relationship between the IV and the DV in this example; however, as has been mentioned previously, it has been noted (Preacher & Hayes, 2008) that the lack of a total effect, direct effect, or total indirect effect of the mediators between the IV and DV does not necessarily discount the findings of a specific indirect effect. In fact, in the case of not finding a significant total indirect effect may simply be due to issues of collinearity (where multiple scales of family functioning may rely on similar concepts or even specific questions in a particular instrument, thereby making it difficult to discern the specific impact of each separate scale on the overall relationship). The FES MRE can be described as the measurement of the degree of emphasis on moral and ethical values in a family environment (Moos & Moos, 2002); it is important to recognize, however, when we look at family environment through the lens

of a family systems or "family climate" (Moos, 1974) perspective that the family environment exists on a spectrum and is not "black or white" in terms of interpretation. For example, a family that is over reliant on a certain family environment feature that can generally be seen as positive may not always have an overall positive family environment when the other scales are taken into consideration. In this instance, low parental Basis A BSI scores may indicate the presence of a burdened or stressed childhood in these individuals, and in their current family unit they may be over reliant on moral or religious tenets in order to maintain control or order within the family structure. If this theory is correct, in the context of the data analysis, this over reliance may play a role in the development of borderline tendencies within their offspring.

There may also be a relationship with secure attachment styles within this context as well; although parental attachment style was not included in this model, previous research on religiosity, depression and spirituality (Diaz, Horton, McIlveen, Weiner, & Williams, 2011) concluded that individuals who lack secure attachment styles may look to rely disproportionately on religion as a substitute for this deficit. Just as attachment style is seen as forming the basis for working models of self and others (Simons et al., 2001), Adler believed that lifestyle assists in forming strategies that form the basis for how an individual adapts to their particular social and familial environments (Peluso, 2006). The researcher is in no way suggesting that an emphasis on morality or religion in a family is a precursor for future dysfunction or pathology in the children within that unit; however, this simply highlights the complex degree to which different areas of family functioning interact with each other, as well as the importance of looking at the entirety

of the family system, or what Moos (1974) termed as “family climate”, when examining the family unit.

Another similar situation is seen in the specific indirect mediating effect of the FES subscale Control (FES CTL) on the relationship between Basis A BC scores and MCMI Borderline scores. The FES CTL subscale is measuring the degree to which rules and set procedures determine everyday family life (Moos & Moos, 2002). It can also been seen in the context of the degree to which family members exert control over each other, in various ways; in the example of high FES CTL scores specifically mediating the relationship between lower Basis A BC scores and higher MCMI scores, this characterization may be a better way to understand this relationship. While the individual low on the being cautious scale may be seen as having increased impulsivity, recklessness, poor emotional regulation and stressful childhoods (Kern et al., 1997), the borderline also exhibits poor emotional regulation, impulsive and manipulative behaviors in order to meet their interpersonal needs. One theory is that the increased reliance on controls in the family unit is a function of the parent having some of these same traits and exercising excessive amounts of control within the family unit in order to maintain some sense of balance, or equilibrium. Controlling family environments have been linked to negative psychological functioning (Moos, 1974). However, just as in the example above, this does not infer linear causality (impulsive, stressed parents exert undue control on their offspring causing borderline behaviors to emerge as they develop through adolescence and young adulthood), but may possibly be seen as also a circular (Goldenberg & Goldenberg, 2002) relationship; it must be remembered that the family operates as a system, or unit, and all parts operate in different ways in response to

different stressors (positive or negative) in order to achieve equilibrium. Just as a parent can exert power over the offspring in the family unit, it can go the other way; in the case of a borderline offspring, they also clearly exert a large degree of control (or at least attempt to) on the parents in order to get their interpersonal needs met.

Direct Effects: Family Environment and Psychological Traits

Direct effects of parent reported family environment on patient MCMI scores were also examined (the "b" path in the multiple mediation models, or the mediator's direct relationship with the independent variable). As could be expected, both FES CTL & MRE scores were strongly related to the patient MCMI borderline scores (as there were specific indirect effects through these mediators, as discussed in the section on specific indirect effects). One unexpected observation was the significant relationship between FES Expressiveness and elevated MCMI MDD scores; there is some evidence in the literature that suggests (Hoglund & Nicholas, 1995; Nicholas & Bieber, 1996) links between lack of familial expression and development of adult depressive disorders. However, a great deal of the research that involves family characteristics alcohol/drug abuse and individual dysfunction is focused primarily around ACOA's; this may not be the case in this relationship (as only approximately 20% of the entire parent sample reported a prior drug/alcohol problem), and it is worthy of further research attention.

Considerations for Future Research

With the lack of research currently available on this specific population, there are multiple ways that this research could be used as a springboard for continued study of the

relationship between parental attachment style, lifestyle and the influence of family environment on the characteristics of their adult children in substance abuse treatment.

One is the use of different family environment instruments as mediators in the models noted above; while the FES provides a reliable and valid measure of family environment, other instruments may give a different picture or help shed light on the full extent of the relationships note above. For example, specific indirect mediating effects of familial moral religious emphasis and control were found to be significant in the relationships between Basis A BSI and MCMI borderline scores, and Basis A BC scores and borderline scores, respectively. By including other family assessment instruments as mediators, different patterns or relationships may emerge, but even more specifically, the significant relationships could be focused on. Other family assessment tools, such as the McMaster Family Assessment Device (Epstein, Baldwin, & Bishop, 1983), or the Family Assessment Measure III (Skinner, Stienhauer, & Santa Barbara, 1983), that have subscales that measure similar constructs as the ones in the FES could be used to then specifically compare findings. Comparing significant findings across measurements is good research practice.

Another suggestion for future researchers is an expanding of the demographic parameters of the population studied; for example, the completed study involved a population that was overwhelmingly White/Caucasian in terms of both parents and children, and included a median self-reported income of well over $75,000 by the parents of the adult children in treatment. While this does not detract from the overall importance of the findings of the study to the body of literature on this subject (and in fact may be a

revealing look at a socio-demographic group that has not been previously extensively studied), a sample that is more representative of the actual demographic breakdown of the population of the United States could prove to be very valuable in revealing the variances in specific relationships that the elements examined in this study contain within different ethnic, racial, and cultural groups. Researchers need to make more of a sustained effort to examine the impacts of family, attachment, lifestyle and addiction within the context of our multicultural society. Even theoretical constructs that remain salient decades after their inception (such as family environment, Adlerian lifestyle, and attachment theory) will lose some degree of their overall relevance to issues such as substance abuse and addiction if they are not examined in the coming years within the context of multicultural populations.

Finally, as issues of outcomes become more and more important in the behavioral health arena, there are also possible ways that a study such as the one outlined here could become even more valuable in of terms determining the relationship of the main factors examined as well as various measures of success in treatment. This could involve the same basic structure of the study while incorporating elements such as length of continuous sobriety, or quality of life following treatment. Adding a measure such as quality of life for the patient (in this case, the adult child) at one, two or three month intervals, for example, to the equation could result in some significant findings. Social support is consistently considered as the primary factor in various measures of successful treatment for substance abuse disorders and co-occurring disorders (Dobkin et al., 2002), and hostility in family units and insecure attachment (Johnson et al., 2003; Geller et al., 2000) have been shown as primary factors in relapse and poor performance in treatment

settings. As the family unit is seen in attachment style theory as the basis for the working models of self and others, and Adler believed that early childhood experiences were a crucial factor in the development of one's schema of apperception, or world view, these concepts would both be well suited to form the framework by which to examine the factors that go into long term success after treatment. A longitudinal model focusing on parental lifestyle, attachment and the overall influence of family environment as it relates to patient success both during and after treatment would be a great asset to the body of literature in the field of addiction and substance abuse.

Clinical Implications

Despite the complexity of the addiction process and the enormous amount of impact of addiction and cost to society, it still remains one of the only chronic conditions that is primarily treated within the context of an acute care model (McLellan, Lewis, O'Brien, & Kleber, 2000). Although the fact that large numbers of substance abuse patients come into treatment with co-occurring conditions, which have an overwhelmingly detrimental impact on both the identified patient and society in general, this model remains in place. A number of reasons exist for this; for example, lack of funding, lack of training within agencies and organizations to address these issues, and, in some cases, simply a lack of knowledge of regarding the severity and scope of the problem. With its focus on intergenerational links between lifestyle, attachment, family environment and substance abuse patient co-occurring disorders, there are several ways that this study may be able to positively influence clinical practice in the area of substance abuse treatment.

One is highlighting the value of actively engaging the immediate family into the treatment process. While the patients in the study group were all adults, over 18, the family still remains, in a vast majority of cases, the primary support group for individuals in treatment. They are relied upon for social, emotional, as well as financial support, in many cases. However, despite this being most patients' primary support system (as has been well documented in the literature), many times the only contact that clinicians have with families in this setting is to give updates on their current condition or to communicate essential information about their safety or wellbeing. The fault of this is not placed solely on the shoulders of the clinicians themselves; time, financial concerns and distance often times restricts the amount of energy that can be expended by the average clinician in dealing with a patient's family members who are involved in their treatment process.

However, this highlights the need for the use of assessment and evaluation practices, not just with the identified patient, but also with family members. Clinicians can have family members, even of they are long distances away, complete fairly simple instruments, such as the ones used in this study, to get a comprehensive view of what the overall family environment is, and what the role of the identified patient is within the overall family structure. Even though the current acute care model may not allow for a full examination of these factors (due to the restrictions noted above) and even the disease model, by it's very nature, focuses on the primacy of the individual in terms of changing behaviors and attitudes towards alcohol and drug usage, by neglecting to see addictive behaviors, the development of co-morbidity and dysfunctional lifestyle in the

context of the family unit they originate from, we are doing our patients a great disservice.

One specific area that research on family environment, lifestyle and co-morbidity can assist in is direct treatment planning. Co-morbidity (and lack of addressing the concurrent issues that are associated with it) has been shown to lead to poorer treatment outcomes, treatment attrition, and increased risk of relapse following treatment. Understanding how these patterns develop within the family structure can help they patient gain some insight into how the integral parts of things like the their world view (Adlerian "schema of apperception"), working models of self and others (attachment styles) developed. This can promote lasting change by lessening the focus on the patient's drug and alcohol usage (in many treatment centers, specifically the one focused on in this study, abstinence is a requirement of entry and retention in the program), and more emphasis on addressing the factors that may have attributed to their unhealthy or dysfunctional usage of substances. It moves the focus away from a reductionist view of alcohol and drug treatment (where the substance usage is focused on primarily as the sole source of life difficulty), and a more comprehensive view where the patient as seen as an entire person, who exists in the context of his environment (a teleological view, as individual psychology would term it) and must view their behaviors and reactions to different life circumstances in this light. Despite the emphasis on breaking down "denial" in the patients in substance abuse treatment, many patients are fully aware that (especially in settings like inpatient facilities that have voluntary admissions) they have significant life problems that are directly related to excessive alcohol and drug usage. What many lack, however, is insight into how their familial background, and world view play a major

role in the continuation of behavioral patterns that they do, many times intrinsically, know are damaging to both their physical and emotional wellbeing. In this study, there are several examples of parental lifestyle characteristics that suggest the presence of highly stressful, rigid, burdened, maybe even emotionally or physically abusive childhood backgrounds, which have direct relationships to co-morbidity in their offspring. There is also evidence that there are certain family environment elements that have possibly reinforced these relationships.

This by no means is suggesting that by integrating things like family assessments into an individual's treatment planning that the goal is to blame immediate families for a patient's development of co-morbidity or substance use disorders; there are a host of other factors which come into play regarding the development of addictive disorders, including biological factors, peer influence, and a host of other factors that are out of the scope of the family unit's sphere of influence. However, if we are truly to treat the whole person we must allow the use of tools, techniques, as well as research findings such as the ones contained in this study to guide us in development treatment planning that addresses issues that help the patient to gain perspective on how they got where they are today, so that they can then begin to develop strategies for change that are long-lasting and lead to a better overall quality of life.

The family remains the primary social support system for the vast majority of people, including those in substance abuse treatment; regardless if we, as researchers or clinicians label a family as "functional" or "dysfunctional", this fact remains true. One possible outcome of this study the researcher hopes can impact the substance abuse field

from a direct counseling perspective is to examine the widely held belief that the primary cause of a patient's alcohol and or drug addiction in a majority of cases stems directly from a parent's problematic alcohol or drug usage. While there is abundant evidence that this may play a major role in the development of future drug and alcohol problems in their offspring, seeing addiction and the family influence through this narrow lens can be a fatalistic view that does nothing to assist addressing the issue at hand, which is the patient and their current and future wellbeing. Only approximately 20% of the parental sample in this study reported having prior problems with drug and/or alcohol usage; while there may be some significant impact of this on the overall relationships explored here (and is a question for future research on this subject), it is unlikely that this factor contributed fully to the findings between the different variables. For example, the direct relationship between anxious attachment style and antisocial traits is unlikely, in the researcher's view, to have been unduly influenced by the possibility of those fitting the anxious profile having had prior substance abuse problems; if attachment styles are formed early in life, the issue of parental drug or alcohol use may not be as important in the relationship as the influence of environmental and familial factors which contributed to development of this attachment style (which the researcher suggests is then transmitted inter-generationally not through genetics, but by patterns of behavior, socialization and family environment)

In terms of practice, this only reinforces the need for increased clinician involvement, and commitment to, family education and aftercare planning. Clinicians need to take more direct involvement is directly educating family members on issues such as addiction and co-occurring disorders; this can be as simple as providing resources

to them to independently address, or more advanced such as involving them in direct family sessions. Many family members, despite maybe exhibiting dysfunctional traits of their own, have little or no knowledge of co-morbid disorders or the addiction process; while they are fully aware of the dysfunction and consequences suffered by themselves or the identified patient as a result of their behaviors, they lack insight into this part of the process. Of course, the primary focus must be on the patient, and many agencies and counselors lack the time or resources to fully address some of these familial issues; however, we know that poor familial and social support, lack of cohesion, and a failure to address co-occurring issues are a primary cause of relapse and a host of other problems that can affect patient outcomes. By not addressing these issues, even at a very basic level, counselors and the agencies they work for are not addressing one of the primary reasons that the same patients continue to present for drug and alcohol dependence at treatment facilities over and over again. Aftercare planning at treatment facilities often suffers from the same problem; failure to include family environment issues within these plans or making arrangements (if necessary) for future counseling to include exploring family of origin issues, we are ignoring a component of the entire treatment process that has been clearly identified through previous research (including this study) as having a key role in patient improvement. With the rise of more integrated behavioral health, and specifically addiction, treatment, we may see these elements become more and more a part of the regular treatment planning routine within the substance abuse treatment field.

Conclusion

The researcher undertook this study in order to further investigate the relationships between parental Adlerian lifestyle, attachment and the co-morbid traits of their offspring in substance abuse treatment, and to additionally determine what the mediating influence of family environment was on this equation. Several significant findings suggest a direct connection between child co-morbid mood and personality disorder traits and parental lifestyle and attachment style categories. Links were also found to total and specific indirect effects of certain elements of family environment, as measured by the FES, such as control and moral religious emphasis, on the overall relationship between lifestyle, attachment style, and co-morbid disorder traits.

Unfortunately, in the last decade or so, much of the research on links between family, substance abuse and co-morbid disorders has increasingly been focused on finding genetic links between these variables. Much of this has been at the expense of looking at the role of environmental factors, such as family dynamics, in the process of development of behavioral health disorders. It represents behavioral reductionism at its highest level; why would we focus on family dynamics in behavioral research when we know through the examination of this particular gene that behaviors and/or conditions (addiction, antisocial, borderline or depressive disorders, just to name a few) are predetermined? Wahlsten (2003) addresses the issues of twin studies, linkage analysis, and how the issue of behavioral genetics has become increasingly popular in research studies from everything from antisocial traits (addressed in this study) to sexual orientation. He goes on to note the dangerous social implications of reliance on what are

basically scientifically unfounded claims regarding the genetic "passing on" of certain behavioral traits or behaviors themselves. As Greenberg (2005) notes, "DNA is not the primary cause of anything, structural or behavioral. DNA is an inert molecule incapable of any action on its own. It is present in the nucleus, waiting to be acted on by other molecules" (p. 998). And so our behaviors, and the way we react to the world around us, is not predetermined by a set of genes, but the result of a combination that involves both biological and environment processes. It is the hope of this researcher that this work continues to build on the body of literature that further explores the links between lifestyle, attachment style, family environment and addiction.

APPENDICES

Demographic Information

NAME	Please Print:					
	Last:		First:			
	Current Age		How long have you known the client at BHOPB?			
GENDER	Circle One:					
	Male		Female			
ETHNICITY	Circle One:					
	White	Black	Hispanic	Asian	American Indian	
EDUCATIONAL ATTAINMENT	Circle Highest Level Achieved:					
	>9th Grade		Masters Degree			
	9th -12th Grade/ No Diploma		Bachelors Degree			
	High School Grad/ GED		Professional Degree/ PhD			
	Some College/ No Degree					
TOTAL ANNUAL INCOME	Circle One:					
	<$15,000	$15,000-$35,000	$35,000-$55,000	$55,000-$75,000	>$75,000	
MARITAL STATUS	Circle One:					
	Never Married	Married	Separated	Widowed	Divorced	
NO. OF PEOPLE IN FAMILY	Circle One:					
	Adults	1	2	3	4	5	6+
	Children (Under 18)	1	2	3	4	5	6+
FAMILY INFORMATION	Your relationship to the client at BHOPB?		Have you ever had a problem with Substance Abuse (please circle)?			
			YES	NO		

APPENDIX B

Family Environment Scale

(Form R) Work Across →

1. Family members really help and support one another.
2. Family members often keep their feelings to themselves.
3. We fight a lot in our family.
4. We don't do things on our own very often in our family.
5. We feel it is important to be the best at whatever you do.
6. We often talk about political and social problems.
7. We spend most weekends and evenings at home.
8. Family members attend church, synagogue, or Sunday School fairly often.
9. Activities in our family are pretty carefully planned.
10. Family members are rarely ordered around.
11. We often seem to be killing time at home.
12. We say anything we want to around home.
13. Family members rarely become openly angry.
14. In our family, we are strongly encouraged to be independent.
15. Getting ahead in life is very important in our family.
16. We rarely go to lectures, plays or concerts.
17. Friends often come over for dinner or to visit.
18. We don't say prayers in our family.
19. We are generally very neat and orderly.
20. There are very few rules to follow in our family.
21. We put a lot of energy into what we do at home.
22. It's hard to "blow off steam" at home without upsetting somebody.
23. Family members sometimes get so angry they throw things.
24. We think things out for ourselves in our family.
25. How much money a person makes is not very important to us.
26. Learning about new and different things is very important in our family.
27. Nobody in our family is active in sports, Little League, bowling, etc.
28. We often talk about the religious meaning of Christmas, Passover, or other holidays.
29. It's often hard to find things when you need them in our household.
30. There is one family member who makes most of the decisions.

APPENDIX C

Experiences in Close Relationships Inventory (Revised)

Code:_____

Experiences in Close Relationships Inventory (Revised)

Brennan, Clark, & Shaver (1999), Fraley, Waller, & Brennan (2000)

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Answer on the sheet provided, using the following rating scale:

1	2	3	4	5	6	7
Disagree Strongly	.....	.....	*Neutral/ Mixed*	.....	.....	*Agree Strongly*

1. I prefer not to show a partner how I feel deep down. _____
2. I worry about being abandoned. _____
3. I am very comfortable being close to romantic partners. _____
4. I worry a lot about my relationships. _____
5. Just when my partner starts to get close to me I find myself pulling away. _____
6. I worry that romantic partners won't care about me as much as I care about them. _____
7. I get uncomfortable when a romantic partner wants to be very close. _____
8. I worry a fair amount about losing my partner. _____
9. I don't feel comfortable opening up to romantic partners. _____
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her. _____
11. I want to get close to my partner, but I keep pulling back. _____
12. I often want to merge completely with romantic partners, and this sometimes scares them away. _____
13. I am nervous when partners get too close to me. _____
14. I worry about being alone. _____
15. I feel comfortable sharing my private thoughts and feelings with my partner. _____
16. My desire to be very close sometimes scares people away. _____
17. I try to avoid getting too close to my partner. _____
18. I need a lot of reassurance that I am loved by my partner. _____
19. I find it relatively easy to get close to my partner. _____
20. Sometimes I feel that I force my partners to show more feeling, more commitment. _____
21. I find it difficult to allow myself to depend on romantic partners. _____
22. I do not often worry about being abandoned. _____
23. I prefer not to be too close to romantic partners. _____
24. If I can't get my partner to show interest in me, I get upset or angry. _____
25. I tell my partner just about everything. _____
26. I find that my partner(s) don't want to get as close as I would like. _____
27. I usually discuss my problems and concerns with my partner. _____
28. When I'm not involved in a relationship, I feel somewhat anxious and _____

Code:_____

Experiences in Close Relationships Inventory (Revised)

Brennan, Clark, & Shaver (1999), Fraley, Waller, & Brennan (2000)

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Answer on the sheet provided, using the following rating scale:

1	2	3	4	5	6	7
Disagree Strongly	.....	.....	*Neutral/ Mixed*	.....	.....	*Agree Strongly*

1. I prefer not to show a partner how I feel deep down. _____
2. I worry about being abandoned. _____
3. I am very comfortable being close to romantic partners. _____
4. I worry a lot about my relationships. _____
5. Just when my partner starts to get close to me I find myself pulling away. _____
6. I worry that romantic partners won't care about me as much as I care about them. _____
7. I get uncomfortable when a romantic partner wants to be very close. _____
8. I worry a fair amount about losing my partner. _____
9. I don't feel comfortable opening up to romantic partners. _____
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her. _____
11. I want to get close to my partner, but I keep pulling back. _____
12. I often want to merge completely with romantic partners, and this sometimes scares them away. _____
13. I am nervous when partners get too close to me. _____
14. I worry about being alone. _____
15. I feel comfortable sharing my private thoughts and feelings with my partner. _____
16. My desire to be very close sometimes scares people away. _____
17. I try to avoid getting too close to my partner. _____
18. I need a lot of reassurance that I am loved by my partner. _____
19. I find it relatively easy to get close to my partner. _____
20. Sometimes I feel that I force my partners to show more feeling, more commitment. _____
21. I find it difficult to allow myself to depend on romantic partners. _____
22. I do not often worry about being abandoned. _____
23. I prefer not to be too close to romantic partners. _____
24. If I can't get my partner to show interest in me, I get upset or angry. _____
25. I tell my partner just about everything. _____
26. I find that my partner(s) don't want to get as close as I would like. _____
27. I usually discuss my problems and concerns with my partner. _____
28. When I'm not involved in a relationship, I feel somewhat anxious and _____

APPENDIX D

Millon Clinical Multiaxial Inventory III (MCMI-III)

161. I seem to create situations with others in which I get hurt or feel rejected.
162. I often get lost in my thoughts and forget what's going on around me.
163. People say I'm a thin person, but I feel that my thighs and backside are much too big.
164. There are terrible events from my past that come back repeatedly to haunt my thoughts and dreams.
165. Other than my family, I have no close friends.
166. I act quickly much of the time and don't think things through as I should.
167. I take great care to keep my life a private matter so no one can take advantage of me.
168. I very often hear things so well that it bothers me.
169. I'm always willing to give in to others in a disagreement because I fear their anger or rejection.
170. I repeat certain behaviors again and again, sometimes to reduce my anxiety and sometimes to stop something bad from happening.
171. I have given serious thought recently to doing away with myself.
172. People tell me that I'm a very proper and moral person.
173. I still feel terrified when I think of a traumatic experience I had years ago.
174. Although I'm afraid to make friendships, I wish I had more than I do.
175. There are people who are supposed to be my friends who would like to do me harm.

APPENDIX E

Patient Demographic Form

Code:_____

ASI Self-Report Form

This survey asks questions about your background and employment, your health and family relationships, your legal situation, and your alcohol and drug use. Please answer each question as accurately as you can by placing an "X" in the box next to the answer you select, writing in the appropriate number, or writing in information in the space provided.

PART I: YOUR BACKGROUND AND EMPLOYMENT

1. When were you born? _____
   Month Day Year

2. What is your current marital status? (Check one)
   ☐ **Never married** ☐ **Separated** ☐ **Divorced** ☐ **Married** ☐ **Widowed**

2a. Are you satisfied with your marital situation? ☐ **NO** ☐ **YES** ☐ **Indifferent**

3. How many days were you paid for working **in the past 30 days**?
   (Include paid sick and vacation days and days of "under the table" work) _____
   number of days

4. How much money did you receive from employment **in the past 30 days?**
   (Include paid sick and vacation days and days of "under the table" work) **$** _____

5. Do you have a valid driver's license (not suspended or revoked)? ☐ **NO** ☐ **YES**

6. Do you have an automobile available on a regular basis? ☐ **NO** ☐ **YES**

Note: This is a self-report version of the Addiction Severity Index (ASI) used by the Center for Health Care Evaluation, VA Palo Alto Health Care System (152-MPD), Menlo Park, CA, 94025. See Rosen, Henson, et al. (2000: Addiction, 95, 419-425) for information on this version and see McLellan, Kushner, et al., (1992: Journal of Substance Abuse Treatment, 9, 199-213) for general information on the ASI.

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