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Impact of a modified Dialectical Behavior Therapy treatment on coping methods and impulsiveness in female inmates

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Abstract

Dialectical Behavior Therapy was designed as a treatment for borderline personality disorder and has been shown to be effective for individuals with this diagnosis in community mental health and psychiatric settings. Research has shown that borderline personality disorder is prevalent among incarcerated women and some clinicians have begun to implement modified Dialectical Behavior Therapy protocols (Coping Skills groups) with inmates. Little research is available on the effectiveness of this treatment in a correctional setting. In the current study, changes in impulsivity and coping ability of female inmates participating in Coping Skills groups were examined during the treatment period and compared to those in treatment-as-usual groups and those receiving no treatment. Data from all participants were collected at beginning, midpoint, and the end of the treatment periods. Between-group analyses suggested that changes in coping ability and levels of impulsiveness demonstrated by Coping Skills participants were not found to be significantly greater than such changes among comparison group participants. However, when examining within-group data across the treatment period, it was found that treatment group participants significantly improved coping abilities and lowered impulsiveness while changes within comparison group participants were not found to be significant.

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Dissertation

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IMPACT OF A MODIFIED DIALECTICAL BEHAVIOR THERAPY TREATMENT
ON COPING METHODS AND IMPULSIVENESS IN FEMALE INMATES

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

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ABSTRACT

Dialectical Behavior Therapy was designed as a treatment for borderline personality disorder and has been shown to be effective for individuals with this diagnosis in community mental health and psychiatric settings. Research has shown that borderline personality disorder is prevalent among incarcerated women and some clinicians have begun to implement modified Dialectical Behavior Therapy protocols (Coping Skills groups) with inmates. Little research is available on the effectiveness of this treatment in a correctional setting. In the current study, changes in impulsivity and coping ability of female inmates participating in Coping Skills groups were examined during the treatment period and compared to those in treatment-as-usual groups and those receiving no treatment. Data from all participants were collected at beginning, midpoint, and the end of the treatment periods. Between-group analyses suggested that changes in coping ability and levels of impulsiveness demonstrated by Coping Skills participants were not found to be significantly greater than such changes among comparison group participants. However, when examining within-group data across the treatment period, it was found that treatment group participants significantly improved coping abilities and lowered impulsiveness while changes within comparison group participants were not found to be significant.

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INTRODUCTION

The United States has a larger proportion of its citizens imprisoned than any other industrialized nation (Federal Sentencing Reporter, 2007; Singer & Bussy, 1995). In 2005 the United States' prison population reached approximately 1.5 million; when those residing in jails were added, the number grew to 2.2 million, which can be translated to 737 per 100,000. The second-ranking country for imprisonment was China where reportedly 1.5 million of its citizen population, which is much larger, was imprisoned (Federal Sentencing Reporter, 2007). These rates are much higher than those of the countries that fell into the third and fourth places; Russia and Cuba, where 607 and 487 per 100,000 people were incarcerated, respectively. Further, when looking at Western European countries, the incarceration rates fell into a range from 78 to 145 per 100,000.

These numbers have been changing dramatically over the last several decades. In fact, the population of those incarcerated in the United States has risen at a rate of 700% between 1970 and 2005 (Federal Sentencing Reporter, 2007). In the last 30 years, several policy changes have contributed to this growth in the United States prison population: abolition of parole and adoption of truth-in-sentencing requirements, passage of "three-strikes" laws, the movement from indeterminate to determinate sentencing, lower parole grant rates, and establishment of sentencing guidelines. The rates of prison and jail admissions increased faster than the rate of releases at midyear 2006, according to the Bureau of Justice Statistics Bulletin, and this trend resulted in significant population growth (Sabol, Minton, & Harrison, 2007). In addition to increased numbers of newly

incarcerated people and lowered numbers of those being released, continued high rates of recidivism have also accounted for a large portion of criminal behavior. Thus, many new crimes have been committed by those who have previously been imprisoned and released (Greenfeld & Snell, 1999). An increasing number of researchers have begun to focus specifically on the continuing trend of recidivism in terms of how criminality is addressed within the prison system, in order to find ways to more effectively prevent future criminality.

Many authors have noted that adopting rehabilitation methods shown to be effective for particular inmate populations is imperative in order to effect long-term changes in crime rates (Covington, 1998; Holtfreter, Reisig, & Morash, 2004; Parsons & Warner-Robbins, 2002; Seiter, 2004; Thompson & Harm, 2000). Other authors have written that people act in deviant ways in order to meet their needs when they are oppressed and lack resources to meet those needs in prosocial ways (Austin & Hardyman, 2004; Holtfreter et al., 2004; Kane & DiBartolo, 2002; Singer & Bussey, 1995; Trupin, Stewart, Beach, & Boesky, 2002; Young, 2000). Thus, in order to prevent future criminality, programs targeted at offering inmates prosocial skills for survival after their prison sentence should continue to be developed.

To better understand the phenomenon of criminal behavior and recidivism, many researchers have focused on identifying risk factors (Covington, 1998; Holtfreter et al., 2004; Parsons & Warner-Robbins, 2002; Singer & Bussey, 1995). One of the most interesting findings from this research has been that, during the last few decades, being female has become a risk factor because the rate of female felony convictions since 1990 has increased more than twice as quickly as the rate for males (Beck & Harrison, 2001).

In a U.S. Department of Justice Bureau of Justice Statistics report published in 2001, it was noted that the number of male prisoners since 1990 grew 77%, while the female prison population increased 108% (Beck & Harrison, 2001). In a federal forecast report regarding America's prison population published in April 2007, it was stated that "the number of women prisoners is projected to grow by 16 percent by 2011, while the male population will increase 12 percent" (Federal Sentencing Reporter, 2007, p. 234).

Additionally, the rapidly increasing number of women in the criminal justice system is particularly concerning because this population has disproportionately high recidivism rates (Bloom, Owen, & Covington, 2003; Greenfeld & Snell, 1999; Holtfreter et al., 2004).

The effects of female criminality are often complex and long-lasting for several reasons. For example, 64% of incarcerated women are custodial parents who resided with their minor children prior to being imprisoned, as compared with 44% of men (Bloom et al., 2003; Greenfeld & Snell, 1999; Hull & Manning, 2003; Mumola, 2000; Thompson & Harm, 2000). As will be discussed in more detail below, this issue is important to consider because children who have a parent in prison have also been shown to be much more likely to interact with criminal justice systems themselves.

At least some of the risk factors that lead women to criminal behavior are distinct from those of men and can be identified when looking at background characteristics of women in prison. The experiences and challenges of female inmates differ on several counts from those of male inmates (Bloom et al., 2003; Covington, 2001; Holtfreter et al., 2004; Singer & Bussey, 1995; Young, 2000). Specifically, women in prison have more frequently been victims of physical and sexual abuse either during their childhoods or in

adult relationships than have men in prison and women in the community (Covington, 1998; Kane & DiBartolo, 2002; Singer & Bussey, 1995). Although in general women are less likely than men to have substance use disorders, they have more often been addicted to and/or under the influence of substances when they commit the crime for which they are arrested (Austin & Hardyman, 2004; Beck & Harrison, 2001; Covington, 1998, 2001; Kane & DiBartolo, 2002; Parsons & Warner-Robbins 2002; Singer & Bussey, 1995; Thompson & Harm, 2000; Trupin et al., 2002). Thompson and Harm (2000) also reported that 75% of women who recidivated were reported to have been using drugs at the time of the offense. Therefore, it is likely that substance use is a concern for female correctional populations.

Incarcerated women have been shown to exhibit a higher rate of mental illness than do women in the community (Bloom et al., 2003; Ditton, 1999). Women in prison have commonly been diagnosed with mood-related mental illnesses such as depression, anxiety, and posttraumatic stress disorder (PTSD; Bloom et al., 2003; Kane & DiBartolo, 2002; Trupin et al., 2002). They have also been more prone than men in prison to experience eating disorders, specifically bulimia nervosa and anorexia nervosa (Bloom et al., 2002). Such mental illnesses can be exacerbated when an individual enters the prison environment (Kane & DiBartolo, 2002).

More long-standing diagnoses such as personality disorders have been discussed by several authors as well (Gibbs, 1982; Kane & DiBartolo, 2002; Trupin et al., 2002). In fact, the diagnosis of borderline personality disorder (BPD) has been studied among female inmates because of its apparently high incidence within that population. This disorder is longstanding, complex, and often entails dangerous behaviors such as self-

harm and suicide attempts. Given the intricacy and seriousness of this disorder, varying therapeutic approaches are applied when treating individuals with BPD. However, few have proven strongly efficacious when researched (Barley et al., 1993; Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006; Swenson, 2000).

Marsha Linehan (1993) developed a treatment called Dialectical Behavior Therapy (DBT) to treat patients with BPD. The goals of this treatment are to increase adaptive behaviors and skill development so that individuals can have greater abilities to address emotion dysregulation, relational difficulties, maladaptive cognitions, and behaviors (Kiehn & Swales, 1995; Linehan, 1993; McDonagh, Taylor, & Blanchette, 2002; Swales, Heard, & Williams, 2000). The treatment has been shown to be effective in community and inpatient settings for with people with BPD or symptoms of BPD (Cahill-Masching & Ray, 2003; Kiehn & Swales, 1995; Linehan, 1993; McCann, Ball, & Ivanoff, 2000; McDonagh et al., 2002; Swales et al., 2000; Trupin et al., 2002). It has also been shown to be effective for women diagnosed with substance dependence in a community treatment setting (Koerner & Dimeff, 2000; Linehan et al., 1999).

DBT has been used in only a few prison settings and its level of effectiveness in this context is still largely unknown. To date, only two investigational studies have been published regarding the use of DBT with incarcerated adult women (Farman & Nee, 2005; Nee & Farman, 2005). The purpose of the current study was to examine the effectiveness of a modified DBT program, called Coping Skills Treatment, on self-reports of impulsiveness and coping skills in female inmates before, during, and at the conclusion of treatment. If an evidence-based, cost-effective, and easily replicable form of treatment is identified, it could be employed with many inmates in a group format.

This may lead to a reduction in the time and cost of managing the often difficult and even dangerous behaviors of many inmates diagnosed with BPD or exhibiting symptoms on the BPD spectrum. In the future, the use of such a treatment in the prison system may even lead to a reduction in recidivism because inmates will gain skills they need in order to become more productive in their communities rather than having to fall back on old methods of survival that led to incarceration (Bloom et al., 2003; Covington, 1998; Holtfreter et al., 2004; Singer & Bussey, 1995).

In the following sections, I look in more depth at female inmates' characteristics, their criminality, and the consequences of their criminality in communities. Emphasis is placed on mental health issues and DBT is discussed in more detail as a specific treatment that is believed to embody facets that effectively address the needs of this growing population.

LITERATURE REVIEW

General Characteristics of Prison Inmates

Sabol et al. (2007) of the Bureau of Justice Statistics wrote that as of June 30, 2006, an estimated 2,245,189 people were housed in state and federal prisons as well as in local jails. Bosworth (2004) reported that, according to data from 2001, more than two-thirds of prison inmates recidivated within three years of release. The most recent study found that aimed to provide national rates of recidivism took place in 1994 (Langan & Levin, 2002). Of the inmates who were released in 1994 and who were tracked in that study, 67.5% had been rearrested within three years for a new offense. This was reportedly an increase over the 62.5% found to have been released in 1983 and rearrested within three years. Of those rearrested, the population was largely male (68.4%), and black (72.9%). This high rate of recidivism suggests that more work is needed to address rehabilitation needs of inmates (Langan & Levin, 2002). To begin meeting such a need for effective rehabilitation methods that address both characteristics of inmates and risk factors for criminal behavior, an understanding of whom treatment is to be geared toward is imperative.

Data on characteristics of prison inmates have been both predictable and surprising. Sabol et al. (2007) reported that in 2006 the majority of inmates under state or federal jurisdiction were male (about 91%) and Black (40%). In the male populations, the majority of prisoners identified as Black (approximately 41%), followed by White (approximately 35%) and Hispanic (approximately 21%). The modal ages of male

inmates varied depending on race: Most Black male inmates were reportedly between the ages of 20-24 (44%), as were most White inmates (30%). Hispanic men comprised the smallest group of male inmates (21%) with their modal age being from 25-29 (25%). Women comprised a minority of all inmates (9%).

Characteristics of Female Inmates

Looking more specifically at female inmates, one of Beck and Harrison's (2001) surprising findings, mentioned above, was that the number of female inmates has increased since 1990 (a 108% increase compared to 77% for male inmates). When looking at the incarcerated population at midyear 2006, female prisoners comprised 9% of the overall population (Sabol et al., 2007). However, Sabol et al. noted that this population increased faster than did the male prison population. In fact, whereas the male growth rate between midyear 2005 and 2006 was 2.7%, the female rate was much higher at 4.8% (Sabol et al., 2007). According to the Federal Sentencing Reporter (2007), 25 states were able to provide their projected prison population increases from 2007-2011 according to gender. In total, as also noted above, these states are expected to house 16% more females by 2011, whereas the male populations are only expected to increase 12%. Further, it was stated that "researchers' interviews with other state correctional officials suggest that higher female growth rates are likely to continue in the other states as well" (Federal Sentencing Reporter, 2007, p. 1).

As has been mentioned above, much of the overall growth among incarcerated populations has been attributed to policy change as well as recidivism. When the recidivism rates of the incarcerated population are examined by gender, it becomes apparent that female inmates' rate of recidivism have been substantial (65% in 1999, up

from 58% reported in the 1994 study above). When the recidivism factor is combined with the rapid increase in the female incarceration rate, concern about rapidly growing numbers of women in the criminal justice system appears warranted (Greenfeld & Snell, 1999; Langan & Levin, 2002).

As outlined above, several researchers have suggested that the female inmate population is qualitatively different from the male inmate population in several ways. Information from both Beck and Harrison (2001) and Sabol et al. (2007) suggests that the some of these differences reflect demographic features and the nature of the most common criminal behaviors. Several other researchers have noted that the consequences of female criminal behavior on communities differ from that of male offenders and that the risk factors that may contribute to females' engagement in criminal behavior are divergent from the factors for male offenders (Bloom et al., 2003; Covington, 1998; Holtfreter et al., 2004; Singer & Bussey, 1995; Young, 2000;). Finally, mental health issues are also disproportionate among women in prison as compared with men in prison (Bloom et al., 2003; Greenfeld & Snell, 1999; Holtfreter et al., 2004). Each of these factors will be discussed in more detail below.

Demographics of Female Inmates

Data reported by Sabol et al. (2007) suggested that the population of female inmates tended to be older than male inmates (modal age was 30-39 for females and 20-24 for males) and racially different than male inmates. According to Sabol et al. (2007), "Black women were incarcerated in prison or jail at nearly 4 times the rate of white [sic] women and more than twice the rate of Hispanic women" (p. 1). As noted above, the majority of male prisoners identified as Black (approximately 41%), followed by White

(approximately 35%) and Hispanic (approximately 21%; Sabol et al., 2007). Sabol et al.'s data for the female population indicated there were more White inmates (approximately 47%) than Black inmates (approximately 34%), thus indicating that racial composition differs between male and female inmate populations. The number of Hispanic female inmates (16%) was lower than, but still comparable to, the number in the male inmate population.

Female Criminal Behaviors

Many female inmates have been addicted to substances, which has presented a treatment need while these women are housed in the prison system. This issue has also been reflected in the criminal behavior of women, as evidenced by data from 2000 reported by Beck and Harrison (2001) showing that the most frequent crimes committed by women in state jurisdictions were drug offenses (approximately 34%). Harrison and Beck (2006), using data from 2003, reported the estimated number of sentenced prisoners under state jurisdiction according to categories of offense types (violent, property, drug, public order, and unspecified). They found that the most common offenses for both men and women were violent offenses (53% and 34.8%, respectively). However, the most common violent offenses within this category were robbery among men (14.4%) and murder among women (10.5%). Though women committed a relatively high proportion of violent crimes, the second most common category of offenses among women was property-related offenses (30%). Interestingly, when looking at specific crimes within the categories listed above, the highest percentage of crime type committed by women overall was tied between murder and fraud (both 10.5%). Incidentally, it was also reported that the overall proportion of violent offenders of any gender increased from

1995 to 2003 from 47% to 52% (Harrison & Beck, 2006). Thus, according to these data it appears that, although the numbers of women being convicted of crimes continues to increase, the types of crimes they commit have become more violent as well.

Consequences of Female Criminality on Society

In terms of social consequences of female criminality, one of the main issues to consider is parental status. As noted above, approximately 64% of incarcerated women are custodial parents who resided with their minor children prior to being imprisoned (Bloom et al., 2003; Greenfeld & Snell, 1999; Hull & Manning, 2003; Mumola, 2000; Thompson & Harm, 2000). Not only are more women inmates parents relative to their male counterparts, Reed and Reed (1997) reported that, whereas 87% of the children of incarcerated men were in the mother's care during the father's imprisonment, only 20% of women's children were in the care of the other parent during the mother's imprisonment. They stated, "This leaves over a quarter of a million children of incarcerated parents in the care of grandparents, other relatives, friends, or foster care" (p. 152).

A report from the Bureau of Justice Statistics in 2000 noted that approximately 90% of fathers residing in state prison said that at least one of their children now lived with his or her mother, yet only 28% of mothers said the father was the child's current caregiver (Mumola, 2000). This report also stated that, as a result of increasing numbers of incarcerated females since 1990, "the number of children with a mother in prison nearly doubled (up 98%) since 1991, while the number of children with a father in prison grew by 58% during this period" (Mumola, 2000, p. 2). It was also noted that more than 60% of parents in state prisons reported being held at a facility that was located over 100

miles from their last place of residence. These issues of custodial care and visitation for children are important to consider because children who have a parent in prison have been shown to be much more likely to interact with criminal justice systems themselves. In fact, Barnhill (1996, as cited in Parsons & Warner-Robbins, 2002) reported that children were “five times more likely to come into contact with the criminal justice system or juvenile courts than other children whose mothers are not incarcerated” (p. 7). Reed and Reed (1997) also cited American Correctional Association (1990) data showing that 50% of incarcerated juveniles had a parent who had been incarcerated. These trends are reflective of the ripple effect that has been initiated when women are incarcerated (Greenfeld & Snell, 1999).

Another reason the issue of parental custody is important when addressing women’s issues in prison is that women who have been released from prison and who then reenter parenthood have faced specific challenges in being able to care for their children by fostering secure emotional attachment and meeting basic needs (Covington, 1998; Parsons & Warner-Robbins, 2002; Thompson & Harm, 2000). Thus, possible consequences of female criminality include increased numbers of children with a greater likelihood of being placed in alternative care, more children with a significantly higher risk of initiating their own criminal behaviors, and children who are unable to recover a secure attachment with their mother after prison. These factors can contribute to a new generation of at-risk men and women who may increase or at least sustain current crime rates.

Risk Factors Unique to Women

Holtfreter et al. (2004) observed that women were in a unique position in terms of risk of committing or recommitting crimes. Specifically, they stated that the United States had the highest number of female-headed households living in poverty as well as the largest discrepancy between genders related to poverty. Additionally, the authors examined welfare policy changes as well as employment and economic marginalization trends and reported that “the research shows that the burden of poverty falls most heavily on women and children” (p. 188). They also concluded that “these findings, coupled with the knowledge that the overwhelming majority of women offenders are mothers with young children (Owen & Bloom, 1995), suggest that poverty is a salient issue to consider in studies of women’s crime” (p. 188).

Inmates and Mental Illness

In addition to noting the increasing number of female inmates, authors have also reported an increase over the past two decades in the rate of inmates who suffer from a mental illness (Bloom et al., 2003; Trupin et al., 2002). However, an increase in recognition and treatment of such illnesses likely also contribute to this trend. In her report of data from midyear 1998, Ditton (1999) noted that 7% of federal inmates, 16% of state inmates, and 16% of inmates in local jails reported “either a mental condition or an overnight stay in a mental hospital” (p. 1). It was also reported that mentally ill inmates in state custody were more likely than inmates not identified as mentally ill to be incarcerated for violent offenses (53% vs. 46%) or to have been under the influence of drugs or alcohol at the time of the offense (59% vs. 51%). Further, mentally ill inmates represented more than twice the number of those who had been homeless in the year prior

to their arrest (20% vs. 9%) in comparison to inmates not identified as mentally ill. In addition to substance abuse issues, it was also stated that a high proportion of mentally ill inmates reported prior physical or sexual abuse (30% of males and 78% of females). A total of 61% of state inmates and 41% of jail inmates reported having received mental health treatment in the form of medication, counseling, or other types of services since the beginning of their incarceration (Ditton, 1999).

As noted above, there has been a high incidence of longstanding and complex mental health issues among women in prison (Gibbs, 1982; Kane & DiBartolo, 2002; Trupin et al., 2002). People with severe mental illnesses require skilled care in order to prevent situations where they or those around them might be negatively impacted by psychosis, suicide, parasuicidal, or other behaviors. The need to find ways to care for individuals coping with such illnesses has been prevalent in most prisons, and lack of resources due to such large inmate populations have proven to be a challenge to this end (Cahill-Masching & Ray, 2003; Covington, 1998). Many researchers have agreed that increasing numbers of inmates with mental illnesses have raised a cause for concern regarding treatment within prisons that are not necessarily oriented toward rehabilitation (Bloom et al., 2003; Covington, 1998; Singer & Bussey, 1995). In order to design programs that are most effective in allowing inmates to gain the skills they need to be productive citizens upon their release, it is important to understand the needs and characteristics of the specific inmates in the program. One such issue is substance abuse and/or dependence.

Substance Abuse

As noted above, substance abuse and dependence has likely been the most significant mental health issue among prisoners, especially among women and minorities (Austin & Hardyman, 2004; Beck & Harrison, 2001; Covington, 1998, 2001; Kane & DiBartolo, 2002; Parsons & Warner-Robbins 2002; Singer & Bussey, 1995; Thompson & Harm, 2000; Trupin et al., 2002). Some authors have hypothesized that the increasing prison population is largely attributable to both an increased focus on arresting those committing drug-related acts and to strict determinate sentences being imposed for certain drug-related crimes in order to deter others from committing such crimes (Covington, 1998; Orberdorfer, 2002; Tonry, 2000). It has also been observed that biased sentencing policies (e.g., longer mandated sentences for crack cocaine than cocaine powder) have unfairly targeted specific classes of people – in particular, those of lower socioeconomic status and ethnic minorities (Covington, 1998; Orberdorfer, 2002).

Within the total inmate population in 2003, Black inmates had the highest incidence of drug-related convictions (24%), and both Hispanic and White inmates had lower rates (23% and 14%, respectively; Harrison & Beck, 2006). As noted above, the incidence of drug-related crimes has been the most common area of female criminality in the past (Austin & Hardyman, 2004; Beck & Harrison, 2001; Covington, 1998, 2001; Kane & DiBartolo, 2002; Parsons & Warner-Robbins 2002; Singer & Bussey, 1995; Thompson & Harm, 2000; Trupin et al., 2002). Reports of female criminality between 1990 and 1996 showed that female offenders most frequently committed property felonies (44%), particularly fraud; yet even during that period drug felonies were still the second largest area of criminality among women (37%) and the charges reported were

mostly related to trafficking (Greenfeld & Snell, 1999). In 2003, the rate of drug-related charges was a bit lower (29% among females and 19% among males); though the prevalence of drug-related crimes was the third most common type of offense among women, it was nearly equal to the rate of property offenses, which were the second most common type of crime committed (29.1% and 30%, respectively; Harrison & Beck 2006). Additionally, in a study published in 1999, about 60% of women in state prisons reported having used drugs within the month prior to their offense, and 50% stated that they had been using drugs on a daily basis prior to arrest; a total of 40% were under the influence of a drug at the time of their arrest (Greenfeld & Snell, 1999).

Other Mental Illnesses Among Women

Both men and women in the community experience mental illnesses at about the same rate, but they tend to manifest different symptoms and illnesses (Bloom et al., 2002). For example, women have been diagnosed with depression twice as frequently as men and have been two to three times more likely to experience anxiety disorders specifically, in the form of phobias, panic, and PTSD (Bloom et al., 2002). The most commonly diagnosed illnesses among women in prison have been PTSD, substance abuse, anxiety, and depression (Bloom et al., 2002; Kane & DiBartolo, 2002; Trupin et al., 2002). The prevalence of PTSD is also much higher among male inmates than in males in the community, yet the antecedent traumas may be different for men than they are for women (e.g., men are more likely to witness severe injury or the death of another person, whereas women are more likely to experience domestic abuse; Gibson et al., 1999). Other researchers have also noted that affective disorders are prevalent among

men in prison, but comparable prevalence rates between male and female inmates were not found (Teplin, 1994).

Borderline Personality Disorder

As noted previously, several authors have discussed more long-standing diagnoses common among female inmates, such as personality disorders (Gibbs, 1982; Kane & DiBartolo, 2002; Nee & Farman, 2005; Trupin et al., 2002). In fact, the diagnosis of borderline personality disorder (BPD), defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR*; American Psychiatric Association, 2000), has been studied among female inmates because of its high incidence within this population. Symptoms of BPD outlined in the *DSM-IV-TR* include five or more of the following:

- (1) frantic efforts to avoid real or imagined abandonment...
 - (2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation
 - (3) identity disturbance: markedly and persistently unstable self-image or sense of self
 - (4) impulsivity in at least two areas that are potentially self-damaging...
 - (5) recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior
 - (6) affective instability due to a marked reactivity of mood...
 - (7) chronic feelings of emptiness
 - (8) inappropriate, intense anger or difficulty controlling anger...
 - (9) transient, stress-related paranoid ideation or severe dissociative symptoms
- (p. 710)

Several researchers have observed that symptoms reflected in the BPD diagnosis such as substance abuse and impulsivity were strongly associated with female criminal behavior (Hernandez-Avila et al., 2000; McCann et al., 2000; Nee & Farman, 2005). Further, Trupin et al. (2002) examined the mental health issues of female juvenile offenders and noted that “as many as 70% may have substance abuse or dependence, and the symptoms—and even the diagnosis—of borderline personality disorder” (p. 122). In a

more recent study, Nee and Farman (2005) stated that the prevalence of BPD among female inmates in England and Wales was found to be approximately 20% compared to 2% in the general population.

Mental Health Care in Prison

As noted above, managing mental illness among inmates requires resources, time, and skill while these individuals are housed within the prison system. For example, bolstering the supervision of inmates known to act out draws on resources, and medical and mental health responses are needed when an inmate harms him- or herself or another inmate (Cahill-Masching & Ray, 2003; Nee & Farman, 2005). The possibility that an inmate will harm him- or herself or another inmate has also presented ethical concerns for those housing mentally ill inmates in the general population because, although they are imprisoned, inmates should not be required to live among those who may harm others or to be harmed due to their own or others' mental instability. Given these issues, several authors have written about the need to systematically identify, supervise, and treat mentally ill inmates, particularly because confinement is not adequate treatment for those who suffer from an illness (Covington, 1998; Kane & DiBartolo, 2002; McCann et al., 2000; Nee & Farman, 2005; Singer & Bussey, 1995; Trupin et al., 2002; Young, 2000). Further, many treatments that have been employed have little to no research basis and have often been ineffective as well as costly (Latessa, 2004; Trupin et al., 2002).

Issues in Treatment of Female Inmates

In terms of addressing the needs of female inmates specifically, common issues have been suicidal and parasuicidal behaviors, depression, difficulties in interpersonal relationships, and lack of adherence to regulations within the prison (Cahill-Masching &

Ray, 2003; Trupin et al., 2002). Many such problematic behaviors and symptoms have been attributed to emotion dysregulation, symptoms within the BPD spectrum, or diagnosable BPD, as mentioned above (Cahill-Masching & Ray, 2003; Hernandez-Avila et al., 2000; Nee & Farman, 2005; Trupin et al., 2002). Relationships have been established between emotion dysregulation and violent behaviors in both men and women in forensic settings (Fonagy et al., 1997; Hernandez-Avila et al., 2000; Leichsenring, Kunst, & Hoyer, 2003; McCann et al., 2000). BPD diagnoses have a high rate of comorbidity with substance abuse and, in addition to substance abuse issues among female inmates noted above, many women who end up in prison on drug-related charges may also exhibit many borderline-type difficulties (Gibbs, 1982; Kane & DiBartolo, 2002; Trupin et al., 2002). Given the prevalence of these difficulties among inmates, especially among female inmates, and the need to identify, monitor, and treat such individuals, it is useful to seek out treatments designed for individuals with these difficulties to more effectively treat this growing population within the prison system.

Dialectical Behavior Therapy as a Treatment for Female Inmates

One treatment that has been designed for treating individuals (primarily females) with BPD is Dialectical Behavior Therapy (DBT). This treatment, designed by Marsha Linehan (1993) is based on biosocial theory, attachment theory, and dialectics. The underlying philosophy is that some individuals are born with a biological predisposition to high levels of emotional responsiveness to their environment and actually live in environments Linehan (1993) called “invalidating” (p. 56). In an invalidating environment, the individual grows up perceiving their primary caregiver, whom they seek out to satisfy their basic emotional needs, as unpredictable rather than safe, and often,

their own strong emotional responses are not only discouraged but discounted or questioned. According to Linehan, this invalidation leads such individuals to develop an insecure attachment, which consists of a range of interpersonal difficulties including a deficit in coping with and regulating their strong emotional reactions. This is because their insecure attachment style leads them to experience very strong affect due to a high level of defensiveness, a resulting sensitivity to invalidation from others, and a lack of certainty of the validity of their own emotions.

In the following discussion I present DBT as discussed by Linehan (1993), Kiehn and Swales (1995), McDonagh et al. (2002), and Swales et al. (2000). The treatment is conducted by applying dialectical thinking so as to both accept a patient's plight while simultaneously teaching skills to change undesirable thoughts and behaviors. The skills taught are based on dialectics, cognitive behavioral theory as well as Zen Buddhism. DBT is designed to be both a group and individual treatment in which a patient may only participate in the group skills learning portion of DBT if he or she agrees to complete the treatment and maintain weekly therapy with an individual therapist during the group treatment period. The group treatment is designed to be 6 months long, with consecutive periods of 6 weeks being dedicated to each of four treatment modules. Group sessions are conducted weekly and range from 90 to 180 min, depending on the setting. Treatment must be conducted by a treatment team consisting of a group leader, co-leader, individual therapist, and any others involved in the care of an individual who can participate. Thus, if the treatment is conducted in an inpatient setting, nursing staff, and other hospital staff will also be members of the treatment team to allow for consistent maintenance of

boundaries modeled by those patients interact with, as well as more holistic treatment in general.

DBT treatment begins by teaching patients the biosocial theory of how emotional struggles derived (i.e., having a predisposition for emotional reactivity combined with an invalidating environment) and skills to better trust and cope with emotions. The ultimate goals are to teach patients dialectical thinking skills. The philosophical term “dialectic” is used in a therapeutic sense to denote an internal conflict that may lead an individual to become overwhelmed or defeated. The goal of a dialectic exercise, as well as of dialectical thinking skills, is to synthesize or combine the opposing assertions. This can be done by outlining how to accept one’s self and situation while simultaneously changing certain problematic thought patterns and behaviors using learned awareness and skills. To this end, the four treatment modules in DBT provide skills in Core Mindfulness, Distress Tolerance, Emotion Regulation, and Interpersonal Effectiveness.

The first module, Core Mindfulness, is focused on mindfulness adapted from Buddhist psychology. The therapist teaches patients how to gain an awareness of their state of mind and how they tend to behave when in different states of mind (e.g., “emotion mind, reasonable mind, and wise mind”; Linehan, 1993, p. 214). The goal is to observe one’s emotional responses and reactions out of such responses but to remain nonjudgmental during such observations. Observation techniques are taught in order to aid skills in this area (e.g., how to passively and actively observe) as well as skills directed toward holding one’s mind to the current moment rather than the past or future in order to gain focus.

The second module, Distress Tolerance, is focused on acquiring skills directed toward enduring the emotional stress associated with by upsetting situations. The goal is to be able to endure inevitable times of emotional distress using adaptive skills instead of maladaptive destructive coping methods such as drug use, self-harm, or suicidal ideation. Skills taught are distraction techniques, self-soothing, cognitive reframing in the moment, as well as how to weigh the pros and cons of tolerating distress using helpful versus hurtful coping skills. The notion of accepting the reality of a situation mindfully (“radical acceptance”; Swenson & Payne, 2005, p. 14) while coping with distress is taught from a dialectical standpoint in this module.

In the third module, Emotion Regulation, the clinician seeks to teach patients to understand their emotions by learning further skills to observe them as well as describe them and understand their function. The process one goes through when prompted by an event (internal or external) toward an emotional state is outlined from a physiological (neurochemical and physiological arousal) as well as a behavioral standpoint (changes in face and body expressions and actions), with the goal of understanding the process and function of emotional response. Functions of emotions in relationships and other situations are described and ways to care for oneself in order to find well-being are taught. The experience of positive emotions is focused on in this module in an effort to counter the tendency many patients have to gravitate toward negative emotions out of distrust of or a feeling of not deserving to feel them. Ways to examine the utility of one’s emotions in a situation (i.e., whether they are justified) are highlighted as well.

In the fourth and final module, Interpersonal Effectiveness, the focus is on teaching patients skills so that they can begin to establish more effective relationships

with others who are important to them as well as people in the community they need to relate with effectively in order to be successful. This module is important because people with BPD tend to have low levels of confidence as well as a high sensitivity to being invalidated by others. This tendency leads to high emotional reactivity, acting out, and other behaviors that challenge interpersonal relationships. Because of the nature of these symptoms, many people diagnosed with this disorder do not have effective skills for initiating and maintaining relationships, which in turn leads them to use methods of meeting their needs that are perceived by others as manipulative (e.g., making demands, instilling guilt, passive-aggressive behaviors, or acting-out behaviors).

Skills taught in the fourth module are “objectives effectiveness” (making requests effectively), “relationship effectiveness” (empathy, assessing needs), and “self-respect effectiveness” (Swenson & Payne, 2005, p. 30). Patients are taught that, in order to have a positive interaction with another person, they must consider the three skill areas above to assess their progress (i.e., they assess whether they have asked for what they need, considered the other person and their needs, and maintained their values and dignity in the process). Many assertiveness skills are taught, such as describing the context of one’s request and feelings and asking for something in a clear way. Patients are taught to be considerate of another person’s feelings and the relationship in general when making requests, as well as maintaining their self-respect in the process.

Research on Effectiveness of DBT

DBT is a fairly new treatment (Linehan first wrote about it in 1993). Many articles have been written about it, yet few controlled studies have been conducted to date (Swenson & Payne, 2005). DBT has been shown to be effective in community and

inpatient settings for people diagnosed with BPD or symptoms of BPD (Bohus et al., 2000; Cahill-Masching & Ray, 2003; Koerner & Dimeff, 2000; Linehan, 1993; McCann et al., 2000; McDonagh et al., 2002; Swales et al., 2000; Trupin et al., 2002). It has had mixed reviews concerning its level of effectiveness for women diagnosed with substance dependence in a community treatment setting (Linehan et al., 1999; Smith & Peck, 2004). Few studies assessing the long-term effectiveness of DBT in any setting have been conducted, and those that have been done have offered mixed findings (Linehan, Heard & Armstrong, 1993; Scheel, 2000; van den Bosch, Koeter, Stijnen, Verheul & van den Brink, 2005).

The body of research on DBT is also somewhat limited because many of the existing studies were conducted by Marsha Linehan, who developed the treatment, and have yet to be replicated by other researchers. In their 2004 article, Smith and Peck reviewed the body of research and stated that several researchers have found DBT to be significantly effective when used to “reduce hopelessness, depression, anger, suicidal acts, dissociation, and frequency of parasuicidal behavior” (p. 26). They also stated that DBT has been significantly effective in increasing global functioning, and decreasing self-harm and impulsivity in several studies in both institutional and community settings. In their study, van den Bosch et al. (2005) asserted that “DBT is specifically developed to keep the BPD patient alive and reduce life-threatening behaviour in order to make long-lasting treatment possible” (p. 1238). Although researchers may not agree whether DBT is the best treatment for reduction of the core features of BPD, many have outlined promising results for increasing immediate stability and safety of high-risk individuals

(Koerner & Dimeff, 2000; Linehan, Heard & Armstrong, 1993; Nee & Farman, 2005; Trupin et al., 2002; van den Bosch et al., 2002, 2005).

Use of DBT with Female Inmates

Implementing DBT treatment with certain groups of females in the prison setting could be beneficial for several reasons. First, the *DSM-IV-TR* diagnostic criteria for BPD contain a symptom picture that is very similar to the behaviors of many female inmates. In fact, many female inmates have been given this diagnosis or have been noted to struggle with symptoms within the spectrum of BPD (Gibbs, 1982; Hernandez-Avila et al., 2000; McCann et al., 2000; Nee & Farman, 2005; Trupin et al., 2002). Second, both non-forensic and hospitalized individuals diagnosed with BPD have been shown to respond very well to DBT (Cahill-Masching & Ray, 2003; McCann et al., 2000; McDonagh et al., 2002; Trupin et al., 2002). Third, although little research exists to date on using DBT with female prison inmates, DBT has been shown in six studies to have significant promise for female forensic populations, male forensic populations, and juvenile female forensic populations (Cahill-Masching & Ray, 2003; Evershed et al., 2003; Farman & Nee, 2005; McCann et al., 2000; Nee & Farman, 2005; Trupin et al., 2002). These studies will be presented in order of their degree of relevance to the current study. The most relevant studies related to female inmates are discussed first, followed by studies focused on males in forensic settings and one study in which participants were females in a juvenile forensic setting.

Studies on DBT with female inmates. Nee and Farman (2005) sought to measure the viability of DBT in a prison environment. They gathered data on 30 women in three British prison facilities who underwent a DBT pilot program beginning in 2001. Two of

the facilities offered a year-long program and the third offered a 16-week program. Participants had been given a diagnosis of BPD based on the Structured Clinical Interview, second edition (SCID II), at the beginning of the study and had been actively engaging in self-harm or other behaviors that were considered to be parasuicidal or suicidal at the onset of treatment. Of the 30 women who began treatment, 16 continued to completion. Five of those who left treatment had been transferred or released, which indicated a dropout rate of 33% among the remaining women. The authors also collected data from a waiting list control group of 8 women who met the participation criteria, though only 5 of these group members completed all required measures.

The authors used 2 behavioral measures and 10 psychometric tests at four time points (beginning, midway, end, and 6-month follow-up). The behavioral measures focused on suicidal ideation and quality of life. The quantitative measures, which were the focus of the study, included the Borderline Syndrome Index, Rosenberg Self Esteem Inventory, Eysenck's Impulsivity Questionnaire, Dissociative Experiences Scale, as well as the Survival and Coping scale of the Reasons for Living Inventory. Data from self-harm records and adjudication information were also collected.

When analyzing qualitative behavioral data, the authors found a small increase toward the beginning of the treatment period for both the treatment and comparison groups. This level then decreased by the midpoint data collection period and remained at the same level until the end of the program. During the 6-month follow-up period, self-harm was found to have increased slightly for the DBT group but remained at a level that was lower than the pretreatment levels. In their discussion, the authors reported statistically significant improvements in four key psychometric tests. They stated that

effect sizes were notable (ranging from 0.40 to 0.61) on a measure of the BPD diagnosis as well as of impulsivity, locus of control, and emotion regulation. Finally, it was also reported that the comparison participants also demonstrated changes similar to those in treatment groups, although to a lesser degree. It was noted that participants of both groups were housed in the same units and thus a contagion of treatment was possible. The limitations of this study were largely related to the fact that the treatment was part of a pilot treatment and took place in a prison setting. Logistical challenges given the prison setting included difficulties maintaining staff trained in DBT, providing consistent external supervision by DBT trainers, and maintaining a presence of prison staff trained to promote a DBT milieu. Many of these challenges were due to limited funding, particularly in this setting, as well as the high degree of stress inherent in employment in a prison. This setting may have also presented difficulties when employing treatment methods due to the fact that inmates lived together (which increased the intensity of many interpersonal and other difficulties being addressed by the program). Further, the authors also reported some degree of turnover among the inmates, which made treatment retention somewhat challenging. It is also important to note that the treatment itself was one designed for North Americans and was being applied in a setting in England. The authors also wrote that the pilot treatments were implemented very quickly in order to capture available funding, which resulted in a more succinct orientation period for the participants. Further, the pilot treatments began a month before the Christmas period, which also left participants without treatment during a two-week holiday break soon after the beginning of treatment.

In another study by Farman and Nee (2005) published in the same year, the authors presented data on participants who underwent DBT treatment at one of three prison facilities (noted in the study above) with a qualitative focus on the experience of the prison staff and the participants a year after the study described above. The participants in this study appear to have been from the same group as those in the article outlined above, though this was not explicitly stated. In this study, the authors described the perceptions of 15 participants in terms of what they hoped to achieve from DBT, in addition to their experiences when seeking to control aggression, negative thoughts, and anger, or to develop appropriate relationships. The authors also described the experiences of staff in terms of the development and implementation of the program. Based on the qualitative data from staff and participants Farman and Nee concluded that, although implementing such a program in a custodial setting in the United Kingdom brought about numerous challenges, “positive changes have been achieved with a population of women who have deeply entrenched, multi-problematic lives and who are traditionally known for their exceptionally difficult and resource-draining behaviour, and their inability to engage in therapy” (p. 18).

Cahill-Masching and Ray (2003) also described DBT as a highly effective treatment when they subjectively observed the effects of implementation at the Women’s Evaluation Treatment Center in Illinois at the Dwight Correctional Center. In their article, they described the Treatment Center and the steps they used in order to begin DBT treatment with the population there. They noted that, though the coordination and implementation of DBT was initially fairly complex, the correctional staff were able to be more effective in preventing rather than enforcing acting-out behaviors among women at

their facility and that this allowed the staff to enjoy more unity and less stress when managing difficult inmates. The authors indicated that when inmates were more effectively managed, “available resources [could] be used to make progress in treatment and not be wasted on unimportant matters” (p. 69). Cahill-Masching and Ray concluded that, despite the necessity of a high level of coordination between staff and the new skills that had to be learned in order to practice DBT, “shifting the investment of time and resources to a program designed for preventative intervention (instead of relying on reactive measures) for the severely behaviorally disordered female offender has been well worth the effort for Dwight Correctional Center” (p. 73).

Studies on DBT with males in forensic settings. In a fourth study, Evershed et al. (2003) gathered data on a group of 8 male forensic patients who underwent an 18-month treatment based on DBT addressing anger and violence in a high-security hospital setting (p. 198). The goal of their study was to assess the level of effectiveness of this treatment in targeting anger and violence. Participants met the criteria for BPD, identified using the Personality Assessment Inventory. The DBT-influenced treatment was comprised of weekly skills groups as well as weekly individual DBT sessions. Five clinicians (four psychologists and a nurse) offered these components of DBT. Each clinician had extensive experience doing cognitive behavioral therapy with forensic patients. Data were collected prior to treatment, at the midpoint, post-treatment, and 6 months following treatment. Participants were asked to complete three psychometric tests during these time points: the Buss-Durkee Hostility Inventory, the State-Trait Anger Expression Inventory, and the Novaco Anger Scale. The seriousness and frequency of violent behaviors

demonstrated by participants were also observed and rated by blind and independent judges.

The authors reported that individuals receiving DBT treatment displayed greater gains than those receiving treatment as usual on a number of measures, including the reduction of various forms of hostility and anger. However, it was also noted that the behavioral differences as measured by the Novaco Anger Scale did not reach significance. The seriousness of behaviors related to violence was reduced in the treatment groups compared with those not in the DBT treatment, although the frequency of these behaviors did not change significantly over time. When looking at mean scores, improvement was noted on many of the subscales, but this improvement had deteriorated by post-treatment assessment. However, these means had improved again at the time of follow-up. The authors suggested that participants' progress may have waned at the completion of treatment due to fear of abandonment given the loss of therapeutic support.

Evershed et al. (2003) also noted some limitations of their study. First, of the five clinicians offering various components of the treatment, three had attended a two-week DBT training course and the remaining two had no training and attempted to use the DBT guidelines to employ the treatment. Second, the treatment itself had to be modified in several ways due to the setting and the gender of the participant group (e.g., telephone consultation was replaced by trained skills coaches on each ward; some group materials were also altered to be more male-oriented). Finally, the participants were also able to access other treatments within the hospital during the DBT treatment.

A fifth study on a forensic population was conducted by McCann et al. (2000) who adapted DBT for use with a male forensic sample at the Institute for Forensic

Psychiatry in Colorado. They elected to use DBT at this facility because of the high rate of BPD and other behavioral problems that occur when individuals are incarcerated against their will. The authors also identified “staff burnout” due to “staff invalidation, hopelessness, anger, and fear” (p. 5) as a large motivation for the team-oriented DBT approach. The purpose of the study was to identify what types of adaptations should be made when using DBT with forensic populations compared to community mental health and inpatient settings where it is most often utilized. A study group made up of an equal number of staff and “the most antisocial, yet helpful” (p. 9) patients reviewed the *DBT Skills Training Manual for Treating Borderline Personality Disorders* (Linehan, 1993) in 1.5-hr weekly meetings over the period of one year. They identified the structure and requirements of DBT treatment and contrasted them with the limitations to treatment unique to a forensic population. With this information, the study group modified DBT to address specific issues: the high number of male patients who exhibited antisocial behaviors, the fact that treatment is mandated and constrained by legal and institutional demands, and the high incidence of both staff burnout and invalidation in the forensic environment.

Ultimately, McCann et al. (2000) were able to compile a list of recommendations based on literature on forensic populations and the goals of DBT. They reported that DBT was an effective tool to use in forensic settings when certain adaptations were made, such as maintaining the first stage of treatment as the only stage due to the severity of behavior problems in forensic settings. They also recommended increasing focus on “Unit Destructive Behaviors” (p. 18) that threaten the milieu on a unit and thus threaten treatment. Additionally, McCann et al. reported that “DBT is currently conducted in

approximately a dozen forensic institutions and at least 6 to 10 criminal justice settings in the U.S., Canada, U.K. and Australia” (p. 24).

DBT with females in a juvenile forensic setting. In the sixth relevant study, Trupin et al. (2002) implemented DBT with female juveniles in a forensic setting in Washington. They used intervention records of offenders from the general population, mental health population, and a general treatment-as-usual population in order to measure behavioral differences over the period of time DBT was implemented. Trupin et al. reported that DBT elicited positive effects in the mental health population who participated in DBT treatment. Specifically, they observed fewer behavior problems, such as aggressive, disruptive, or suicidal acts. However, many of the behavior changes evident in the mental health population DBT treatment groups were also exhibited in the control group or fit the patterns of previous treatment-as-usual group changes over time. No significant positive effects pertaining to the general population DBT treatment group were noted. The authors stated that early in the research project it became apparent that, despite equivalent demographic characteristics, rates of Axis I diagnoses, and number of prior offenses in the two DBT treatment groups, implementation of the DBT treatment in the mental health and general population groups was not equivalent. The authors explained that this occurred as a result of discrepant levels of training between the mental health and general population staff. In spite of this discrepancy, the authors reported that the level of decrease in the “use of restrictive punitive actions such as room confinement and suicide precautions” (p. 126) was significant.

Purpose of the Present Study

The female prison population is one that has been neglected in the past due to the small numbers of women in prison historically (Bloom et al., 2003; Jensen & Jones, 1976). However, more recent trends showing exponential growth of both women entering and reentering the prison system have pointed to a need to account for the specific needs of this population in an effort to address such trends. As treatment of female inmates becomes a more prevalent issue, it appears that available treatments have been largely developed for men and may not be addressing needs and strengths specific to female inmates who differ in many important ways from their male counterparts (Bloom et al., 2003; Covington, 1998, 2001).

In looking at common mental health needs of inmates, specifically females, it has become clear that many mental health difficulties mirror those attributed to BPD specifically impulsiveness, affect regulation, and ability to effectively cope with stress (Kane & DiBartolo, 2002; Trupin et al, 2002). Thus, DBT (or a modification of the program to meet the needs of a correctional setting) seems a logical possibility in approaching the needs of women in prison because it is a treatment shown to be effective for women in both the community and inpatient settings with BPD or features of BPD. Though studies of the long-term effectiveness of DBT are limited and results are mixed, it remains a treatment that would likely increase safety among inmates and decrease the time and cost of managing many difficulties presented by inmates with BPD. Further, studies suggest positive treatment effects whether DBT is modified to be offered for a

period of 6, 12, or 18 months, and inmates can participate in DBT skills groups repeatedly as booster sessions throughout their incarceration to maintain their progress (Evershed et al., 2003; Nee & Farman, 2005; Trupin et al., 2002). If such a treatment were able to address the emotional difficulties and skills deficits among the female inmate population, lower rates of recidivism may result as women return to the community better equipped to lead prosocial lives rather than enacting criminal behaviors in order to meet their needs.

In the current study I sought to measure the level of effectiveness of a modified DBT treatment referred to as “Coping Skills” among female inmates at Coffee Creek Correctional Facility in Wilsonville, Oregon. To do this, self-report questionnaires that measure constructs related to BPD symptoms such as marked impulsiveness, affective instability, and intense uncontrollable anger (described above) were reviewed. Measures that focus on both level of impulsiveness and adaptive coping ability were selected based on the high incidences of maladaptive impulsiveness levels and coping behaviors among women in prison (Hernandez-Avila et al., 2000; McCann et al., 2000; Nee & Farman, 2005; Trupin et al., 2002;). Additionally, some of the main goals of DBT are to address impulsiveness and coping ability due to the deficits in these areas in people diagnosed with BPD and BPD-spectrum disorders experience (Linehan, 1993), which further supported this choice of measures.

Impulsiveness and coping scores were obtained at four time points: during the first week of treatment, at midpoint of treatment (12 weeks), at the concluding or 24th week of treatment, and 3 months post-treatment. Participants were drawn from a total of 16 DBT treatment groups, which were comprised of one set of eight concurrent DBT

groups and a second set of eight concurrent DBT groups offered immediately after completion of the first. Data were also collected from participants in comparison groups concurrent with data collection in treatment groups and at the same time points. Due to an extremely small number of participants from comparison groups during the first set of DBT groups, I collected data from a broader sample of participants not undergoing any treatment during the second set of DBT groups. I hypothesized that women participating in DBT treatment groups would report lowered levels of impulsiveness, as well as an increase in effective coping abilities and a decrease in less effective coping abilities at the conclusion of treatment, as compared to both their own reported baseline rates as well as to individuals in comparison groups.

METHOD

Participants

Data were collected from a sample of 217 female inmates residing at the Coffee Creek Correctional Facility (CCCF), a minimum, medium, and maximum security level prison in Wilsonville, Oregon. Of these inmates, 137 were participants in Coping Skills groups and 80 belonged to comparison groups (described below). By the end of treatment, a total of 60 inmates, 42 in the Coping Skills groups and 16 in the comparison groups, had completed all measures for all time points. Given the high attrition rate throughout the data collection process (discussed more fully below), only complete data sets from these inmates were included in this study.

Participants ranged from 19-55 years of age, with a mean age of 35. The ethnic composition of the sample was 72.1% White, 9.8% American Indian or Alaskan Native, 4.9% Black, and 3.3% Hispanic. The modal highest level of education was high school or GED (50.8%). A relatively large number of participants (24.6%) reported that they had completed some college, and 21% reported that grade school (8th grade or lower) was their highest level of education. In terms of marital status, an equal number of inmates were divorced or legally separated (31%), or single and never married (31%). Approximately the same percentage (28%) were married or in a long-term exclusive relationship. Inmates' sentences ranged from 11 months to 25 years, and they had served an average of 22 months ($M = 22.4$, $SD = 30.2$) at the time of first data collection. A total of 77% reported having served at least one previous prison sentence. According to

Oregon Department of Corrections data from 2006, participants were generally representative of the overall prison population at CCCF in terms of age and race (CCCF, 2006). The overall population consisted of a total of 971 women of whom 46% were age 31-45 and 84% were White. Information about relationship status, education level, and sentence length for the population were unknown.

Measures

Participants were assessed using the Barratt Impulsiveness Scale or BIS-11 (Patton, Stanford, & Barratt, 1989) and the COPE scale (Carver, Scheier, & Weintraub, 1989). The BIS-11 is a 30-item instrument with three subscales to identify impulsive behaviors: impulsive non-planning (INP), motor-impulsivity (MI), and attentional impulsivity (AI). The scale assesses impulsiveness as a trait separate from anxiety and was first developed in 1959 (Patton et al., 1989). Norms are available for female substance abuse patients, female inpatients with psychiatric disorders, and male inmates from a maximum security facility. The internal consistency of the BIS-11 has ranged from .79 to .83 in prior studies, and scores on the identified subscales were correlated moderately for validity (Patton et al., 1989).

The COPE is a 53-item questionnaire that focuses on coping ability and is largely based on theories of coping that were proposed by Lazarus beginning in 1966 (Carver et al., 1989). The authors of the COPE defined ways of coping by developing 14 “conceptually distinct” (Carver et al., 1989, p. 267) subscales. Of these subscales, five measure facets of problem-focused coping (Active Coping, Planning, Suppression of Competing Activities, Restraint Coping, Seeking of Instrumental Social Support), five measure emotion-focused coping (Seeking of Emotional Social Support, Positive

Reinterpretation, Acceptance, Denial, Turning to Religion), and four measure coping responses identified as less effective (Focus on and Venting of Emotions, Behavioral Disengagement, Mental Disengagement, Drug/Alcohol Disengagement).

The COPE is a widely utilized measuring tool. However, it has been shown to have poor psychometric attributes (e.g., low reliability among too many factors), and the high number of subscales makes it difficult for use in studies with smaller sample sizes (Lyne & Roger, 2000). For this reason, researchers have often chosen to omit or compile the subscales, but until recently few researchers have specifically analyzed the psychometric properties of either the three- or four-factor models (Hasking & Oei, 2002). In the early part of the decade, two studies were published that directly address the factor structure of the COPE, and outcomes in both studies generally supported a three-factor structure (Hasking, Oei, 2002; Lyne & Roger, 2000).

Hasking and Oei (2002) researched the utility of the COPE in addition to the validity of the 14 subscales and the possible use of a three- or four-factor structure with an alcohol-dependent sample in Australia. They maintained that the original 14-factor structure remained psychometrically superior to other structures. However, they also noted that their findings supported use of a three-factor structure given the limitations such a large number of factors can present. They stated that the use of a three-factor structure was comparable to the 14-subscale model and appropriate for many types of studies. Hasking and Oei did not directly outline the three-factor structure in their study, so it is difficult to discern specifically which items comprised each of the three factors. However, Lyne and Roger (2000) also characterized each of the three factors similarly to Hasking and Oei (though different names were given to the factors in each study).

Lyne and Roger (2000) conducted their study using the COPE with a community sample in the United Kingdom in order to specifically focus on the utility of a three-factor model. They proposed a scoring key for the three factors of the COPE, and this key was used when analyzing the data in the current study. The three factors analyzed were named Rational Coping (Factor 1), Emotion Coping (Factor 2), and Avoidance (Factor 3). The test-retest reliability as measured using Cronbach's alpha reliability coefficients were high for each of the factors (Rational Coping, .89; Emotion Coping, .83; and Avoidance, .69). Each of the three factors were identified in terms of whether they were effective or ineffective coping methods; it was determined that the Rational and Emotion Coping factors captured effective coping abilities, whereas the Avoidant factor related to less adaptive methods. Thus, higher scores on the Rational and Emotion Coping factors, and a lower score on the Avoidance Coping factor, are believed to be desirable (Lyne & Roger, 2000).

Procedure

Data were collected during two consecutive 24-week Coping Skills treatment cycles. During the first cycle, participants were members of one of either eight Coping Skills groups or three comparison groups that began in February 2006. The participants in the comparison groups during the first cycle were drawn from a treatment-as-usual group called Symptom Management. Symptom Management is a six-week psychoeducational class designed to educate inmates about their respective mental health diagnoses by teaching them how to manage their medications and/or manage and identify their related symptomatology. These classes are a requirement for all inmates who are on the Counseling and Treatment Services (CTS) caseload due to the presence of one or more

mental health diagnoses (CCCF, 2006; personal communication, J. Krechman, March 12, 2006).

During the second cycle of Coping Skills beginning in May 2006, participants were in either one of eight treatment groups or one of four comparison groups. During this cycle, comparison groups were composed of inmates on the CTS caseload who were randomly selected from a list rather than those who were attending the Symptom Management groups. This change was made due to several factors: a very low number of inmates participating in Symptom Management, the large difference in length between the treatment and Symptom Management groups (24 and 6 weeks, respectively), as well as a desire for a comparison group whose members were less directly contaminated by another treatment.

In terms of inmates' security status, eight of the treatment groups and four of the comparison groups were composed of both medium and maximum security participants, and the remaining eight treatment and four comparison groups had members of minimum security status only. Maximum security facilities require frequent head counts and the population generally consists of people with long-term or life sentences or those who are seen as posing risks of assault, escape, or gang membership (O'Connor, 2004). Medium security facilities allow inmates more privileges and contact with the outside world, and inmates in these types of facilities are usually those with little or no escape or gang risk who are to complete their sentences within approximately five years (O'Connor, 2004).

Minimum security facilities generally house nonviolent offenders, and are usually structured in a dormitory style where prisoners are able to move more freely within the facility and its connecting outdoors areas (O'Connor, 2004). Inmates in minimum

security may also be in alternative programs such as boot camps. Many minimum security inmates receive daily work pass privileges to work in designated sites. Within CCCF, those who have three years or less left on their sentence, or who have committed specific nonviolent crimes, are placed in the minimum security facility. Overall, security classifications are composed of sublevels that account for the length of an inmate's sentence and the extent of supervision they require based on criteria such as the type of crime they committed and/or having demonstrated behaviors that resulted in disciplinary reports (J. Krechman, personal communication, July 20, 2005).

Participants in the current study were selected to participate in Coping Skills groups based on established mental health characteristics set forth by the correctional institution (CCCF, 2005). Specifically, in order to be admitted into a Coping Skills group, an inmate's mental state had to be classified at the MH-2 or MH-3 Mental Health Needs Levels as defined by the CTS Correctional Programs Division staff. To meet MH-2 or MH-3 level criteria, one must meet criteria for a specific diagnosis, as shown in Table 1 (CCCF, 2005; personal communication, J. Krechman, November 8, 2007).

Data were collected during the beginning of group treatment meetings at several time points: during the first meeting of a new DBT group treatment period, at the midpoint or 12th week of treatment, and at the conclusion of treatment. Data were also gathered at a fourth time point 12 weeks after the conclusion of treatment for the first cycle of treatment groups and all comparison groups. In the case of the comparison groups, data collection mirrored that of the treatment group as closely as possible. During the first cycle of comparison groups (the six-week Symptom Management class), data were collected during the first class, the midpoint (third class), and the ending sixth class.

During the second cycle, data were collected from the comparison group concurrent with data collection from the DBT treatment groups.

Table 1

Diagnostic Criteria Required for Participation in Coping Skills Group

MH-2 Mental Health Need Level Criteria		MH-3 Mental Health Need Level Criteria	
Diagnostic Code	Diagnosis	Diagnostic Code	Diagnosis
307.1	Anorexia	298.9	Psychosis NOS
307.51	Bulimia	285.xx	Schizophrenia
307.50	Eating Disorder NOS	296.xx	Bipolar Disorder
301.83	Borderline Personality Disorder	300.12	Dissociative Disorders
297.1	Delusional Disorder	296.3	Major Depressive Disorder, Recurrent
294.xx	Dementia	295.70	Schizoaffective Disorder
299.80	Pervasive Devel. Disorders	295.40	Schizophreniform Disorder
296.2x	Major Depressive Disorder, Single Episode		
301.22	Schizotypal Personality Disorder		
307.23	Tourette's		
301.3	Cylothymia		
300.22	Agoraphobia		
300.01	Panic Disorder		
300.3	Obsessive-Compulsive Disorder		
311.1	Depression NOS		
296.90	Mood Disorder NOS		
300.4	Dysthymic Disorder		
301.0	Paranoid Personality Disorder		
309.81	Post Traumatic Stress Disorder		
298.8	Brief Psychotic Disorder		

At the start of data collection, I approached potential participants in small groups in the classroom where Coping Skills groups were offered. I explained both the motivation for the study and the option to participate. Potential participants were given informed consent forms to review (see Appendix A) and asked if they were interested in participating. They were also given the opportunity to decline participation and to ask questions. If inmates chose to participate, they were asked to complete the measures prior to the beginning of the group. If they chose not to participate, they were not approached at a later time because only participants who had filled out questionnaires beginning at the first time point were included in the study. Participants were given as much time as they needed in order to complete questionnaires in that one sitting. Questions pertaining to the completion of the measures were answered during that time period. Additionally, participants completed a short demographic questionnaire (see Appendix B) at the time of the first data collection.

The prison setting presented several challenges related to both applying the DBT treatment and collecting data for this study. First, the DBT protocol calls for two clinicians to co-facilitate treatment, and this requirement had to be modified to a single clinician due to logistical limitations. Second, one clinician facilitated six of the treatment groups while another clinician facilitated the remaining two groups each week. The attrition rate was extremely high (only 28% of the original participant pool remained at Time 3), though attendance remained largely stable throughout treatment. Attrition occurred due to a variety of reasons: inmates being required to attend other meetings during data collection times, being ordered to disciplinary segregation, electing not to participate at one time point, and so forth. Finally, incomplete data resulted from invalid

responding to questionnaires, such as giving multiple answers, making ineligible selections, and omitting information. These problems were likely due to several factors, such as the low level of education of many participants and lack of familiarity with questionnaire formats and completion expectations.

Treatment

The DBT-influenced Coping Skills treatment at CCCF was administered by two licensed psychologists who conducted the treatment for all eight treatment groups in both cycles assessed in this study. DBT was specifically adapted for use at CCCF in two ways. First, participants were not able to attend weekly individual therapy sessions due to limitations resulting from the inmate-staff ratio. However, the group facilitator allowed participants a period of individual time as it became available before, after, or at a scheduled time if at all possible. This time did not serve as an individual therapy session but rather served to allow inmates to ask questions about using skills in specific situations and to gain personal support from the instructor.

Second, as noted above, only a single staff member conducted the individual groups due to the limited number of staff members available. Additionally, as in community mental health DBT groups, participants were required to commit to completing the treatment in its entirety before being admitted into a group. Per Oregon Department of Corrections policy, participants faced the risk of a program failure being noted in their prison record if they did not complete a group to which they had committed. A program failure indicates that the inmate did not fulfill a commitment and could negatively impact the inmate's ability to be released early for good behavior. Inmates participate in treatment groups on a voluntary basis, and continued participation

and personal responsibility for such election is valued highly as it would be in an occupation. Inmates' completion of such programs is noted in their institutional record per Oregon Department of Corrections policy, which enables them to receive recognition for efforts toward self-improvement while incarcerated (J. Krechman, personal communication, July 20, 2005). As noted above, the treatment offered was called "Coping Skills" treatment rather than DBT due to adaptations made to the DBT protocol for use at CCCF.

Scoring

All scores were calculated for three of the four time points for both treatment and comparison groups. Data from the fourth time point (12 weeks post-treatment) were not included in the final analyses because they were not collected from half of the treatment participants (the second cycle of the treatment group) due to procedural difficulties. Though the BIS-11 is structured into three subscales in addition to a total score, only the total score for each of the three time points was calculated due to recommendations by one of the BIS-11 authors. This recommendation was based on difficulties identifying the one of the three subtraits (later named Attentional Impulsivity) as it was originally conceptualized by Barratt when conducting factor analyses on the BIS (M. Stanford, personal communication, May 17, 2007; International Society for Research on Impulsivity, 2007). On the COPE, the three factors outlined above (Rational Coping, Emotion Coping, and Avoidance) were calculated for treatment groups at each of the three time points and for all comparison group participants (combined as one non-treatment group) for each of the three time points. These scores served as the 12 variables identified for data analysis.

RESULTS

As noted above, the BIS-11 and COPE were utilized as outcome measures in this study. The BIS-11 is a measure of level of impulsiveness, and smaller BIS-11 scores suggest lowered levels of impulsiveness (Patton, Stanford, & Barratt, 1989). Because the COPE factors used for the purposes of this study (Emotion Coping, Rational Coping, and Avoidance) were based on prior research by Lyne and Roger (2000) outlined above, no clinical norms were available to use as a basis of comparison. However, the total possible score on the Rational Coping factor is 84, on Emotion Coping is 44, and on the Avoidance factor is 60, based on the scoring key presented in Lyne and Roger's (2000) study. As noted above, the Rational and Emotion Coping factors measure more effective coping styles, whereas the Avoidance factor measures less effective methods. Thus, Rational and Emotion Coping scores should increase over time and Avoidance scores should decrease if treatment is effective for improving coping skills.

Two hypotheses, also noted above, were explored. The first hypothesis had three components: the level of impulsiveness would decrease, the use of effective coping methods would increase, and the use of ineffective coping methods would decrease from baseline to endpoint within the treatment group. The second hypothesis was that participants in the treatment group would show greater change in the desired direction (decreased impulsiveness, increased reliance on more effective coping methods, decreased use of less effective coping methods) from pre- to posttreatment than would participants in the comparison group.

Statistical Analyses Used

The first hypothesis considering within-group differences was examined using the Friedman Test. The Friedman test is a nonparametric statistical analysis in which test data are ranked to determine whether the rank totals are significantly different (Siegel, 1956). This test resembles a parametric analysis of variance (ANOVA), and is used when assumptions for the ANOVA are not met. The null hypothesis states that the distribution of ranks would be equal and due to chance (e.g., the test conditions did not in fact differ). The alternative hypothesis is that the participants' scores were dependent on the conditions (Hinton, Brownlow, McMurray, & Cozens 2004; Siegel, 1956). For this study, the alternative hypothesis was that the treatment group participants' score distributions were dependent on the treatment conditions and that therefore their distributions varied significantly from baseline (Time 1) to end of treatment (Time 3; Siegel, 1956). Because the hypothesis involved evaluating the effect of the treatment over time, all available data related to the time points were included (Time 1: pretreatment; Time 2: 12 weeks; and Time 3: 24 weeks). The asymptotic value is a resulting statistic of the Friedman test; it is derived from a number similar to a Chi-Square statistic (χ^2) and is used to assess whether the results are significant (Hinton et al., 2004; Siegel, 1956). When reviewing resulting data, the Friedman Test asymptotic values were considered using a significance level of .05.

The second hypothesis considering between-group differences was evaluated using the Mann-Whitney U test. This analysis is a nonparametric test designed for use with independent samples with ordinal data and is utilized to determine whether two sets

of data are drawn from identical populations (McCall, 2001; Pagano, 1998; Siegel, 1956). Similar to the Friedman test, the null hypothesis states that because the two samples are assumed to be drawn from a single population their probability distributions are equal. The directional alternative hypothesis states that scores in one group are significantly larger than those in the other group. Rejecting the null hypothesis would suggest that the distributions for each group are significantly different (Siegel, 1956). In this study, the alternative hypothesis was that when considering the endpoint (Time 3) test scores, the treatment group participants' Rational (Factor 1) and Emotion Coping (Factor 2) COPE scores would be significantly higher than those of the comparison group, and the treatment group participants' BIS total and Avoidance (Factor 3) COPE scores would be significantly lower than those of comparison group participants. The Mann-Whitney *U* test results in a probability (*p* value) that is either provides support for the null hypothesis or leads to its rejection. The *p* value was evaluated based on an alpha of .05.

Combining Comparison Groups

Due to the small number of participants in the two comparison groups (8 in the first cycle and 8 in the second cycle), the feasibility of combining these two groups into one was explored. Groups were potentially qualitatively different because the first group obtained treatment as usual whereas the second group was not undergoing any treatment at the time of data collection. (However, all participants in the second comparison group had undergone treatment as usual at one point, per Oregon Department of Corrections CTS policy.) To determine whether data for the groups could be combined, a Mann-Whitney *U* test was conducted using both groups' scores on each measure (BIS total, COPE rational, emotion, and avoidance factors) at Time 1. This test was selected as an

alternative to a permutation test due to the inability to run permutation tests on the SPSS program used. No significant differences were found (BIS-11 Total $p = .694$; COPE Factor 1 $p = .779$; COPE Factor 2 $p = .955$; COPE Factor 3 $p = .505$), and thus the groups were subsequently combined for testing of the hypotheses.

Evaluation of Hypotheses

Table 2 displays descriptive statistics for the treatment and comparison groups at Times 1 and 3 (i.e., pretreatment, 12 weeks into treatment, and immediately posttreatment). Figures 1-4 illustrate the patterns of change for treatment and comparison groups based on these descriptive statistics.

Table 2

Descriptive statistics for treatment (n = 42) and comparison groups (n = 16)

Outcome Measure	Time 1*		Time 3	
	Treatment <i>M (SD)</i>	Comparison <i>M (SD)</i>	Treatment <i>M (SD)</i>	Comparison <i>M (SD)</i>
BIS				
Total	76.5 (11.6)	77.2 (11.1)	70.9 (10.5)	76.0 (11.4)
COPE Factors				
Rational	48.0 (10.3)	51.6 (11.8)	56.9 (10.6)	53.2 (11.2)
Emotion	26.6 (7.1)	26.1 (7.8)	29.0 (6.2)	26.7 (5.9)
Avoidance	35.9 (6.4)	37.8 (9.2)	34.5 (7.4)	36.1 (7.8)

**Time 1: Pretreatment; Time 3: Posttreatment (24 weeks)*

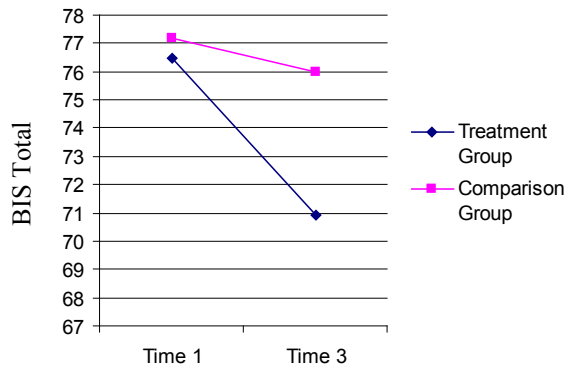


Figure 1. Treatment and Comparison Group BIS Total Scores Time 1 and Time 3.

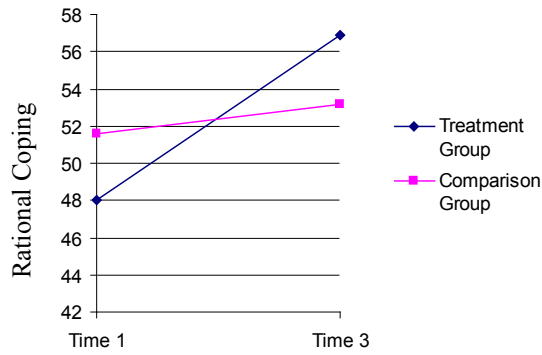


Figure 2. Treatment and Comparison Group Rational Coping Scores Time 1 and Time 3.

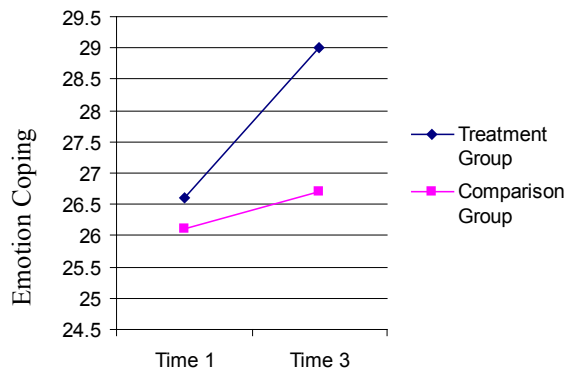


Figure 3. Treatment and Comparison Group Emotion Coping Scores Time 1 and Time 3.

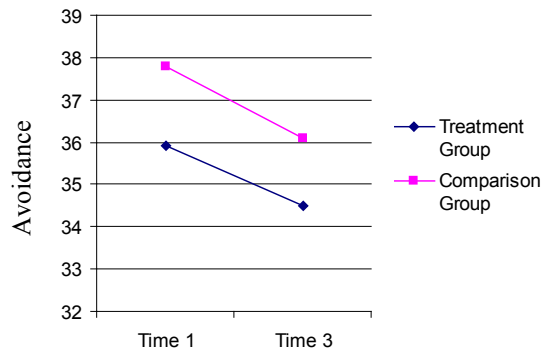


Figure 4. Treatment and Comparison Group Avoidance Scores Time 1 and Time 3.

All three components of the first hypothesis (that the level of impulsiveness would decrease, effective coping methods would increase, and ineffective coping methods would decrease from baseline to endpoint for all treatment groups) were addressed by conducting a series of Friedman analyses on the treatment group’s BIS total scores and COPE factors for each of the three time points. Although the initial hypotheses stated that impulsiveness and coping would change from baseline to endpoint, with no hypothesis about what might happen at midpoint, data from the midpoints were included during the data analysis process. The purpose of this inclusion of midpoint data was to increase the accuracy of the results and decrease the chance of misleading results by utilizing all data available.

Four analyses were thus conducted for the treatment group (one for all time points on the BIS-11 total score, and one for each of the three time points for the three COPE factors). A Mann-Whitney *U* analysis was also run in order to address the second hypothesis (i.e., evaluating any differences in levels of impulsiveness and coping skills between treatment and comparison groups). The Friedman Test asymptotic values for the treatment group variables (BIS-11 total score and COPE factors across all three time

points) were found to be significant with the exception of the COPE Avoidance variable (Table 3 and Figure 4). Thus, the first hypothesis was supported with the exception that treatment group participants' utilization of negative coping styles (Avoidance) did not significantly change over the treatment period.

Table 3

Friedman values evaluating treatment group changes across time points (Hypothesis 1)*

Outcome Measure	Asymptotic value ^o χ^2
BIS Total	.015
COPE Factors	
Rational	.000
Emotion	.009
Avoidance	.751

*Time 1: Pretreatment; Time 2: Midpoint (12 weeks); Time 3: Post Treatment (24 weeks)
^o $p \leq .05$

The second hypothesis was that participants in the treatment group would show greater change in the desired direction (decreased impulsiveness, increased reliance on more effective coping methods, and decreased use of less effective coping methods) from pre- to posttreatment than would participants in the comparison group. As above, the two comparison groups were found to be similar enough on their resulting scores on both the BIS-11 and COPE measures at baseline to warrant combining them for final analyses. Thus, when examining the second hypothesis, the two comparison groups were combined into one comparison group and eight Mann-Whitney U tests were run (an analysis comparing the treatment group to the newly combined comparison group at Times 1 and

3) for each set of scores. The eight Mann-Whitney *U* tests analyzed the following factors and results of each test can be found above: BIS total (Figure 1), COPE Factor 1 (Rational Coping; Figure 2), COPE Factor 2 (Emotion Focused Coping; Figure 3), and COPE Factor 3 (Avoidance; Figure 4). Only the results of one of the eight analyses was shown to be significant (BIS total score at Time 3). Thus, the second hypothesis was supported only for the BIS-11 scores (Table 4 and Figure 1).

Table 4

Mann-Whitney U values comparing changes among treatment group scores to those among comparison group at Time 1 and Time 3

Outcome Measure	Time point	
	Time 1*	Time 3
	<i>p</i> -value ^o	<i>p</i> -value
BIS Total	.472	.019
COPE Factors		
Rational	.198	.093
Emotion	.397	.215
Avoidance	.224	.123

*Time 1: Pretreatment; Time 3: Post Treatment (24 weeks)

^o $\alpha = .05$

After reviewing the above results, Friedman analyses were run on the comparison group to assess whether participants in the comparison group changed significantly during the treatment period. This was done in order to better understand why, if change occurred over time in the treatment group, such change was not seen when comparing the treatment group to the comparison group. Interestingly, none of the results of the

Friedman test for each variable (BIS-11 total, COPE Factors 1, 2, and 3) were significant for the comparison group (BIS-11 total $Xr^2 = .832$; COPE Factor 1 $Xr^2 = .701$; COPE Factor 2 $Xr^2 = .356$; COPE Factor 3 $Xr^2 = .350$). These findings suggest that, although the changes that occurred in the treatment group over time were statistically significant, they were not large enough to be found significantly greater than those demonstrated in the comparison group when the two groups were directly compared.

DISCUSSION

In this study, I evaluated the effectiveness of a DBT-based treatment (referred to as Coping Skills) among female inmates in 16 Coping Skills groups. Effectiveness was measured as changes over time in impulsiveness and coping ability as measured on two self-report questionnaires. In addition, the treatment group was compared on the same factors with a group not participating in Coping Skills on the same factors.

The first hypothesis was that participants in the treatment group would demonstrate lowered levels of impulsiveness and ineffective coping methods (avoidant) as well as increased levels of effective coping methods (emotion and rational coping) at the end of treatment as compared to their baseline or pretreatment scores. Analyses indicated that treatment group participants' scores changed significantly between pretreatment and end of treatment on all measures with the exception of avoidance (COPE factor 3). Thus, the first hypothesis was supported with the exception that treatment group participants' utilization of negative coping styles (Avoidance) did not significantly change over the treatment period.

The second hypothesis was that participants in the treatment group would show greater change in the desired direction (decreased impulsiveness, increased reliance on more effective coping methods, and decreased use of less effective coping methods) from pre-to posttreatment than would participants in the comparison group. Results indicated that the only variable on which the treatment group showed greater change than the

comparison group was on the BIS total score at the end of treatment (Time 3). Thus, the second hypothesis was only supported for the BIS-11 scores.

Given these results, it seems clear that significant changes occurred over time among participants in the treatment groups, at least in terms of change in impulsiveness and effective coping abilities between baseline and end of treatment, as well as changed levels of impulsiveness when compared to the comparison group. This in turn suggests that the treatment group benefited from the treatment. However, when comparing treatment group participants' changes to those of comparison group participants, there was no significant difference with the exception of impulsiveness (BIS total) scores.

Because there was change in the treatment group over time but such changes were not significantly different when compared to the comparison group, a Friedman test was run on the comparison group for each of the factors (BIS-11, COPE Factors 1,2, and 3) as a parallel analysis to Hypothesis 1. This was done in order to determine whether this group changed over time. The results of this analysis indicated that the comparison group did not change significantly during the treatment period on any of the four factors. Thus, the lack of a difference between the treatment and comparison groups was not due to a parallel change occurring in the comparison group.

Implications of Findings

Based on the above results, it appears likely that the Coping Skills treatment was associated with improved coping and lowered impulsiveness between the beginning and end of treatment. When comparing the treatment group to the comparison group, results suggest that the changes among those in the treatment condition were not significantly greater than those not receiving the treatment. However, when analyzed individually, the

changes demonstrated by those in the treatment group over time were significant whereas the changes among those in the comparison group were not. As a result, it is likely that the treatment condition impacted the treatment group in the expected directions, though the degree of change was modest. It is also likely that the lack of difference between the two groups reflected a factor such as the relatively small sample size.

Current Research as Compared to Applicable Past Research

Six studies relevant to the current research were outlined in the literature review above (Cahill-Masching & Ray, 2003; Evershed et al., 2003; Trupin et al., 2002; Farman & Nee, 2005; McCann et al., 2000; Nee & Farman, 2005). Of those six studies, the goals and study design of two were most similar to the current study. Specifically, in their study of female inmates in a British prison, Nee and Farman (2005) collected data from inmates undergoing DBT treatment at three prison facilities across four time points (baseline, midpoint, end of treatment and 6 months posttreatment). Nee and Farman sought to measure the effectiveness of DBT treatment on suicidal ideation and overall quality of life. Using five measures, the authors found notable effect sizes related to impulsivity, locus of control, emotion regulation, and the BPD diagnosis which were in the predicted directions toward improvement. They also reported that suicidal ideation had lowered by the end of treatment and had risen by the 6-month follow-up, but at a rate below measured baseline rates.

Similar to the current study, Nee and Farman (2005) focused their research on a forensic population and the impact of a DBT treatment adapted for such a population. Though the constructs measured differ from the current study, Nee and Farman (2005) reported notable improvements on levels of impulsivity as well as locus of control and

emotion regulation, which are related to coping abilities measured in the current study (Rational Coping, Emotion Focused Coping).

In the second relevant study, Evershed et al. (2003) measured the progress of 8 male patients in a high-security hospital forensic setting as they underwent an 18-month DBT treatment. The authors also followed the progress of a comparison group not receiving DBT treatment over the same time period. They focused their study specifically on measurements of anger and violence, and they collected data at four time points (baseline, midpoint, posttreatment, and at 6 months posttreatment). They utilized three questionnaires related to anger and violence to measure patients' progress, and results from these measures were used to rate both the seriousness and frequency of violent behaviors. The authors reported that the treatment group demonstrated decreases in the seriousness of various forms of behavior related to anger and hostility, although one of the measures used did not result in significant outcomes (the Novaco Anger Scale). The seriousness of such behaviors declined more in the treatment group than in a group that did not receive any DBT treatment. Evershed et al. found that demonstrated improvements lessened by posttreatment but increased again by the six-month follow up.

As with the above study by Nee and Farman (2005), both the Evershed et al. (2003) study and the current study focused on a DBT treatment adapted for use with a forensic population. Unlike the Nee and Farman study, both the Evershed et al. and current study compared a group receiving the DBT-based treatment to a non-treatment comparison group over a period of time. Though Evershed et al. focused their measurements on anger and violence, the decreases they measured related to hostile behaviors may also have some relation to an improvement in effective ways of coping

with anger. Because no significant reduction in the frequency of such behaviors was found in their study, it is difficult to speculate whether improvements in the level of impulsiveness may have been found in their population of study.

The four remaining studies discussed in the literature review were related to the current study because they examined the impact of DBT treatment on a forensic population in some way. However, Trupin et al.'s (2002) study was only partially related to the current research because the constructs measured were less defined than those in the current study and did not overlap those which were the focus of the current study. Trupin et al.'s study also focused on the impact of DBT treatment with female juveniles in a forensic facility. The authors measured behavioral difficulties in general by compiling and reviewing intervention records maintained by staff members. They specifically focused on three subpopulations: general population receiving DBT treatment, a mental health population receiving DBT treatment, and general population receiving treatment as usual. A decrease in several behavioral problems was identified (including aggression, disruption, and suicidal acts). However, results of this study were not compelling because the authors also reported that many of the same changes were found among those in the comparison group receiving treatment as usual. There was also a lack of significant positive effects among those from the general population group participating in DBT treatment. By the end of the study it was observed that the DBT treatment implemented in the general and mental health populations was not equivalent. The authors stated that this issue likely significantly skewed the outcome results of their study.

Of the remaining three studies outlined in the literature review of this paper, two (Cahill-Masching & Ray, 2003; Farman & Nee, 2005) were qualitative in nature and focused primarily on the experiences of staff members and treatment providers as they implemented the DBT treatment with their respective populations. Thus, these studies did not relate directly to the goals and outcomes of the current study. Finally, the study by McCann et al. (2000) was essentially a program development in which researchers, staff, and patients in the population to be treated reviewed the DBT manual. As a result, the authors were able to offer specific recommendations regarding how the treatment might be best adapted for use at such forensic facilities (as opposed to community and inpatient hospital settings for which DBT treatment is most specifically designed).

As above, the current study is similar to several others in the current body of research related to forensic populations in that the treatment under examination is a form of DBT that has been specifically adapted for such a population. Also, similar to a portion of the existing research, the data obtained for the current study were from both treatment and comparison groups over a period of time. Finally, the constructs which were the focus of study (impulsiveness and coping ability) were similar to others which have been measured by other authors in the sense that they were directly linked to the diagnosis the DBT treatment was designed to address (BPD) as well as other behaviors and experiences which are pertinent to a forensic setting (e.g., impulsivity, locus of control, emotion regulation, and BPD as in the Nee and Farman (2005) study; violence and hostility as in the Evershed et al. (2003) study). Additionally, many of the findings of the current study were significant and suggest that the DBT treatment does have a positive effect on the treatment group in the areas of focus, as were results reported in

several other studies noted in the current body of research. However, as with most prior studies, in the current study there was a lack of information about continued progress at follow-up time points.

Strengths and Limitations of the Current Research

There were several strengths to this study. First, the treatment groups under examination were facilitated by the same two clinicians who were highly trained and experienced in offering Coping Skills groups in the prison setting. The clinicians made a substantial effort to offer treatments that were as consistent and identical across groups as possible. These factors greatly increased the likelihood that treatment was reliable across groups and over time. Second, adaptations made to the standard DBT program were partially based on consultation with researchers and clinicians who had received their training from Marsha Linehan, the originator of DBT. Third, the collection of data at three time points allowed me to compare data at both midpoint and the end of the treatment period to a baseline. The availability of data from a comparison group enabled me to compare the results and specific trends of the treatment group to a nontreatment group as well. Finally, the use of measures of two distinct constructs (impulsiveness and coping ability) based both on research and consultation with clinicians treating the sample under examination meant that the measured constructs were directly relevant to this population and intervention.

There were also several limitations to the study. First, the lack of a foundation of research on and use of DBT or similar protocols with female inmates meant that the treatment protocol was not standardized and may not have been comparable to that used in other research. Second, though data were collected at posttreatment for many inmates,

the lack of data at this time point for all groups did not permit full analyses including this information. These data would likely have provided more useful information regarding sustained changes over time.

Finally, the prison setting itself brought about three further limitations, such as issues concerning integrity of data, treatment resources, and attrition. Specifically, it was impossible to obtain a comparison group of participants who had not undergone any amount of the treatment because the treatment is being offered to so many inmates at this point, as noted above. Further, due to a lack of available qualified staff, weekly psychoeducational DBT groups were offered in the absence of the standard weekly individual DBT treatment sessions. These limitations alone may have significantly limited the positive treatment effects measured in this study. Inmate turnover and attrition were also exceptionally high due to the nature of this population. This factor does not actually present a significant limitation when offering the treatment itself (because it is standard practice to offer DBT groups as “open” groups, or groups that are continually accepting new members throughout the treatment). However, for the purposes of data collection, the changes in participation often made it difficult to track the progress of individuals and to collect complete data sets from all participants. In addition, given that the population under examination is one that is under surveillance and that tends to be less conventional, less educated, and more antisocial as compared with a community population, it is possible that the data collected were less accurate than they may have been if collected from a community or other population. More specifically, inmates may be less accurate when selecting responses on measures due to less familiarity with such forms. They may also have a higher tendency to respond at random due to increased

antisocial traits overrepresented in the prison population. Finally, they may have attempted to respond to measures in what they believe to be a desirable fashion (despite assurances of confidentiality) due to a fear that genuine responses may affect their incarceration somehow. The latter possibility is also noteworthy when considering the high face validity of both measures used in this study.

Directions for Future Research

Though the purpose of the current study was to examine the impact of DBT adapted for the correctional setting, to date no standardized adaptations of DBT for use in correctional or forensic settings exist. In the current study and other existing research, adaptations often differ significantly regarding basic components (e.g., the inclusion of individual DBT treatment along with group psychoeducation). To better examine whether positive changes are due to DBT principles rather than other variables, it would be ideal to first standardize an adapted DBT treatment for future studies. Longitudinal data related to the effectiveness of DBT in any setting are lacking, and data should be collected posttreatment to measure the sustainability of gains made during treatment. Future researchers focusing on coping ability should likely utilize measures other than the COPE, which lacks clinical scores for a female prison population and has factors that are still in development.

Procedurally, in an effort to account for the setting and characteristics of participants, instructions on filling in questionnaires completely and accurately should be given both verbally and in writing to assist participants. This change would aid participants with lower education levels and those unfamiliar with the expectations regarding completion of questionnaires. Data should also be collected individually rather

than in a group setting, if possible. This format is recommended in order to increase concentration for those who may find it challenging to complete questionnaires, as well as to decrease group analysis related to specific questions on forms and the comparison of answers, all of which could influence the results in an unpredictable direction. Finally, to better circumvent attrition, data collection should be divided between minimum and medium facilities and distributed among several researchers so that participants missing on data collection days could be found and asked to complete questionnaires.

Conclusion

Implementing mental health treatment in correctional settings is challenging for many reasons. However, the need for rehabilitation in a system in which recidivism is significant and prison populations are ever increasing is justified. Though research on the impact of DBT in such settings is in its infancy, such research, including the current study, suggests that DBT may be effective when utilized in correctional and forensic settings. Continued work toward developing standardized versions of DBT for both use within these settings and further study is imperative. Hopefully, such program development and research will also serve as an argument for continued effective rehabilitation to be employed in correctional and forensic settings where it is sorely warranted.

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Appendix A

Statement of Informed Consent

Pacific University School of Professional Psychology

Title: Impulsivity and Coping Skills of Female Inmates in Dialectical Behavior Therapy.

Principal Investigator: Gretchen C. Lemmon, B.A. (503) 352-2436

Faculty Advisor: Genevieve Arnaut, Ph.D., Psy.D. (503) 352-2613

Location: Oregon Department of Corrections Coffee Creek Correctional Facility

Date: February 2005

You are invited to participate in a research study. This study will look at the effect of Dialectical Behavior Therapy (DBT) on attitudes and behaviors related to well-being and decision-making. This information may help design effective treatment programs that help people to make better decisions. It may also help people in the programs to better control and understand their emotions. This study is being done by Gretchen Lemmon, B.A., of the Pacific University School of Professional Psychology. It is supervised by Genevieve Arnaut, Ph.D., Psy.D., Jana Russell, Paul Bellatty, Ph.D., and Arthur Tolan, M.D. We want everybody in the study to understand what it is about. Please read this form and ask any questions you have before agreeing to take part in the study.

What You Will Be Asked to Do

We are asking people who are now in a DBT group to take part in this study. If you decide to take part, we will ask you to fill out two brief surveys now. These surveys will ask you questions about how well you deal with problems and how you make decisions. We will also ask you to provide some information about yourself, such as age and length of time in the DBT program. However, we will not be using your name or other identifying information in any of the research. If you participate you will not be considered a client, employee or representative of Pacific University.

Risks and What Will Be Done to Reduce the Risks

We will be asking you questions about attitudes, choices, and solving problems. There is always a chance that someone who is not supposed to see this information will see it. We take the following steps to make sure your information is kept confidential.

- 1) All information you give us on surveys for this study will be kept confidential. It will even be kept confidential from employees of the Department of Corrections who do not work on the research.

- 2) We will remove all names from the information that we get (except for this consent form). You will be assigned an ID number.
- 3) Your information will be combined with other people's information. It will only be recorded as numbers, such as totals and averages.
- 4) Everyone who works with your information has been trained to work with private information. Your privacy is very important to us.

It is not likely you will be hurt doing this study. If you are hurt in this study and it is not the fault of the people or organizations doing the study, you should not expect the organizations and people doing the study to pay for medical care or to pay you damages.

Benefits to You for Your Participation

There are also benefits to you taking part in this study.

- 1) You may learn about yourself and enjoy filling out the questionnaires exploring your thoughts and attitudes.
- 2) Your participation will help us to understand the effect of treatment on attitude. Attitude is very important in maintaining recovery. Taking part in this research will help us design good treatment programs. This may help others learn better decision-making and problem solving skills.

Your Right to Withdraw

Your participation is completely voluntary. You will not be penalized or lose benefits if you decide not to participate. If you do withdraw we would like to use surveys you have filled out already. If you have questions about this research, you can call or send a kyte to Jana Russell, Jolie Krechman, or Adam Furchner at Counseling and Treatment Services. If you are not satisfied with the answers you receive, you can also contact Karl Citek, Ph.D., O.D., Chair of the Institutional Review Board at Pacific University. You can call him at (503) 352-2126.

If you sign below, it shows that you: 1) are age 18 or older, 2) read and understood this form, 3) agree to take part, and 4) know that you can decide not to participate if you wish.

Printed Name

Date

Signature

Appendix B

Demographic Questionnaire

Please answer the following nine questions as honestly as you can. This information will not be used to identify you. It will only be used to describe the overall group of women who participated in this study.

1. Age: ____

2. Race or Ethnicity (mark all that apply): ____ White/Caucasian

____ Black/African-American

____ Asian-American or Pacific Islander

____ Hispanic/Latina

____ American Indian or Alaskan Native

____ Other; please

specify _____

3. Highest level of education completed (mark one): ____ grade school; last grade completed ____

____ high school diploma/GED

____ some college; number years completed ____

____ college degree; degree earned _____

4. Marital status (mark any that apply): ____ single and never married

____ divorced or legally separated

____ widowed

____ married or in a long-term, exclusive relationship

5. How long is your prison sentence (in years and months, like: "2 years 3 months")?

6. How long have you been in prison now (This sentence only, in years and months)?

7. Is this the first time you have been in prison (mark one)? ___yes ___no

8. How long have you been participating in this DBT group (in months and/or weeks)? _____

9. How much do you feel DBT has helped you so far (mark one)?: ___1 (not at all)

___2 (a little)

___3 (somewhat)

___4 (very much)

___5 (extremely)

Appendix C

Barratt Impulsiveness Survey (BIS-11)

	rarely/ never	occasionally	often	almost always/always
1. I plan tasks carefully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I do things without thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I am happy-go-lucky	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I have “racing” thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I plan trips well ahead of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am self-controlled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I concentrate easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I save regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I find it hard to sit still for long periods of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I am a careful thinker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I plan for job security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I say things without thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I like to think about complex problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I change jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I act “on impulse”	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I get easily bored when solving thought problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I have regular medical/dental check ups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I act on the spur of the moment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I am a steady thinker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I change where I live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I buy things on impulse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I finish what I start	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I walk and move fast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I solve problems trial-and-error	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I spend or charge more than I earn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I talk fast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I have outside thoughts when thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I am more interested in the present than the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I am restless at lectures or talks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I plan for the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix D

COPE Questionnaire (COPE)

What do you generally do and feel when you experience stressful events? Different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Circle ONE number for each item.

	I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot
1. I take additional action to try to get rid of the problem.	1	2	3	4
2. I concentrate my efforts on doing something about it.	1	2	3	4
3. I do what has to be done, one step at a time.	1	2	3	4
4. I take direct action to get around the problem.	1	2	3	4
5. I try to come up with a strategy about what to do.	1	2	3	4
6. I make a plan of action.	1	2	3	4
7. I think hard about what steps to take.	1	2	3	4
8. I think about how I might best handle the problem.	1	2	3	4
9. I put aside other activities in order to concentrate on this.	1	2	3	4
10. I focus on dealing with this problem, and if necessary let other things slide a little.	1	2	3	4
11. I keep myself from getting distracted by other thoughts or activities.	1	2	3	4
12. I try hard to prevent other things from interfering with my efforts at dealing with this.	1	2	3	4
13. I force myself to wait for the right time to do something.	1	2	3	4
14. I hold off doing anything about it until the situation permits.	1	2	3	4
15. I make sure not to make matters worse by acting too soon.	1	2	3	4
16. I restrain myself from doing anything too quickly.	1	2	3	4

	I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot
17. I ask people who have had similar experiences what they did.	1	2	3	4
18. I try to get advice from someone about what to do.	1	2	3	4
19. I talk to someone to find out more about the situation.	1	2	3	4
20. I talk to someone who could do something concrete about the problem.	1	2	3	4
21. I talk to someone about how I feel.	1	2	3	4
22. I try to get emotional support from friends or relatives.	1	2	3	4
23. I discuss my feelings with someone.	1	2	3	4
24. I get sympathy and understanding from someone.	1	2	3	4
25. I look for something good in what is happening.	1	2	3	4
26. I try to see it in a different light, to make it seem more positive.	1	2	3	4
27. I learn something from the experience.	1	2	3	4
28. I try to grow as a person as a result of the experience.	1	2	3	4
29. I learn to live with it.	1	2	3	4
30. I accept that this has happened and that it can't be changed.	1	2	3	4
31. I get used to the idea that it happened.	1	2	3	4
32. I accept the reality of the fact that it happened.	1	2	3	4
33. I seek God's help.	1	2	3	4
34. I put my trust in God.	1	2	3	4
35. I try to find comfort in my religion.	1	2	3	4
36. I pray more than usual.	1	2	3	4

	I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot
37. I get upset and let my emotions out.	1	2	3	4
38. I let my emotions out.	1	2	3	4
39. I feel a lot of emotional distress and I find myself expressing those feelings a lot.	1	2	3	4
40. I get upset, and am really aware of it.	1	2	3	4
41. I refuse to believe that it has happened.	1	2	3	4
42. I pretend that it hasn't really happened.	1	2	3	4
43. I act as though it hasn't even happened.	1	2	3	4
44. I say to myself, "this isn't real."	1	2	3	4
45. I give up the attempt to get what I want.	1	2	3	4
46. I just give up trying to reach my goal.	1	2	3	4
47. I admit to myself that I can't deal with it, and quit trying.	1	2	3	4
48. I reduce the amount of effort I'm putting into solving the problem.	1	2	3	4
49. I turn to work or other substitute activities to take my mind off things.	1	2	3	4
50. I go to movies or watch T.V. to think about it less.	1	2	3	4
51. I daydream about things other than this.	1	2	3	4
52. I sleep more than usual.	1	2	3	4
53. I drink alcohol or take drugs in order to think about t less.	1	2	3	4