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Functions and correlates of deliberate self-harm among adjudicated male adolescents

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FUNCTIONS AND CORRELATES OF DELIBERATE SELF-HARM AMONG
ADJUDICATED MALE ADOLESCENTS

by

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Bachelor of Arts
Grinnell College
1999

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University of Nevada, Las Vegas
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ABSTRACT

Functions and Correlates of Deliberate Self-Harm Among Adjudicated Male Adolescents

by

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Deliberate self-harm (DSH) is self-inflicted physical injury without suicidal intent. Recent studies indicated that more adolescent males engage in DSH than previously identified. Research demonstrated that DSH is common in forensic settings and highly correlated with several mental health disorders. This study included 103 adjudicated male adolescents assessed for DSH and mental health concerns. Twenty-two participants with DSH history and 21 controls were interviewed about coping skills, mental health problems, and DSH functions. Results indicated that 66%, especially African American and Hispanic participants, reported DSH history. Participants with DSH history reported more aggression, emotional lability, alienation/boredom, and internalizing disorders but had poorer social adaptation. The DSH group reported greater use of healthy and unhealthy coping skills. DSH was used to regulate affect, self-punish, and manage dissociation.

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CHAPTER 1

INTRODUCTION

Deliberate self-harm (DSH), which involves inflicting intentional physical damage to one's self without suicidal intentions, is a manifestation of psychological pain and distress so severe that individuals who engage in DSH believe their emotional pain is too great for words to express or relieve (Alderman, 1997; Allen, 1995; Arnold & Magill, 1996; Briere & Gil, 1998; Conterio & Lader, 1998; Derouin & Bravender, 2004; Favazza, 1998; Feldman, 1988; Gratz, 2001; Herpertz, 1995; MacAniff-Zila & Kiselica, 2001; Schwartz, Cohen, Hoffman, & Meeks, 1989; Solomon & Farrand, 1996). Although DSH provides temporary relief from psychological pain, overall and lasting effects include feelings of guilt, shame, and secrecy.

Deliberate self-harm produces several negative consequences. When other people discover that an individual engages in DSH, they tend to react with shock, denial, sadness, guilt, anger, and frustration (Alderman, 1997). Instead of providing support for the individual who self-harms, many people may withdraw from this person, exacerbating feelings of loneliness and abandonment (Alderman, 1997; Conterio & Lader, 1998). The chronic nature of DSH is especially problematic because individuals may engage in DSH intermittently over the course of their lifetimes (Alderman, 1997). Severe DSH can also cause disfiguring scars that individuals may later regret (Alderman, 1997; Conterio & Lader, 1998; Poustle & Neville, 2004). Deep cuts and other severe injuries may require medical treatment, which can be costly for both the individual and the medical system (Conterio & Lader, 1998; Nelson & Grunebaum, 1971). Individuals

who engage in DSH often require repeated psychiatric hospitalizations in addition to significant medical care (Favazza & Conterio, 1988; Ivanoff, Linehan, & Brown, 2001; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). Deliberate self-harm is not considered a suicide attempt, but can be life-threatening if the injury is too severe and left untreated (Alderman, 1997; Arnold & Magill, 1996; Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Dulit, Fyer, Leon, Brodsky & Frances, 1994; MacAniff-Zila & Kiselica, 2001; Simeon & Hollander, 2001; Solomon & Farrand, 1996).

Most studies on DSH focused on females as DSH appeared more frequent and severe in this population. Recent studies, however, indicated that DSH is more common among males than previously reported (Croyle & Waltz, 2007; Gratz, Conrad, & Roemer, 2002; Heath, Toste, Nedecheva, & Charlebois, 2008; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008; Muehlenkamp & Gutierrez, 2004). Researchers found that males in correctional and inpatient facilities, in particular, have higher prevalence rates of DSH than in the general population (Belknap & Holsinger, 2006; Matsumoto, Yamaguchi, Asami, Okada, Yoshikawa, & Hirayasu, 2005; Shea, 1993). More research on males, especially in correctional facilities, might help mental health professionals to better understand DSH in this population.

One reason why DSH may have been neglected in delinquent male populations relates to the association between DSH and other mental health disorders. The most common mental health disorders associated with DSH include mood disorders, anxiety disorders, eating disorders, and substance abuse (Alderman, 1997; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Dulit et al., 1994; Favazza, 1992; Garrison, Addy, McKeown, Cuffe, Jackson, & Waller, 1993; Klonsky, Oltmanns, & Turkheimer, 2003;

Klonsky & Olino, 2008; MacAniff-Zila & Kiselica, 2001; Osuch, Noll, & Putnam, 1999; Poustle & Neville, 2004; Suyemoto, 1998; White Kress, 2003). DSH is often associated with internalizing mental health disorders and much of the research on delinquent males has been on externalizing disorders. Mental health professionals working with delinquent males may forget to assess for DSH because past focus has been on externalizing disorders and their associated problems (Alderman, 1997; Conterio & Lader, 1998).

Deliberate self-harm appears to serve different functions in all populations. The most frequently cited functions of DSH are relief from tension or anxiety/affect management, self-punishment, relief from dissociation, management of interpersonal problems, avoiding suicidal impulses, and managing sexual urges or fantasies (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Derouin & Bravender, 2004; Favazza, 1989; 1992; 1998; Gratz, 2003; Hawton, 1989; Himber, 1994; MacAniff-Zila & Kiselica, 2001; Shearer, 1994; Simeon, Stanley, Frances, Mann, Winchel, & Stanley, 1992). One prevalent theory combining several of these functions is that DSH is an unhealthy coping skill used to avoid uncomfortable emotional experiences (Chapman, Gratz, & Brown, 2006).

Researchers proposed that individuals who self-harm have difficulty regulating their emotions when aroused and act impulsively to avoid feelings of distress (Briere & Gil, 1998; Chapman, Gratz, & Brown, 2006; Claes et al., 2007; Evans, Hawton, & Rodham, 2005; Gratz et al., 2002; Gratz & Roemer, 2004; Haines & Williams, 1997; Haines, Williams, & Brian, 1995; Heath et al., 2008; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Mendes, 2008; Walsh & Rosen, 1988). This theory is especially relevant to male

delinquents as poor coping skills and impulsivity may be linked to decisions and behaviors that led to their adjudication (Haines & Williams, 1997).

The purpose of the current study was to explore DSH and associated mental health concerns among adjudicated male adolescents. Better understanding of the frequency and types of DSH as well as commonly associated mental health concerns may help clinicians to identify and assess DSH in this population. Investigation of the coping skills of males who engaged in DSH and functions of DSH may thus aid in treatment of DSH for an adjudicated population. The current study also contributes to the growing research on similarities and differences in DSH between males and females and in forensic and non-forensic settings.

CHAPTER 2

LITERATURE REVIEW

Definitions and Descriptors of Deliberate Self-Harm

Definitions of Deliberate Self-Harm

Deliberate self-harm (DSH) and its related terms have many definitions (see Table 1). Originally, DSH was defined by damage self-inflicted on the body (Conn & Lion, 1983; Phillips & Muzaffer, 1961). Psychologists later identified DSH not only by damage rendered to the body but also by an individual's intentions when committing the damaging actions (Arnold & Magill, 1996; Favazza, 1998; Feldman, 1988; Herpertz, 1995; Pattison & Kahan, 1983; Simeon & Hollander, 2001). In particular, injuries inflicted with suicidal intentions were excluded from definitions of DSH in the United States. However, in other countries, such as England, DSH includes both suicidal and nonsuicidal behaviors (Welch, 2001). Other definitions not only excluded suicidal intentions but also excluded cognitive impairment (Suyemoto, 1998). More recently, definitions of DSH were expanded to include functions of DSH as well as the extent of physical damage incurred (Conterio & Lader, 1998; Huband & Tantam, 1999). One such function is expression of emotional pain and self-punishment. Other researchers defined DSH by the extent of physical damage caused by the act of DSH (Gratz, 2001).

Overall, definitions of DSH suggest that its main components are intentional, self-inflicted, physical harm without suicidal intention but with the goal to cause damage and possibly express or relieve emotional pain. Thus, DSH appears to serve as a coping skill, albeit an unhealthy and dangerous one. For example, individuals who self-harm often feel

isolated from their friends and family due to the shame and secrecy of DSH (Alderman, 1997; Conterio & Lader, 1998). Additionally, if an individual engages in severe DSH and does not seek medical treatment, he or she may die as a result of the injuries (Alderman, 1997; Conterio & Lader, 1998).

An important aspect of this definition is a lack of suicidal intention because mental health and medical professionals often mistake DSH for suicide attempt. Many researchers agree that DSH is a separate phenomenon from suicide attempts (Arnold & Magill, 1996; Cavanaugh, 2002; Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Dulit et al., 1994; Graff & Mallin, 1967; Kwawer, 1980; MacAniff-Zila & Kiselica, 2001; Simeon & Hollander, 2001; Solomon & Farrand, 1996; Walsh & Rosen, 1988; Welch, 2001; Yip, 2005). DSH differs from suicide attempts in a number of ways. First, the motivations for DSH and suicide attempts are completely different. Individuals who attempt suicide usually are hopeless that their life will improve and want to end their life (White Kress, 2003). The goal of DSH, conversely, is to cope with stress and to communicate pain to others. Individuals who engage in DSH report that they have hope, but do not know any other way to cope with their emotional pain (Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Graff & Mallin, 1967; MacAniff-Zila & Kiselica, 2001; Solomon & Farrand, 1996; Walsh & Rosen, 1988; White Kress, 2003; Yip, 2005). Second, suicide attempts usually elicit sympathy, whereas DSH tends to lead to hostility and disgust (MacAniff-Zila, & Kiselica, 2001). Another goal of a suicide attempt is cessation of consciousness, whereas the goal of DSH is alteration of consciousness (White Kress, 2003). Finally, DSH is low in lethality, unlike many suicide attempts (MacAniff-Zila, & Kiselica, 2001; White Kress, 2003).

Descriptors of Deliberate Self-Harm

DSH includes a variety of self-harming behaviors. Cutting, which is probably the best known type of DSH, is indeed the most common self-harming behavior (Briere & Gil, 1998; Favazza & Conterio, 1989; Favazza, DeRosear, & Conterio, 1989; Osuch et al., 1999; Ross & Heath, 2002). Cutting also appears to be associated with previous experience of traumatic events and higher levels of dissociation than other behaviors such as burning (Matsumoto et al., 2005). Other DSH behaviors include abrading, biting, burning, hair pulling, hitting or bruising, inserting objects under the skin or into the body, interfering with wound healing, nail biting to the point of bleeding, pouring acid or rubbing a toxic agent on the skin, scratching, and slapping (Alderman, 1997; Briere & Gil, 1998; Connors, 1996a; Conterio & Lader, 1998; de Young, 1982; Favazza, 1999; MacAniff-Zila & Kiselica, 2001; Osuch et al., 1999; Poustle & Neville, 2004; Ross & Heath, 2002; Walsh & Rosen, 1988). More severe DSH behaviors include attempts at cutting off body parts (e.g., eye, penis, fingers) and breaking bones intentionally (Alderman, 1997; Conterio & Lader, 1998; Favazza, 1999; Osuch et al., 1999; Walsh & Rosen, 1988).

Various estimates exist of the frequency of DSH behaviors. Favazza and Conterio (1989) examined a sample of 240 participants who engaged in DSH, 75% of which reportedly engaged in multiple methods of DSH. The most commonly reported DSH behavior was skin-cutting (72%). Other commonly reported types of DSH included skin-burning (35%), self-hitting (30%), interfering with wound healing (22%), severe skin scratching (22%), hair pulling (10%) and bone breaking (8%). The sample used in this study, however, was nonrandom and may not accurately represent all individuals who

engage in DSH. Participants in this study were a nonrandom sample of viewers of a popular talk show, who wrote letters to the authors. The researchers surveyed the letter-writers about frequency of DSH behaviors, but did not strive for a random, representative sample of individuals who engaged in DSH.

Some researchers consider other types of behaviors to be DSH. These behaviors include reckless behavior such as unprotected sex, unsafe driving, substance abuse, attempted overdose without explicit suicidal intent, and tattooing, piercing, or other culturally sanctioned alterations of the body (Connors, 1996a; Sansome, Wiederman, & Sansome, 1998). These behaviors, however, are generally not considered DSH for many reasons. Individuals who abuse substances, engage in reckless behavior, or alter their body in a culturally sanctioned way usually do not do so with the conscious intent to hurt themselves, which is part of many definitions of DSH (Conn & Lion, 1983; Conterio & Lader, 1998; Gratz, 2001; Herpertz, 1995; Huband, & Tantam, 1999; Pattison & Kahan, 1983). Additionally, the effects of substance abuse or reckless behavior are not immediately apparent, as opposed to DSH where the individual can see damage to his or her body. Finally, attempted overdose without explicit suicidal intent may be a passive attempt at suicide, which is specifically excluded by many researchers' definitions of DSH (Arnold & Magill, 1996; Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Dulit et al., 1994; Graff & Mallin, 1967; Kwawer, 1980; MacAniff-Zila & Kiselica, 2001; Simeon & Hollander, 2001; Solomon & Farrand, 1996; Walsh & Rosen, 1988).

Other Terms for Deliberate Self-Harm

Other popular terms for DSH include:

- self-mutilation (Aldridge, 1988; Connors, 1996a; Crabtree, 1967; Darche, 1990; Derouin & Bravender, 2004; Favazza, 1989; Feldman, 1988; Gardner & Gardner, 1975; Kafka, 1969; MacAniff-Zila & Kiselica, 2001; Menninger, 1935; Podvall, 1969; Raine, 1982; Ross & McKay, 1979; Roy, 1978)
- self-harm (Derouin & Bravender, 2004; Miller, 1996)
- self-injury (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000; de Young, 1982; Favaro & Santonastaso, 1998; Herpertz, 1995; Huband & Tantam, 1999; Simeon & Hollander, 2001; Tantam & Whittaker, 1992)
- self-inflicted violence (Alderman, 1997; Connors, 1996a)

Terms less commonly used for deliberate self-harm behavior include autoaggression, partial suicide, and antisuicide (Derouin & Bravender, 2004; Simeon & Hollander, 2001). These terms imply a relationship, which does not necessarily exist, between deliberate self-harm and either suicide or aggression.

Some other terms, such as self-destructive behavior and self-abuse, include deliberate self-harm but also encompass a larger spectrum of impulsive behaviors (Connors, 1996a; MacAniff-Zila & Kiselica, 2001). These other behaviors consist of substance abuse, unsafe sexual activity, or other risk-taking behaviors such as reckless driving. Although these behaviors can occur with deliberate self-harm and may lead to physical harm when

repeated over time, these behaviors are not generally considered deliberate self-harm for the aforementioned reasons.

Other terms, such as delicate self-cutting and wrist-cutting syndrome, only describe one particular type of deliberate self-harm and do not include other types of self-harm such as burning or self-hitting (Derouin & Bravender, 2004; Doctors, 1981; Hawton, 1989; Himber, 1994; MacAniff-Zila & Kiselica, 2001; Novotny, 1972; Pao, 1969; Rosenthal, Rinzler, Walsh, & Klausner, 1972; Simeon & Hollander, 2001). Deliberate self-harm is also included under the term parasuicidal behavior (Connors, 1996a; Linehan et al., 1991; Tantam & Whittaker, 1992; Welsh, 2005). Parasuicide, however, includes any self-injurious behavior with or without suicidal intent (Linehan et al., 1991; Welsh, 2005). Parasuicidal behavior seems to occur mostly in people with borderline personality disorder, whereas others who engage in deliberate self-harm without suicidal intent may or may not meet criteria for borderline personality disorder (Conterio & Lader, 1998; Linehan et al., 1991).

Classification

Within DSH, behaviors may be subcategorized based on motivation for DSH and comorbid diagnoses. Menninger (1935) first subcategorized DSH behavior into religious, psychotic, and neurotic types. Religious DSH includes behaviors motivated by spiritual reasons or to prove devotion to God. Self-flagellation is in this category. Psychotic DSH consists of behaviors in response to hallucinations or delusions. Severely damaging DSH, such as eye enucleation, occurs most often in this category. Neurotic DSH includes behavior related to guilt or self-punishment. Menninger attributed neurotic DSH to guilt over masturbation, homosexuality, or other sexual feelings. Although this classification

system provided a good launching point for research on various types of DSH, the only Menninger category of DSH commonly used today is psychotic DSH, which refers to individuals with schizophrenia.

Favazza (1999) divided DSH behavior into three main categories. The first category, called major self-mutilation, consists of severe self-harming behaviors usually occurring with psychosis, such as breaking bones or removal of body parts. This category coincides with Menninger's classification of psychotic DSH. The second category, stereotypical self-mutilation, includes DSH by individuals with mental retardation or organic brain damage. These behaviors, such as head-banging or self-hitting, may be a form of self-stimulation for the individual or a means of communication (White Kress, 2003). The last category, minor self-mutilation, includes more common DSH behaviors such as skin cutting or burning. Favazza (1999) further classifies minor self-mutilation into two subtypes. Compulsive behavior is any DSH that is repetitive and ritualistic, such as trichotillomania. Impulsive or episodic behavior is DSH that occurs occasionally. Examples of this type of DSH include skin cutting and burning, interference with wound healing, breaking of bones, self-punching, and needle sticking. This form of DSH provides rapid relief from distressing thoughts and emotions. Impulsive DSH may occur only a few times or may recur many times.

The focus of this paper will be DSH of the episodic category. Psychotic or major DSH will be excluded because these behaviors appear to solely occur from hallucinations or delusions and may be best treated with antipsychotic medication. This paper will not address stereotypical DSH as this type appears in individuals with mental retardation or

other organic brain damage. Individuals with these mental health issues are not appropriate for the treatment methods used in this study.

Characteristics of Deliberate Self-Harm

Prevalence of Deliberate Self-Harm

DSH is not a discrete diagnosis in the Diagnostic and Statistical Manual-IV (DSM-IV), so prevalence estimates are not readily available. Prevalence estimates of DSH are often inexact because studies tend to be either overly inclusive by grouping DSH under suicide attempts, or overly exclusive by assessing only for a specific type of DSH, usually wrist-cutting (Walsh & Rosen, 1988; Welsh, 2001). Additionally, DSH is often subsumed under the diagnosis of borderline personality disorder (Greenspan & Samuel, 1989).

Many different prevalence estimates exist, depending on the population assessed and how DSH is defined. Estimates in the general population range from 1-4% (Klonsky et al., 2003; White Kress, 2003). Among the general population, Suyemoto (1998) reported that prevalence estimates of DSH range from 0.8-1.8% in the United States. Alderman (1997) estimated that 1.8 million adolescents and adults engage in DSH in the United States every year. Conterio and Lader (1998) estimated that 1.4% of the population engaged in some form of DSH at least once in their lifetime. Another study on the occurrence of DSH among college students revealed that 2.8% of college students reported at least one incident of DSH in their lives (Gratz et al., 2002). Briere and Gil (1998) found the prevalence of single episode DSH in the general population to be 4% and the prevalence of repeated DSH to be 0.3%.

Among inpatient populations, the prevalence rate of DSH is higher. Darche (1990) estimated the prevalence of DSH to be 4.3% among psychiatric inpatients. White Kress (2003) reported the prevalence of DSH in psychiatric patients to be 4-21%. Zlotnick and colleagues (1996) estimated that DSH occurs in 7-10% of inpatient populations. Briere and Gil (1998) estimated that 21% of inpatients may engage in DSH at least once and that 8% reported DSH on a regular basis.

Prevalence rates of DSH are even higher among adolescents. One study on the occurrence of DSH among 6,020 15-and 16-year-olds in England indicated that 6.9% reported at least one act of DSH (Hawton, Rodham, Evans, & Weatherall, 2002). Another study of 440 students in grades 7-11 showed that 13.9% reported at least one incident of DSH (Ross & Heath, 2002). Findings suggest that adolescents and young adults report higher prevalence rates of DSH than adults (Arnold & Magill, 1996; Conterio & Lader, 1998; Raine, 1982; Suyemoto, 1998).

DSH also appears to be more common in certain populations, especially prison populations and other groups in confinement (Alderman, 1997; Matsumoto et al., 2005; Osuch et al., 1999). DSH rates in incarcerated populations range from 6.5-25% for adult male prisoners (Shea, 1993) to 14.7-46% among male juvenile delinquents (Belknap & Holsinger, 2006; Matsumoto et al., 2005) and 54% among female delinquents (Belknap & Holsinger, 2006). Prevalence rates vary widely depending on how DSH is defined and if researchers assessed for DSH during incarceration only versus lifetime history (Walsh & Rosen, 1988; Welsh, 2001).

Gender and Ethnic Differences in Prevalence of Deliberate Self-Harm

A frequent finding on prevalence rates of DSH is that more females than males engage in DSH (Arnold & Magill, 1996; Conn & Lion, 1983; Conterio & Lader, 1998; Doctors, 1981; Favazza, 1999; Favazza et al., 1989; Feldman, 1988; Graff & Mallin, 1967; Hawton et al., 2002; Huband & Tantam, 1999; Jacobson, Muehlenkamp, Miller, & Turner, 2008; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004; Phillips & Muzaffer, 1961; Raine, 1982; Rosenthal et al., 1972; Suyemoto, 1998). The ratio of females to males who report at least one incident of DSH ranges from 3:1 to 5:1 (Darche, 1990; Simpson, 1975). Hawton and colleagues (2002) reported that 11.2% of females reported an incident of DSH compared to 3.2% of males. Ross and Heath (2002) found, of 13.9% of youths who reportedly engaged in at least one act of DSH, that 64% were female. Laye-Gindhu and Schonert-Reichl (2005) found DSH prevalence among a community sample of adolescent females was 16.9% compared with 8.5% of males.

Other studies, however, contradict these findings. Conterio and Lader (1998) argued that prevalence rates of DSH among males and females may not reflect actual occurrence among males for many reasons. First, females may be more likely to seek treatment for DSH and are thus more likely to report incidents of DSH to receive treatment (Alderman, 1997; Conterio & Lader, 1998). Second, males may be more likely to deny emotional problems, including DSH (Conterio & Lader, 1998). Third, males may only self-harm when they abuse substances, so DSH becomes subsumed under the general mental health issue of substance abuse (Conterio & Lader, 1998). Conterio and Lader (1998) also indicated that DSH is more common in males when males are incarcerated and do not have access to substances or other ways to express their emotional pain.

Some findings from research on DSH support these arguments. For example, DSH among college students has been found to be unrelated to gender (Croyle & Waltz, 2007; Gratz et al., 2002; Heath et al., 2008). Other studies showed no significant gender difference in DSH prevalence among high school or middle school students (Hilt et al., 2008; Muehlenkamp & Gutierrez, 2004). In community samples of men and women, rates of DSH were similar among men and women (Briere & Gil, 1998; Klonsky, Oltmanns, & Turkheimer, 2003).

One explanation for these recent findings is that researchers are using more community samples instead of inpatient samples. With community samples, researchers have broadened their definition of DSH to include subclinical levels of DSH resulting in capturing more DSH among males (Croyle & Waltz, 2007). Another reason for these recent findings is that fewer studies include overdose, primarily found in females, as a type of self-harm (Heath et al., 2008). Overdoses have been excluded primarily because these actions are commonly associated with suicidal intent and do not necessarily cause immediate physical harm. Both of these aspects violate the generally held definition of DSH. Finally, recent studies encompassed self-harming behavior that men are more likely to do, such as burning or punching a wall or other hard object (Claes et al., 2007; Taylor, 2003). Previous research focused on cutting, which appears more frequently among female (Klonsky & Muehlenkamp, 2007).

Researchers questioned if factors influencing DSH in males differ from those affecting females (Gratz & Chapman, 2007). For example, while childhood sexual abuse seems to predict to DSH among women, it was not associated with increased risk for DSH among undergraduate college men (Gratz & Chapman, 2007). Instead, poor

emotional regulation (i.e., the ability to identify and accept negative emotions and manages these emotions in effective ways) and history of childhood physical abuse appear to be better predictors of DSH among males (Gratz & Chapman, 2007). Laye-Ginhu and Schonert-Reichl (2005) surveyed male and female high school students for motivations for and functions of DSH. Males were more likely to report using self-harm for communication while females were more likely to use self-harm to self-punish and out of depression and loneliness.

Another study, however, contradicted these findings. In this study of adolescent psychiatric patients, there were few differences between males and females in why they engaged in DSH (Kumar, Pepe, & Steer, 2004). The only moderately significant difference was that among females, DSH was moderately correlated with affect regulation. This relationship was not found among males (Kumar et al., 2004). These conflicting findings illustrate the need for more research on correlates and functions of DSH among males.

With respect to ethnicity, DSH is more prevalent among European Americans than other ethnic groups (Conterio & Lader, 1998; Favazza & Conterio, 1989; Ross & Heath, 2002). However, no other ethnic differences were noted in previous research. Additionally, previous research has not addressed why DSH is more common among European Americans than among other ethnic groups.

Course of Deliberate Self-Harm

DSH usually first occurs during adolescence (Conterio & Lader, 1998; Crowe & Bunclark, 2000; Favazza, 1992; 1999; Pao, 1969; Pattison & Kahan, 1983; Rosenthal et al., 1972; Simeon et al., 1992; Tantam & Whittaker, 1992; van der Kolk et al., 1991;

White Kress, 2003). Conterio and Lader (1998) proposed that DSH begins during adolescence because of multiple significant life changes that occur during this developmental period. Adolescents experience significant changes in their social lives, tend to separate from their parents, mature physically, and develop sexual feelings and their own identities. Adolescents may engage in DSH once or only a few times and then never self-harm again (Hawton, 1989; White Kress, 2003). In more chronic cases, DSH begins in adolescence, escalates when individuals are in their twenties, and decreases or disappears when individuals reach their thirties (Alderman, 1997).

Prognosis

Due to the chronic nature of DSH and its resistance to treatment, the prognosis for DSH is relatively poor (Alderman, 1997; Conterio & Lader, 1998). Individuals who engage in DSH usually are very secretive about their self-harming behavior and hesitant to seek treatment. Therefore, an individual may delay therapy for DSH for years. Also, the high association between DSH and borderline personality disorder, another mental health issue with poor prognosis, may contribute to the difficulty in treating DSH. However, early intervention can greatly improve prognosis (Conterio & Lader, 1998).

Disorders Comorbid with Deliberate Self-Harm

DSH commonly occurs with mental health disorders and other mental health issues. Although DSH is not classified as a DSM-IV disorder, it is listed as a symptom of other disorders such as borderline personality disorder. However, an individual may engage in DSH and not meet criteria for these disorders. Also, DSH can occur in the presence of other psychological disorders and may be related to the underlying pathology of these

disorders. Following is a description of psychological disorders or other mental health problems that commonly occur in individuals who engage in DSH.

DSH may be present in individuals with schizophrenia (Favazza, 1989; 1992; 1998; 1999; Himber, 1994; Menninger, 1935; Nelson & Grunebaum, 1971; Phillips & Muzaffer, 1961; van Moffaert, 1989; White Kress, 2003). Severe DSH, such as amputation of a limb or eye enucleation, is most common among psychotic individuals. However, psychotic individuals who engage in DSH comprise a very small percentage of individuals who engage in DSH (van Moffaert, 1990). Instead, DSH appears predominantly among individuals with other types of psychological disorders.

DSH also frequently occurs in individuals with mental retardation or other pervasive developmental disorders (Conterio & Lader, 1998; Favazza, 1992). Among psychiatric patients with mental retardation, approximately 21% of these individuals engage in some form of DSH (White Kress, 2003). The most common forms of DSH in this population are head-banging, self-hitting, lip and hand chewing, self-biting, and hair-pulling (Favazza, 1998; 1999; White Kress, 2003). Treatment of DSH in this population coincides with treatments for mental retardation. These treatments include behavioral therapy such as counterconditioning, desensitization, and time out, or psychopharmacological therapy such as tranquilizers, mood stabilizers, and selective serotonin reuptake inhibitors (Favazza, 1998; 1999). Treatment for DSH among individuals with mental retardation is specific to this population and does not seem to be effective in individuals without mental retardation.

One of the most common psychological disorders diagnosed among individuals who self-harm is borderline personality disorder (BPD) (Bennum & Phil, 1983; Briere & Gil,

1998; Chapman, Specht, & Cellucci, 2005; Cavanaugh, 2002; Connors, 1996a; Conterio & Lader, 1998; Favazza, 1998; Feldman, 1988; Greenspan & Samuel, 1989; Osuch et al., 1999; Suyemoto, 1998; van der Kolk, Perry, & Herman, 1991; White Kress, 2003).

About 75% of individuals with BPD engage in DSH (Bauserman, 1998). DSH occurs more frequently in individuals with BPD than in those with major depressive disorder or schizophrenia (Burgess, 1990). In one study that compared the number of BPD features in psychiatric patients who either engaged in DSH or did not, total scores on a measure of BPD were significantly higher among those who engaged in DSH than among those who did not (Schaffer, Carroll, & Abramowitz, 1982). Among female psychiatric patients with BPD, 47.6% of those reported a lifetime history of DSH (Chapman et al., 2007). Thus, DSH and BPD appear together frequently.

One hypothesis as to why DSH and BPD commonly occur together is that both psychological issues share similar risk factors. For example, Brodsky, Cloitre, and Dulit (1995) examined the relationships among DSH, dissociation, and childhood abuse in females diagnosed with BPD. Participants were divided into no reported DSH, infrequent DSH, and frequent DSH groups. Participants who frequently engaged in DSH reported significantly greater levels of dissociation than participants who never engaged in DSH. Therefore, high levels of dissociation may be associated with both BPD and DSH.

Part of the reason for the large co-occurrence between BPD and DSH is that self-harm is one criterion for diagnosing BPD (DSM-IV, 1994). In fact, when an individual reports that he or she engages in DSH, many mental health professionals may assume that DSH is part of a much larger spectrum of BPD behaviors and diagnose that individual with BPD without considering other possible diagnoses (Osuch et al., 1999). However,

not everyone who deliberately self-harms meets the entire the criteria for BPD, so many individuals who engage in DSH may be misdiagnosed (Crowe & Bunclark, 2000; Klonsky et al., 2003).

Although DSH is not a criterion for other personality disorders, it can occur in individuals with dependent, paranoid, narcissistic, or histrionic personality disorders (Conterio & Lader, 1998; Favazza, 1998; Klonsky et al., 2003; Osuch et al., 1999; van Moffaert, 1990; White Kress, 2003). Precipitating emotions to DSH among individuals with personality disorders include depression, anxiety, guilt, feelings of unworthiness, feelings of uncleanliness, sexual arousal, or sadomasochistic feelings (Burgess, 1990). No study has yet examined treatment of DSH specifically among individuals with these other personality disorders.

Affective disorders, such as major depressive or bipolar disorder, are also common to individuals who engage in DSH (Conterio & Lader, 1998; Dulit et al., 1994; Garrison et al., 1993; Klonsky et al., 2003; Klonsky & Olino, 2008; Pao, 1969; Pattison & Kahan, 1983; Raine, 1982; Rosenthal et al., 1972; Simpson, 1975; Suyemoto, 1998; White Kress, 2003). For example, Darce (1990) found that affective disorders were more common among inpatient adolescents who engaged in DSH than those who did not. Although DSH is more frequently associated with BPD than with major depressive disorder, affective disorders do commonly appear in individuals who self-harm (Burgess, 1990). Klonsky and Olino (2008) found that frequency and severity of DSH increases with greater levels of depression, anxiety, and BPD.

Even though DSH is not a form of attempted suicide, suicidality may occur in individuals who engage in DSH (Arnold & Magill, 1996; Briere & Gil, 1998; Conterio &

Lader, 1998; Dulit et al., 1994; Muehlenkamp & Gutierrez, 2007; Pao, 1969; Pattison & Kahan, 1983; Roy, 1978; Simpson & Porter, 1981; van der Kolk et al., 1991; White Kress, 2003). Suicidality and DSH, though separate mental health issues, may co-occur in individuals who are depressed (Conterio & Lader, 1998; Garrison et al., 1993). Research suggested that individuals who frequently engaged in DSH were more likely to be diagnosed with depression and to report chronic suicidality than individuals who rarely engaged in DSH (Dulit et al., 1994; Muehlenkamp & Gutierrez, 2007). Despite a possible relationship between DSH and suicidality through depression, DSH should not be treated as suicidality (Conterio & Lader, 1998).

Anxiety disorders are also common among individuals who self-harm (Conterio & Lader, 1998; Dulit et al., 1994; Garrison et al., 1993; Klonsky et al., 2003; Klonsky & Olino, 2008; Osuch et al., 1999; Suyemoto, 1998; White Kress, 2003). For example, one study that compared various diagnoses of inpatient adolescents indicated that anxiety disorders were more common in patients who engaged in DSH than in those who did not (Darche, 1990). However, even individuals who self-harm and who do not meet criteria for an anxiety disorder report high levels of anxiety (Ross & Heath, 2003). Individuals who engage in DSH with high levels of anxiety are more likely to be younger. Also, they are more likely to self-harm to influence interpersonal relationships and change their emotional state (Klonsky & Olino, 2008).

Among anxiety disorders, DSH is highly comorbid with posttraumatic stress disorder (PTSD) (Alderman, 1997; Conn & Lion, 1983; Conterio & Lader, 1998; Favazza, 1998; Osuch et al., 1999). Childhood sexual abuse, one type of trauma that can lead to PTSD, is the most frequent risk factor for DSH (Arnold & Magill, 1996; Baiker & Arnold, 1997;

Briere & Gil, 1998; Connors, 1996a; Conterio & Lader, 1998; Crowe & Bunclark, 2000
Derouin & Bravender, 2004; Favazza, 1992; 1999; Gratz et al., 2002; Hawton, 1989;
Ivanoff et al., 2001; Leinbenluft, Gardner, & Cowdry, 1987; Shearer, 1994; Simpson &
Porter, 1981; van der Kolk et al., 1991; Walsh & Rosen, 1988; Zlotnick et al., 1996).
Severe childhood sexual trauma appears to be frequently linked with two other mental
health issues comorbid with DSH: dissociative identity disorder and sexual problems
(i.e., promiscuity, sexual inhibition) (Briere & Gil, 1998; Conterio & Lader, 1998;
Favazza, 1998; Hawton, 1989; Raine, 1982; Simpson, 1977; White Kress, 2003). Thus,
childhood sexual trauma might be a common factor between DSH and other trauma-
related disorders.

Eating disorders are another type of disorder comorbid with DSH (Alderman, 1997;
Conn & Lion, 1983; Conterio & Lader, 1998; Dulit et al., 1994; Favazza, 1992; 1998;
Hawton, 1989; Herpertz, 1995; MacAniff-Zila & Kiselica, 2001; Osuch et al., 1999; Pao,
1969; Raine, 1982; Rosenthal et al., 1972; Simpson, 1975; White Kress, 2003). One
study with a sample of participants who engaged in DSH indicated that 50% of
participants currently had or previously had an eating disorder (Favazza et al., 1989).
Among psychiatric inpatients, individuals who engage in DSH frequently are more likely
to be diagnosed with an eating disorder than are those who rarely or never engage in DSH
(Darche, 1990; Dulit et al., 1994).

DSH occurs with similar frequency in individuals with either bulimia nervosa or
anorexia nervosa. Favaro and Santonastaso (1998; 1999) reported that bulimia is one of
the more frequent comorbid diagnoses among individuals who self-harm, with 75% of
participants with bulimia reporting that they engaged in some form of DSH. Favaro and

Santonastaso (2000) also reported that 62% of patients with anorexia engaged in DSH. Additionally, DSH is more common in individuals with bingeing/purging type anorexia than individuals with restricting type anorexia (Favaro & Santonastaso, 2000). DSH and eating disorders both appear to serve as a coping mechanism for stress (Conterio & Lader, 1998; Favaro & Santonastaso, 2000). Underlying commonalities for the two behaviors include poor body image, need for control, and impulsiveness (Conterio & Lader, 1998; Favaro & Santonastaso, 2000).

Another disorder that frequently appears in individuals who self-harm is substance abuse (Alderman, 1997; Crowe & Bunclark, 2000; Favazza, 1992; Graff & Mallin, 1967; Hawton, 1989; MacAniff-Zila & Kiselica, 2001; Novotny, 1972; Osuch et al., 1999; Poustle & Neville, 2004; Raine, 1982; Shearer, 1994; Simpson & Porter, 1981; Simpson, 1975; White Kress, 2003). Similar to eating disorders, substance abuse may be related to high levels of impulsivity (Shearer, 1994). DSH and substance abuse also share addictive qualities, though substance abuse is more physically addictive (Alderman, 1997; Crowe & Bunclark, 2000).

Risk Factors and Correlates of Deliberate Self-Harm

Many researchers have explored what events, personality characteristics, or biological predispositions place individuals at risk for engaging in DSH (Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conterio & Lader, 1998; Derouin & Bravender, 2004; Dulit et al., 1994; Favazza, 1999; Gratz et al., 2002; Hawton, 1989; Leinbenluft et al., 1987; Simpson, 1975; Simpson & Porter, 1981; van der Kolk et al., 1991; Walsh & Rosen, 1988; Zlotnick et al., 1996). These findings, which are detailed

below, indicate that risk factors include many different life events such as childhood abuse, family disruptions, and adult trauma. Additionally, individual characteristics such as impulsivity, low self-esteem, poor interpersonal relationship skills, aggression, and poor body-image may serve as risk factors for DSH.

Familial Characteristics of Adolescents who Engage in Deliberate Self-Harm

Studies on risk factors suggest that family characteristics may contribute to the development of DSH (Conterio & Lader, 1998; Derouin & Bravender, 2004; Leinbenluft et al., 1987; Walsh & Rosen, 1988). In particular, any family situation in which children are forced to take on adult responsibilities prematurely and inappropriately may place the children at risk for later DSH. For example, if parents have significant parenting deficits, possibly due to mental illness or substance abuse problems, children are forced to care for themselves and other siblings at an early age (Connors, 1996a; Conterio & Lader, 1998). Additionally, similar situations arise if the parent(s) are not present in a child's life due to divorce or imprisonment, or if parents are physically unable to care for a child because of their own illness or physical disability (Conterio & Lader, 1998). These children experience very stressful situations and lack the opportunities to learn healthy coping skills for relieving stress. Instead, they may rely on unhealthy coping skills such as DSH.

Another familial risk factor for the development of DSH is a lack of healthy communication and emotional warmth in the home (Arnold & Magill, 1996; Baiker & Arnold, 1997; Derouin & Bravender, 2004; Hawton, 1989; Poustle & Neville, 2004). Pawlicki and Gaumer (1993) proposed that DSH develops in individuals who grew up without empathic, intimate relationships with their caregivers. Individuals from these families may not successfully communicate their feelings or feel genuinely understood by

their caregivers. This lack of empathic relationships leads to anxiety, which may then lead to dissociation and impede communication skills. Thus, these individuals use DSH to try to communicate their emotions to others.

Other familial characteristics can also help lead to DSH. These characteristics include the presence of traumatic losses, such as the death of a parent or sibling, and domestic violence in the family (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a; Conterio & Lader, 1998; Derouin & Bravender, 2004; Leinbenluft et al., 1987; Walsh & Rosen, 1988). Also, children who grew up in families where parents enforced rigid, dogmatic religious beliefs or held the child to very high standards may be at risk for the development of DSH (Arnold & Magill, 1996; Connors, 1996a; Conterio & Lader, 1998). In summary, families in which children do not learn healthy communication or coping skills may predispose children to utilizing DSH as an unhealthy coping skill later in life.

Environmental Risk Factors

One of the most frequently reported environmental risk factors of DSH is childhood abuse, in particular sexual abuse. For example, among a sample of female victims of parental incest, de Young (1982) found that 57.7% engaged in DSH during adolescence. Zweig-Frank, Paris, and Guzder (1994) examined the relationship between childhood sexual abuse, physical abuse, and dissociation among females with personality disorders who either did or did not engage in DSH and found that the frequency of childhood sexual abuse was significantly greater among females who engaged in DSH.

Other factors may also increase the likelihood of DSH, such as severity of sexual abuse, combined sexual and physical abuse, physical abuse alone, and emotional abuse. More intrusive, prolonged, and violent childhood sexual abuse has been found to be more

likely to lead to DSH (Romans, Martin, Anderson, Herbison, Mullen, & Phil, 1995). Favazza and Conterio (1989) found, among individuals who engaged in DSH, that 29% reported both physical and sexual abuse, 17% reported only sexual abuse, and 16% reported only physical abuse. Other findings suggest that physical abuse alone may be a risk factor for DSH, but the relationship between physical abuse and DSH does not seem strong (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a; Derouin & Bravender, 2004; Favazza, 1992; Gratz et al., 2002; Gratz, 2003; Hawton, 1989; Leinbenluft et al., 1987; MacAniff-Zila & Kiselica, 2001; Miller, 1996; Simpson & Porter, 1981; van der Kolk et al., 1991; Walsh & Rosen, 1988). In addition, emotional abuse and both physical and emotional neglect may be risk factors for DSH (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a; Gratz et al., 2002; van der Kolk et al., 1991). However, emotional neglect appears to be a greater risk factor than physical neglect and a greater contributor to DSH among women than men (Gratz, 2003).

Childhood sexual abuse may be more of a risk factor for females than males. Gratz and colleagues (2002) examined risk factors for DSH among college students. They found that 38% of students reported a history of DSH, and that risk factors differed among men and women. Among women, the most significant risk factors were childhood sexual abuse, insecure paternal attachment, maternal emotional neglect, and paternal emotional neglect. Sexual abuse was not a significant risk factor among men. Instead, the most significant risk factor among men was childhood separation from parents.

In summary, research findings indicate that childhood maltreatment, in particular childhood sexual abuse, is a strong risk factor for DSH. This may be so because sexually abused children undergo distressing feelings of shame, guilt, and self-loathing and may

lack healthy coping skills for managing these emotions (Baiker & Arnold, 1997; Conterio & Lader, 1998). Children in abusive families may have grown up in homes where it was unsafe to express negative emotions (Conterio & Lader, 1998; Yip, 2005). Instead, they developed unhealthy coping skills such as DSH to relieve anxiety and emotional pain (Baiker & Arnold, 1997; Conterio & Lader, 1998; Walsh & Rosen, 1988). Although researchers have proposed how childhood abuse leads to DSH, the exact pathway needs greater clarification (Baiker & Arnold, 1997; Conterio & Lader, 1998; Walsh & Rosen, 1988; Yip, 2005).

Environmental events other than abuse are also associated with DSH. DSH has been linked with family disruption during childhood, such as the absence of a parent from a child's life due to divorce or separation (Simpson, 1975; 1977). Even when both biological parents are present, if a child fails to form secure attachments to parental figures, then he or she may be at greater risk for DSH (Gratz et al., 2002; Gratz, 2003; Simpson & Porter, 1981). Insecure parental attachment combined with childhood abuse appears to increase the risk for development of DSH (Gratz, 2003). Difficulties in socializing, such as rejection by peers or being bullied, can also contribute to the likelihood of DSH (Arnold & Magill, 1996; Walsh & Rosen, 1988). Finally, chronic childhood physical illness is related to DSH as well (Arnold & Magill, 1996; Connors, 1996a; Walsh & Rosen, 1988). In addition to negatively affecting the development of interpersonal relationships, chronic physical illness during childhood can lead to depression and dissociation, which are mental health problems that have also been found to be risk factors for DSH (Derouin & Bravender, 2004; Graff & Mallin, 1967; Gratz et al., 2002). In summary, DSH has been associated with multiple types of traumatic events

during childhood.

Although childhood trauma seems most closely linked to DSH during adolescence or adulthood, environmental events occurring during adulthood can also lead to DSH. The most frequently reported adulthood risk factor is sexual trauma such as rape or sexually abusive experiences (Arnold & Magill, 1996; Baiker & Arnold, 1997). Other adulthood risk factors include fear and shame about sexuality, which may extend from sexual trauma, and domestic violence (Arnold & Magill, 1996; Baiker & Arnold, 1997). DSH is commonly associated with the death of child or partner as well as infertility (Arnold & Magill, 1996). Less frequent adulthood risk factors include relationship difficulties and general problems such as racial harassment and oppression (Arnold & Magill, 1996).

Individual Correlates with Deliberate Self-Harm

Specific individual characteristics are correlated with DSH, but the direction of the relationship between these characteristics and DSH is unknown. These characteristics may contribute to the increased likelihood of DSH, or DSH and its accompanying pathology may accentuate the characteristics. Several studies indicate that individuals who engage in DSH also display high occurrence of other impulsive behaviors such as disordered eating behavior or substance use (Conterio & Lader, 1998; Connors, 1996a; Dulit et al., 1994; Favazza, 1989; Pattison & Kahan, 1983; Schwartz et al., 1989; Simeon & Hollander, 2001; Walsh & Rosen, 1988; Zlotnick et al., 1996; Zweig-Frank et al., 1994). One study of psychiatric patients with personality disorders revealed that patients who engaged in DSH reported significantly higher levels of impulsivity, irritability, autoaggressiveness, and anger than patients who did not engage in DSH. The findings suggested that patients who engaged in DSH also engaged in multiple types of impulsive

behavior such as substance abuse, bingeing, and promiscuity (Herpertz, Sass, & Favazza, 1997). This study indicates that DSH may be associated with impulse control difficulties.

DSH has also been associated with poor emotional regulation (Briere & Gil, 1998; Claes et al., 2007; Gratz et al., 2002; Gratz & Roemer, 2004; Haines, Williams, & Brian, 1995; Heath, Toste, Nedecheva, & Charlebois, 2008). Emotional regulation can be defined as awareness and understanding of emotions as well as the ability to act in healthy ways when experiencing negative emotions (Gratz & Roemer, 2004). These findings were replicated with several different populations including college students, psychiatric adult inpatients, nonclinical adults, and male prisoners (Claes et al., 2007; Gratz & Roemer, 2004; Gratz & Chapman, 2007; Haines et al., 1995; Heath et al., 2008). Among male and female college students, Heath and colleagues (2008) found that college students who reported DSH also acknowledged significantly more difficulties in emotional regulation compared with control group. In a study on environmental and individual correlates of DSH among male college students, emotional dysregulation was the best predictor of DSH frequency and only individual correlate to distinguish men who self-harm from those that do not (Gratz & Chapman, 2007). Claes and Vandereycken (2006) reported that in a psychiatric inpatient sample, individuals who self-harmed reported less control of internalized and externalized anger than did their counterparts.

Chapman, Gratz, and Brown (2006) proposed that emotional dysregulation relates to DSH through experiential avoidance. When individuals with poor emotional regulation experience a situation which elicits a strong emotional response, they try to avoid thoughts, feelings, somatic sensations, or other emotional experiences that are uncomfortable. Deliberate self-harm provides relief from direct experience of

uncomfortable emotions by avoiding emotional arousal or decreasing intensity of emotional arousal. The relationship between DSH and uncomfortable emotional experiences is maintained by negative reinforcement in that individuals avoid discomfort of emotions by engaging in DSH.

Another individual factor associated with DSH is poor coping skills (Chapman et al., 2006; Evans, Hawton, & Rodham, 2005; Haines & Williams, 1997; Laye-Gindhu & Schonert-Reichl, 2005; Lion & Conn, 1982; Nock & Berry Mendes, 2008; Ross & McKay, 1979; Walsh & Rosen, 1988). Research supports a relationship between poor coping skills and engagement in DSH. Evans and colleagues (2005) found that compared to their counterparts, adolescents who self-harmed were less likely to ask for help when they needed it and had fewer people to talk with about thoughts about hurting themselves. When faced with problems, adolescents who engaged in DSH were more likely to use ineffective coping skills such as stay in their room, have an alcoholic drink, or get angry than use healthy coping skills such as talk to another person about their problems or try to “sort things out” (Evan et al., 2005). Among adolescents who self-harmed, females were more likely to ask for help for their problems and more likely to receive help after an episode of DSH. Thus, males who self-harm may use fewer healthy coping skills than their female counterparts.

One theory about the relationship between poor coping skills and DSH is that individuals who self-harm have ineffective problem-solving abilities and resort to unhealthy coping skills, such as DSH, to solve their problems (Nock & Berry Mendes, 2008; Klonsky & Muehlenkamp, 2005; Salkovskis, Atha, & Storer, 1990). Nock and Mendes (2008) tested the relationship between problem-solving and DSH by measuring

differences in social problem-solving abilities among adolescents who self-harm and a control group. The researchers provided participants with various social problem scenarios then rated how well participants assessed these situations and generated solutions for situations. Raters judged the quality of each solution and solution chosen by each participant. Participants rated their self-efficacy on how well they would implement a healthy solution to each scenario. The findings indicated that while adolescents who self-harmed did not differ from the control group in how well they assessed social problem scenarios or how many solutions they produced, the DSH group chose more negative solutions and rated themselves as less effective in implementing adaptive solutions. The results suggest that problem-solving deficits among adolescents who self-harm are not with assessment of social problems or generation of solutions, but in choosing the most appropriate behavior and confidence in implementing the behavior.

Chapman and colleagues (2006) use the experiential avoidance model of DSH in describing how DSH serves as an unhealthy coping skill to avoid uncomfortable emotional experiences. In this model, individuals engage in DSH to avoid or escape from negative emotions (Chapman et al., 2006). Individuals may utilize avoidance behaviors such as DSH because they failed to develop more skillful responses (i.e., healthy coping skills) to stressful situations or because emotional arousal caused by stress impedes them from implementing healthier coping skills (Chapman et al., 2006).

Some researchers question if individuals who engage in DSH have significantly poorer coping skills. Haines and Williams (1997) compared coping skills of male prisoners who self-harm with those who do not and a non-prisoner control group. They found that although prisoners who self-harmed reported fewer positive, cognitive coping

skills and greater problem avoidance, there were no significant differences between the two prisoner groups on most types of coping skills. These coping skills included availability of social support, use of social support, spiritual/philosophical coping resources, and use of social withdrawal. The authors concluded that compared to controls, individuals who engage in DSH did not show severe deficits in coping skills or problem-solving ability. These results, however, suggest that although the number of coping skills may be similar among those who do and do not self-harm, the quality and effectiveness of coping skills may be worse among individuals that self-harm.

The aforementioned individual correlates of high impulsivity, emotion dysregulation, and poor coping skills may also contribute to another prominent characteristic among individuals who self-harm, poor interpersonal skills (Claes et al., 2007; Conterio & Lader, 1998; Graff & Mallin, 1967; Klonsky et al., 2003). This pattern may be more common among female that self-harm, but more research on males who self-harm needs to be conducted to support these findings (Claes et al., 2007). Individuals who engage in DSH tend to gravitate toward unhealthy relationships that are characterized by poor interpersonal boundaries, distrust, secrecy, and manipulation (Miller, 1996). Additionally, these individuals have a powerful need for love and acceptance (Conterio & Lader, 1998; Hawton, 1989). Often, individuals who engage in DSH lack the ability or will to care for themselves and overly rely on others to care for them (Conterio & Lader, 1998). Thus, they may use outlandish means, such as DSH, to ensure that they feel loved and to keep another person from ending a relationship (Conterio & Lader, 1998; Hawton, 1989). Despite the use of DSH to maintain a relationship, individuals who engage in DSH are also prone to excessive secrecy and inability to self-soothe when feeling negative

emotions, both of which can produce conflicts in relationships (Miller, 1996).

Conterio and Lader (1998) suggested that a biological fragility leads to predisposition to DSH and may be linked with these other characteristics. Specifically, individuals who engage in DSH may have a high predilection to emotional hypersensitivity, meaning that they feel emotions more intensely than others. Hypersensitivity could contribute to poor relationship skills in that a hypersensitive person may perceive minor conflict as termination of the relationship. Additionally, hypersensitivity may interact with other characteristics, such as poor impulse control, to increase the likelihood of development of DSH. This causal theory of a biological fragility for DSH is still under scrutiny and requires more thorough investigation.

Other individual characteristics associated with DSH are also linked to psychological disorders. For example, individuals who engage in DSH report high levels of rigid all-or-nothing thinking and fear of change, common in anxiety and mood disorders (Conterio & Lader, 1998; Graff & Mallin, 1967). An active dislike of one's body, low self-esteem, and alexithymia (i.e., the feeling that one has no words for one's mood) are common characteristics of individuals who engage in DSH and also occur in individuals with depression or eating disorders (Cavanaugh, 2002; Conterio & Lader, 1998; Hawton, 1989; Miller, 1996; Zlotnick et al., 1996). Studies on individuals who self-harm reveal high levels of aggression, a behavior frequently seen in impulse control disorders (Dulit et al., 1994; Graff & Mallin, 1967). These findings suggest that DSH may be a form of self-directed aggression, but more research is necessary to determine the relationship between DSH and aggression directed at other people.

Models and Functions of Deliberate Self-Harm

Although many theoretical models of DSH exist, one problem is that researchers disagree on the names and components of each model. Thus, several models overlap and differ only slightly. The models described below are categorized by general theoretical background from which the model was derived. However, model overlap across theoretical orientations is common.

Psychodynamic Models

Initial models of DSH were developed from classic psychodynamic theory as well as related theories such as object relations and self-psychology (Menninger, 1935). One prominent traditional psychodynamic model is the drive or antisuicidal model, which suggests that DSH is a reaction to depression due to unconscious conflicts between life and death drives, which results in DSH as a form of partial suicide (Alderman, 1997; Favazza, 1989; Leinbenluft et al., 1987; Novotny, 1972; Pawlicki & Gaumer, 1993; Suyemoto, 1998). According to psychodynamic theory, all people have competing desires to live (life drive) along with self-destructive impulses (death drive). The death drive explains why people knowingly engage in behaviors that are harmful to them, such as substance abuse. The life and death drive are in constant conflict. If the death drive prevails, a person engages in destructive behavior that may result in death.

Proponents of the drive model propose that individuals who engage in DSH struggle with the conflict between these two drives and experience depression (Alderman, 1997; Favazza, 1989; Leinbenluft et al., 1987; Novotny, 1972; Pawlicki & Gaumer, 1993; Suyemoto, 1998). To cope with depression, these individuals utilize DSH as a compromise between life and death. They hold the illusion that they control their fear of

death by engaging in a dangerous behavior such as DSH.

A variation on this model is that DSH provides sexual gratification while simultaneously punishing oneself for having a sex drive (Suyemoto, 1998). DSH serves as an attempt to turn passive drive, which is unconscious, into active drive, which is conscious, by taking control of penetration. Although this model is common among psychodynamic psychologists, little research supports it (Suyemoto, 1998).

Another psychodynamic model is the severity of psychopathology model. According to this model, DSH occurs only in highly disturbed and possibly psychotic individuals (Darche, 1990). These individuals tend to have personality disorders with sadomasochistic tendencies (Crabtree, 1967; Roy, 1978). They have high levels of hostility, introversion, and neuroticism that lead to self-directed anger, manifesting as depression, and then to DSH (Alderman, 1997; Crabtree, 1967; Roy, 1978).

Other psychodynamic models are based on object relations theory. Doctors (1981) suggested that individuals who later engage in DSH experienced empathic failures by their mothers during childhood. When these individuals were children, they tried to express their feelings but their parents disconfirmed these feelings. These individuals internalized the idea that their feelings were not valid and, instead, used DSH to communicate their feelings. Additionally, because they did not feel validated by their parents, these individuals believe that no one else will validate their feelings and thus become distrustful of other people.

The affect regulation model is another object relations model of DSH in which individuals who engage in DSH experience either actual abandonment or perceived abandonment by their parents during childhood (Suyemoto, 1998). Based on object

relations theory, healthy individuals form attachments to their caregivers during infancy and childhood. Caregivers that provide empathy and respond to the developmental needs of individuals are considered good or love objects (Doctors, 1981). Attachment to good objects helps individuals form good self-esteem and a stable sense of self. Individuals who experience physical abandonment or emotional abandonment, in which parents lack empathy and do not validate the wants and needs of their children, do not form healthy attachments. Later in life, these individuals lack the ability to achieve a stable sense of self, to believe that their emotions will be validated, or to self-soothe when feeling upset.

According to the affect regulation model, individuals who engage in DSH experience abandonment and fail to form attachment to good objects (Doctors, 1981; Suyemoto, 1998). Thus, they never develop a strong sense of self or the ability to self-soothe. As adolescents or adults, these negative experiences lead to feelings of substantial anger related to actual or perceived abandonment by others. They do not direct their anger at the abandoning object (i.e., parent) because they have low self-esteem and unconsciously believe they deserved to be abandoned. Instead, they direct their anger inwardly. DSH fulfills a need for punishment and protects others from the individuals' anger and rage. These individuals tend to have poor affect regulation and high rejection sensitivity due to early abandonment (Herpertz, 1995). DSH creates a sense of control over emotions by externalizing intolerable and overwhelming emotions (Herpertz, 1995; Suyemoto, 1998).

Similar to the affect regulation model, the boundaries model of DSH is also based on object relations theory and the pathological effects of perceived abandonment at a young age (Suyemoto, 1998). Object relations theorists hypothesize that healthy individuals learn to differentiate their own identity from those of their parents during adolescence.

Individuals who failed to form healthy attachments during infancy and childhood may be unable to separate their own identity from their parents during this developmental period. According to this model, individuals who engage in DSH did not develop secure attachments and were unable to adequately separate. Inability to separate from others also means that these individuals do not form stable boundaries between themselves and others. Without boundaries, perceived abandonment creates unbearable feelings of isolation. Because these individuals never learned to form an identity separate from others, they are intolerant of loneliness and isolation. Without other people, these individuals are unable to define themselves. DSH serves to remind these individuals of the physical boundaries between themselves and others: the skin. Thus, when these individuals feel isolated or abandoned, they use DSH to establish boundaries and form a separate sense of self.

Another popular psychodynamic model, based on the self-psychology theory of maintaining self or identity, is the dissociation model. According to this model, individuals dissociate before engaging in DSH (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conn & Lion, 1983; Connors, 1996a; Conterio & Lader, 1998; Derouin & Bravender, 2004; Favazza, 1989; 1992; 1998; Gratz, 2003; Pao, 1969; Shearer, 1994; Simeon et al., 1992). Blood from DSH demonstrates that the individual is alive and “real,” which then terminates the state of depersonalization (Rosenthal et al., 1972). This model is supported by findings that dissociation and DSH are commonly associated with PTSD, suggesting that DSH may be a coping skill for PTSD-related dissociation (Zlotnick et al., 1996). Dissociation can also result after the act

of DSH. In these situations, individuals use DSH to fulfill a desire to dissociate or to escape from uncomfortable emotions (Raine, 1982).

The dissociation model has received support in the literature. Rosenthal and colleagues (1972) interviewed male and female patients with a history of cutting behavior and found that patients often cut themselves while in a depersonalized state. Participants reported that the sight of blood usually brought on intense reactions. After cutting, participants were no longer in a depersonalized state and felt great relief.

Childhood Maltreatment Models

Several models of DSH were developed based on the high correlation between childhood maltreatment and DSH (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a; Suyemoto, 1998). The two major models are the environmental model and the maltreatment model. Both models suggest a relationship between childhood maltreatment and DSH but differ in how abuse leads to DSH.

In the environmental model, which is based on social learning theory, abused children take on adult responsibilities at an early age and never develop healthy coping skills (Baiker & Arnold, 1997; Suyemoto, 1998). In abusive or neglectful families, children experience overwhelming feelings of abandonment, rage, and frustration related to abuse. These children are unable to internalize sufficient love and caring to utilize healthy coping skills later in life. Thus, they never learn adaptive ways to self-soothe. Additionally, children from abusive families feel powerless and ineffective. They have difficulties learning how to distinguish between, and express different types of, distress and discomfort. Due to their inability to identify and label different emotions, children from abusive families may move from arousal to action without mediating steps of

feeling awareness, identification, expression, and self-soothing. For example, survivors of childhood maltreatment may feel shame related to a trigger from their abuse. Instead of labeling the emotion, identifying the source of their shame, and using words to express their feelings, these individuals seek immediate relief from their discomfort and use DSH as release from their negative emotions.

According to the maltreatment model, children who are physically or sexually abused by parents never learn that parents can be both good and bad at the same time (Baiker & Arnold, 1997). Instead, they view their parents as either all bad when abusive or all good when not abusive. Additionally, these children see themselves as either all good or all bad (i.e., all-or-nothing thinking). Affection and attention are associated with abuse, so abused children internalize the association between attention and caring with maltreatment. Feelings of self-loathing may lead to “shame-based survival skills,” that include DSH to cope with traumatic experiences.

Additionally, proponents of the maltreatment model believe that individuals who were abused as children use DSH to reenact previous abuse or replicate feelings from abusive situations (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996a). As childhood abuse is one of the strongest risk factors for engaging in DSH, DSH may be an attempt to recreate an abusive situation. Individuals who engage in DSH associate pain with caring, so DSH may become a way to experience care or to self-nurture (Alderman, 1997; Baiker & Arnold, 1997; Arnold & Magill, 1996; Connors, 1996a).

Related to the maltreatment model, researchers suggest that children who were sexually abused use DSH to punish themselves for having sexual feelings or confusion

about these feelings (Baiker & Arnold, 1997; Connors, 1996a; Favazza, 1998; MacAniff-Zila, & Kiselica, 2001; Nelson & Grunebaum, 1971; Pawlicki & Gaumer, 1993; Simeon et al., 1992; Simpson & Porter, 1981). DSH may also serve to make one's body unattractive to divert future sexual encounters or to punish one's self for being attractive (Arnold & Magill, 1996; Conterio & Lader, 1998). Walsh and Rosen (1988) proposed that sexually abused children have a distorted body image. They view their bodies as disgusting, dirty, or ugly, especially in cases of sexual abuse. As adolescents or adults, they may blame their bodies for causing the abuse and wish to punish themselves via DSH. Thus, childhood abuse affects various factors linked with DSH, such as poor development of coping skills or self-soothing, shame about sexual feelings, and poor body image.

Control Model

According to the control model, DSH is used to express control over one's body (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conterio & Lader, 1998; Favazza, 1989; 1998; Gratz, 2003; Schwartz et al., 1989; Shearer, 1994; Simeon et al., 1992). In this model, individuals who engage in DSH may feel that their lives are out of control and that the only aspect of their lives they can control is their bodies. They express control through DSH and making the choice to self-harm.

Proponents of the control model suggest that individual need for control stems from childhood maltreatment (Miller, 1996). Maltreated children, especially those who were sexually abused, often lack physical control over their bodies and cannot protect themselves from abuse. This perception of lack of control remains with these individuals

throughout their lives. They use DSH to demonstrate that they can choose to hurt themselves rather than allow other people, such as their abusers, to hurt them. DSH functions as an expression of control over physical and emotional pain related to childhood maltreatment.

Behavioral Models

Several models of DSH are based on behavioral theories. The operant conditioning model is one behavioral model that has received substantial attention and empirical support (Alderman, 1997; Darche, 1990; Derouin & Bravender, 2004; Favazza, 1989; 1992; 1999; Himber, 1994; Nock & Prinstein, 2004; Simeon et al., 1992). According to this model, DSH produces euphoric feelings that provide relief from tension (Alderman, 1997; Derouin & Bravender, 2004; Favazza, 1989; 1992; 1999; Himber, 1994; Simeon et al., 1992). Physical injury, such as DSH, triggers a release of endorphins. These endorphins create a pleasant sensation that is similar to a “high” from narcotics. When individuals engage in DSH, they experience these pleasant sensations and are more likely to self-harm in the future to reproduce those feelings (Alderman, 1997).

This model has often been applied to depressed individuals who engage in DSH to escape feelings of sadness or hopelessness (Darche, 1990; Favazza, 1998). DSH provides temporary feelings of euphoria, similar to alcohol or other substance use. Individuals with depression are likely to repeatedly engage in DSH to reexperience these pleasurable feelings.

Nock and Prinstein (2004) investigated various ways that DSH is reinforced among inpatient adolescents. The researchers assessed the functions of DSH as a method to reduce tension or other negative affective states (automatic-negative reinforcement), to

create a desirable physiological state including euphoric feelings (automatic-positive reinforcement), to escape from interpersonal task demands or to avoid punishment (social-negative reinforcement), or to gain attention from others (social-positive reinforcement). Adolescents reported that the most common reasons for engaging in DSH were related to either automatic-negative or automatic-positive reinforcement.

Additionally, participants who reported that DSH served as automatic-negative reinforcement also reported high levels of suicide attempts and hopelessness, whereas automatic positive reinforcement was associated with PTSD and depressive symptoms. These findings support both the operant conditioning and the anxiety-reduction models.

Other models, such as observational learning, are not as clearly developed and have not been thoroughly investigated. In the observational learning model, individuals learn to engage in DSH by observing other people doing so and by being rewarded for their behavior (Alderman, 1997). The model was based on findings from inpatient psychiatric units or prisons that one incident of DSH often sparks many more incidents. One limitation of this model is that many people who engage in DSH have never observed other people engage in DSH.

Anxiety Reduction/Affect Regulation Model

According to the anxiety reduction model (also called the affect regulation model), individuals engage in DSH to cope with stressful or painful emotions, especially anxiety, or to modulate affect (Alderman, 1997; Baiker & Arnold, 1997; Conterio & Lader, 1998; Crowe & Bunclark, 2000; de Young, 1982; Derouin & Bravender, 2004; Doctors, 1981; Favazza, 1989; 1992; 1998; Gratz, 2003; Hawton, 1989; Himber, 1994; Laye-Ginhu & Schonert-Reichl, 2005; MacAniff-Zila & Kiselica, 2001; Nelson & Grunebaum, 1971;

Pattison & Kahan, 1983; Roy, 1978; Schwartz et al., 1989; Shearer, 1994; Simeon et al., 1992; Yip, 2005). According to this model, individuals engage in DSH because they are unable to internally regulate their own anxiety, distress, or anger (Baiker & Arnold, 1997). Either an internal or external event leads to uncomfortable feelings such as loneliness, resentment, sexual desire, or anxiety, which produce tension (Grunebaum & Klerman, 1967). These individuals lack healthy coping skills for releasing tension and feel unable to verbalize their feelings (Alderman, 1997; Grunebaum & Klerman, 1967). The individual commits DSH to relieve tension and to provide a sense of calmness, but DSH also produces negative feelings of guilt, shame, and disgust with one's self. This model differs from the psychodynamic affect regulation model in that individuals do not need to be abandoned or perceive that they were abandoned to engage in DSH (Suyemato, 1998). In this version of affect regulation, DSH serves a negative automatic-reinforcement function, similar to behavioral models (Nock & Prinstein, 2004).

A variation on this model is that feelings of anxiety or tensions lead to dissociation before the individual engages in DSH (Alderman, 1997; Baiker & Arnold, 1997; Briere & Gil, 1998; Grunebaum & Klerman, 1967; Ivanoff et al., 2001; MacAniff-Zila & Kiselica, 2001; Ross & Heath, 2003; Podvall, 1969; Simeon & Hollander, 2001; Simpson, 1975; Suyemoto, 1998; van Moffaert, 1990; Yip, 2005). The anxiety and tension from either internal or external stimuli become so unbearable that a person resorts to depersonalization (Simpson, 1975). DSH is an attempt to avoid uncomfortable feelings and to break dissociation through the physical sensations from DSH (Baiker & Arnold, 1997; Grunebaum & Klerman, 1967; Simpson, 1975).

The source of the tension or anxiety varies in the anxiety reduction model. The most commonly reported precipitating factors are perceived loss of meaningful persons or an impasse in a personal relationship (Hawton, 1989; Simpson, 1977). Other experiences that can lead to anxiety include alienation from or discomfort with one's body, social isolation and disconnectedness, intense physiological arousal, or the perception that one's interpersonal boundaries have been violated (Connors, 1996a; Simpson, 1975). In some cases, DSH has a ritualistic quality and may be used to reduce anxiety from obsessive thoughts (Allen, 1995; Connors, 1996; Hawton, 1989). DSH may serve as a compulsive act to stop racing thoughts or to relieve anxiety from obsessive thoughts (Gratz, 2003). In these instances, the cause of anxiety is obsessive thinking.

Previous research indicates that individuals who engage in DSH commonly report that anxiety or tension relief was the strongest motivation for their behavior (Gardner & Gardner, 1975; Herpertz, 1995; Klonsky & Olino, 2008; Laye-Ginhu & Schonert-Reichl, 2005). A study by Klonsky and Olino (2008) explored how method, severity, and frequency of DSH relate to clinical correlates and functions of DSH. Young adults who self-harmed mildly and infrequently reported lower levels of clinical symptomology and were more likely to self-harm out of curiosity. Individuals who self-harmed more frequently and severely reported more anxiety and using DSH for social influence and affect regulation. The later group also reported higher levels of anxiety and depression. Herpertz (1995) studied patients with or without borderline personality disorder who engaged in DSH and found that the most common motive for DSH was to end intolerable tension or anxiety from overwhelming feelings of frustration, rejection, failure, separation, anger, or desperation. Gardner and Gardner (1975) investigated motivations

for DSH among a group of nonpsychotic female inpatients and found that the most frequently reported motivations for DSH were tension relief, self-punishment, attention-seeking, and sexual frustration. Bennum and Phil (1983) compared the affective states of patients who were either depressed or who engaged in DSH. They found that both groups reported similar levels of depression, but patients who engaged in DSH reported significantly higher levels of anxiety. Of the patients who engaged in DSH, 45% reported tension or anxiety as a precipitating factor for DSH. These patients also had higher self-ratings on measures of guilt, self-punishment, self-dislike, and poor body image. The researchers suggested that anxiety has a critical role in DSH. Thus, relief of anxiety appears to a common function of DSH.

Hostility Model

Individuals who engage in DSH have high levels of anger and hostility (Herpertz et al., 1997; Ross & Heath, 2003). They are unable to express their anger and hostility to other people (Ross & Heath, 2003). Instead, they use DSH to direct their anger onto a more acceptable source, which is themselves (Herpertz et al., 1997; Ross & Heath, 2003). Research supports this hostility model. Simeon and colleagues (1992) examined participants with personality disorders who engaged in DSH and found that DSH significantly correlated with chronic anger, somatic anxiety, and impulsivity. Ross and Heath (2003) compared the hostility model of DSH with the anxiety reduction model among high school students. Although adolescents who engaged in DSH reported higher levels of anxiety compared to the control group, significantly more of these individuals reported feelings of hostility than feelings of anxiety. Boys, in both the DSH and control groups, reported higher levels of hostility compared to girls. However, the majority of

participants reported that they used DSH to relieve both anxiety and hostility. These findings support the hostility model, but also suggest that anxiety plays a role in DSH.

Communication Model

According to the communication/expression model of DSH, individuals who engage in DSH have poorly developed communication skills, so they use DSH to communicate painful emotions (e.g., anger, hurt, depression, anxiety, or hostility) to others (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conn & Lion, 1983; Connors, 1996a ; Conterio & Lader, 1998; Doctors, 1981; Favazza, 1989; 1998; Feldman, 1988; Hawton, 1989; Himber, 1994; Ivanoff et al., 2001; Schwartz et al., 1989; Shearer, 1994). Similar to the hostility and anxiety reduction models, DSH is used to manage unpleasant emotions in the communication model. In the communication model, however, DSH does not relieve these emotions but rather provides physical indications of negative emotions. Individuals who engage in DSH may believe that words are not enough to communicate their emotional pain and that they must harm themselves to demonstrate the severity of their emotional pain.

DSH may also be a method of managing interactions with others (Allen, 1995; Doctors, 1981; Favazza, 1989; Gratz, 2003; Ivanoff et al., 2001; Nelson & Grunebaum, 1971; Simeon et al., 1992). DSH may serve to keep others from becoming too emotionally close or to avoid perceived abandonment. For example, DSH may be used to communicate emotional pain as a part of a “rescue fantasy” (Conterio & Lader, 1998). This fantasy is the belief that, if the individual self-harms, others will see the injuries and understand the depth of the individual’s emotional pain. Others will then provide help and emotional support for the individual. Thus, individuals who engage in DSH may

believe that DSH is the only way to communicate their pain and to maintain relationships.

Punishment Model

Proponents of the punishment model of DSH believe that the function of DSH is punishment, either for oneself or others (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Briere & Gil, 1998; Conn & Lion, 1983; Conterio & Lader, 1998; Crowe & Bunclark, 2000; de Young, 1982; Hawton, 1989; Himber, 1994; Nelson & Grunebaum, 1971; Shearer, 1994; Simeon et al., 1992; Simpson & Porter, 1981). According to this model, individuals who engage in DSH feel guilty and believe they deserve to be punished. They may use DSH to punish themselves for experiencing positive feelings such as pleasure or negative feelings such as sadness (Connors, 1996a). DSH may also be an attempt to punish other people for perceived slights or abandonment (Nelson & Grunebaum, 1971).

Attention-seeking Model

Based on the attention-seeking model, DSH is an attempt to gain attention or to obtain pity from people (Favazza, 1989; 1998; Feldman, 1988; Nelson & Grunebaum, 1971). According to this model, individuals who engage in DSH believe that only extreme negative behavior such as DSH will attract attention from people. This model resembles aspects of the communication and punishment models in that DSH may be used to manipulate others.

However, some researchers disagree with the attention-seeking model (Cavanaugh, 2002; Conterio & Lader, 1998). Gratz (2003) argued that DSH does not appear to be a form of manipulation as it is often performed in secret and not revealed to other people.

Additionally, the view that DSH is attention-seeking behavior can be harmful in that other people may dismiss or ignore DSH (Alderman, 1997). When people ignore DSH, individuals may feel that other people do not care about them or do not validate their emotional pain. Thus, a limitation of the attention-seeking model is that the emotional pain component of DSH is not addressed.

Experiential Avoidance Model

According to the experiential avoidance model, individuals who self-harm use DSH as a strategy to reduce or avoid uncomfortable emotional arousal (Chapman et al., 2006). Individuals are more likely to have a strong desire to avoid emotional response if they experience high emotional intensity, difficulty regulating their emotions when aroused, poor tolerance for distress, and a deficit of healthy emotion regulation skills. Deliberate self-harm negatively reinforces by providing relief or an escape from negative emotions. This model incorporates aspects from many other models including affect regulation, punishment, and hostility models. The experiential avoidance model, however, allows for DSH to serve several different functions at the same time. For example, an individual could self-harm to avoid being angry at another person and to punish his or her self for feeling anger.

The authors proposed three theories on how DSH provides relief. First, DSH may produce endogenous opioids, which create a pleasurable feeling when individuals self-harm. Second, DSH may provide an intense physical distraction from negative emotions which is a less painful alternative. Third, DSH serves as self-punishment for a perceived wrongdoing by the individual and relieves guilt associated with this wrongdoing. All of these theories received support, to some extent, from previous research.

Summary of Models of Deliberate Self-Harm

The DSH models provide explanations for various ways that DSH develops and functions. Common aspects across several models include implications that DSH develops during early life experiences and that DSH relieves or expresses uncomfortable emotions, especially anxiety. Based on each of these models, DSH serves only one function. However, research indicates that, for each individual, DSH may serve several functions. Favazza and Conterio (1989) surveyed a nonrandom sample of 240 individuals who engaged in DSH about their childhood experiences, personal attributes, and functions of DSH. The majority of participants reported multiple reasons why they engaged in DSH. The most frequently reported reasons were to control racing thoughts (72%), to feel relaxed (65%), to feel less depressed (58%), to feel real again (55%), and to feel less lonely (47%). Among personal attributes, participants frequently endorsed many statements that apply to several different models. For example, the most frequently endorsed statements about personal attributes were the desire to stop emotional pain (82%), an all or nothing attitude (78%), a belief that they are a burden to others (75%), and an inability to find words to express feelings (73%). Findings from this study and others suggest that various personal beliefs contribute to DSH and that DSH serves multiple functions. Further investigation of models of DSH is necessary to develop a comprehensive theory that encompasses all characteristics of DSH.

Assessments of Deliberate Self-Harm

Few standardized assessments for DSH exist (Welsh, 2001). Instead, many researchers and clinicians assess for DSH using self-report checklists or unstructured

interviews developed specifically for their study or clinical practice (Alderman, 1997; Conterio & Lader, 1998). Content of the assessments vary, but researchers have identified major areas that are important to assess in cases of DSH (Conterio & Lader, 1998; Simeon & Favazza, 2001; White Kress, 2003).

Researchers suggest that clinicians should assess key areas with either interview or written self-report format in cases of suspected or confirmed DSH (Conterio & Lader, 1998; Simeon & Favazza, 2001; White Kress, 2003). Psychologists should take inventory of an individual's DSH history and lifetime and current frequencies of DSH, age of initial onset, course of DSH, longest period free of DSH, and any changes in DSH over time. The assessment should also include family history of DSH and childhood experiences that are frequently associated with DSH, such as maltreatment. Clinicians should assess for possible suicidal ideation and any relationship between DSH and suicidal ideation to rule out DSH as a suicide attempt. The assessment should also include motivations for DSH, emotional states surrounding DSH, and triggers to the behavior as well as cognitive functioning and comorbidity of other mental health issues such as substance abuse. For treatment of DSH, clinicians need to assess the positive and negative consequences of DSH, including medical complications from DSH, previous treatment for DSH or efforts to stop the behavior, and success of these treatments.

One measure used to assess DSH is the Self-Injury Motivation Scale (SIMS) (Osuch et al., 1999). The SIMS is a 35-item self-report measure that assesses reasons why individuals engage in DSH. This measure does not assess for types and frequency of DSH, but rather frequency of various motivations during previous DSH. Items on the SIMS were selected from previous studies on DSH and clinical contact with patients who

engaged in DSH.

The SIMS was examined on 76 psychiatric inpatients who reported that they engaged in DSH. The researchers also administered the Dissociative Experiences Scale (DES), Beck Depression Inventory (BDI), Davidson Trauma Scale, Millon Clinical Multiaxial Inventory-II (MCMI-II), and a semistructured interview on frequency of self-injury, amnesia, analgesia, impulsivity, and feelings of relief from self-injury to measure convergent, divergent, and construct validity.

The SIMS displayed good psychometric properties. The SIMS has good internal consistency, with a Cronbach's alpha of .96. Test-retest reliability was reported as .70. The SIMS significantly correlated with DES, BDI, and DTS scores, which coincides with findings that DSH is comorbid with dissociation, depression, and traumatic experiences. Participants who scored high on the SIMS, as defined by a score of 95 or higher, were more likely to report having engaged in multiple methods of self-harm, receiving medical attention for their DSH, and feeling relieved by DSH. This group also had clinically significant scores on the MCMI-II subscales of Avoidant, Passive-Aggressive, Self-Defeating, and Borderline. As expected, participants who frequently engaged in DSH reported many features of borderline personality disorder, which is highly comorbid with DSH.

Factor analysis of the SIMS yielded six factors: affect modulation, desolation, punitive duality, influencing others, magical control, and self-stimulation. Affect modulation included items related to relief of uncomfortable feelings such as anxiety or dissociation. The desolation factor included items concerning feelings of loneliness and emptiness. Items that loaded highly on the punitive duality factor were related to self-

punishment. Influencing others included items on communication of emotions and management of interpersonal relationships. Items that loaded highly on the magical control factor included use of DSH in conjunction with obsessive thoughts. The self-stimulation factor included items related to managing sexual feelings or obtaining a drug-like “high” from DSH.

The SIMS has been revised (SIMS-II) and used to assess for gender differences in why males and females engage in DSH (Kumar et al., 2004). Kumar and colleagues (2004) used the SIMS-II to assess motivation for DSH among adolescents. Although the findings revealed no significant gender differences in motivations for DSH, the study did provide further psychometric information on the SIMS-II. Cronbach’s alpha was used to measure the internal consistency of the overall measure and the six subscales. The Total score had a Cronbach’s alpha of .91. Scores on the Affect Modulation ($\alpha = .81$), Influencing Others ($\alpha = .78$), Punitive Duality ($\alpha = .73$), and Desolation ($\alpha = .70$) subscales had good to moderate internal consistency. Scores on the Self-Stimulation ($\alpha = .65$) and Magical Control ($\alpha = .51$) subscales were inconsistent. No other studies have utilized the SIMS-II.

Although the SIMS provides an assessment of the motivations behind DSH, this instrument is not effective for assessing the frequency, onset, and various methods of DSH. Another empirically validated assessment for DSH, the Deliberate Self-Harm Inventory (DSHI), assesses for self-reported frequency, severity, duration, and types of DSH (Gratz, 2001). The DSHI consists of 17 items based on the definition of self-harm as deliberate, direct destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough for tissue damage to occur.

Preliminary data on the DSHI have been reported. Psychometric properties were tested with a sample of 150 male and female undergraduates. Construct validity was measured by comparing the DSHI to four questions on DSH from the Mental Health History Form, one item on DSH from the Diagnostic Interview for Borderlines, Revised (DIB-R), and one item on DSH from the Suicide Behaviors Questionnaire (SBQ). Convergent validity was assessed by comparing the DSHI with the Borderline Personality Organization Scale (BPO) because borderline personality features are frequently associated with DSH.

Gratz (2001) reported that internal consistency of the scores on the DSHI was good (Cronbach's $\alpha = .82$). The test-retest reliability over a 2-4 week period was $r = .92$. The DSHI was significantly and moderately correlated with the items from the Mental Health History Form ($r = .49$), the item from the DIB-R ($r = .43$), and the item from the SBQ ($r = .35$). The DSHI was more highly correlated with measures of DSH and the BPO ($r = .48$) than measures of suicide attempts, which demonstrates good discriminant and convergent validity. Although these findings are promising, this study needs to be replicated with other populations to better validate the DSHI.

Another measure of DSH is the Self-Harm Inventory (SHI), which is an assessment of self-harm and impulsive behavior among individuals with BPD (Sansone et al., 1998). The SHI consists of 22 items that assess for types of impulsive behavior. Items were derived from the clinical experience of the authors as well as literature on self-destructive behavior among individuals with BPD. Areas assessed include DSH, substance abuse, and reckless behaviors.

Initial psychometric properties of the SHI were gathered with 238 women from a nonclinical population. Construct validity was measured by comparing the SHI with the Borderline Personality scale of the Personality Diagnostic Questionnaire-Revised (PDQ-R). These two measures were moderately correlated ($r = .57$). The SHI was also validated with a sample of 32 nonpsychotic males and females hospitalized at a psychiatric facility. Again, construct validity was assessed using the Borderline Personality scale of the PDQ-R as well as a semistructured interview based on the criteria for BPD from the DSM-IV. Scores on the PDQ-R and the SHI were highly correlated ($r = .71$). A score of 5 (of 21) was used as the cutoff for potential BPD. The SHI had a high accuracy rate for true positives, but also identified many false positives. Although the SHI does assess for DSH, the measure also assesses for several other types of impulsive behavior and is intended to identify self-harm associated with BPD.

Although few measures assess for DSH specifically, other measures include items related to DSH, such as measures of BPD and trauma. For example, the Revised Interview for Borderlines-Revised (DIB-R) contains an item assessing for DSH (Zanarini, Gunderson, Frankenburg, & Chauncey, 1989): “Have you deliberately hurt yourself without trying to kill yourself anytime in the last two years?” The Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD) includes a section about self-destructive efforts that assesses for intensity and frequency of DSH (Zanarini, 2003): “During the past week, have you deliberately hurt yourself without meaning to kill yourself (e.g., cut yourself, burned yourself, punched yourself, put your hand through windows, punched walls, banged your head)?” If the interviewee responds “Yes,” the interviewer inquires about the frequency and severity of DSH episodes in the past week.

The Borderline Syndrome Index (BSI) contains three items assessing for self-harm (Conte, Plutchik, Karasu, & Jerrett, 1980). The Trauma Symptom Inventory (TSI), a measure of PTSD symptoms, includes an item on DSH in the Tension Reduction Behaviors subscale (Briere, Elliott, Harris, & Cotman, 1995). All of these measures of BPD and PTSD include between one and three DSH items, but none provide detailed information about the frequency, severity, and types of DSH.

Treatments for Deliberate Self-Harm

General Treatment Recommendations

Most of the treatment recommendations for DSH extend from clinical work rather than empirical research. Although clinicians have several suggestions for DSH treatment, few controlled studies exist on the efficacy of these treatments. These recommendations may be helpful but should not be considered empirically-validated interventions.

The most difficult task for therapists treating individuals for DSH is often initiating the first discussion about DSH because many clients do not initially disclose the behavior (Arnold & Magill, 1996; Baiker & Arnold, 1997). Merely discussing DSH can improve a client's quality of life by reducing shame and isolation (Connors, 1996b). Arnold and Magill (1996) suggested that therapists should be aware of indications of DSH, such as wearing long sleeves in warm weather, and should have literature on DSH available if a client chooses to disclose. If therapists suspect that a client is self-harming, therapists should use gentle inquiry to obtain information on DSH. However, if the injury is severe, therapists need to refer the client for immediate medical attention before proceeding with therapy. When a client reports DSH, therapists should acknowledge that DSH is a

difficult topic to discuss and create an accepting environment in which the client can talk about DSH. Conterio and Lader (1998) recommended that therapists should convey to the client that DSH is not an indication that the client is “crazy,” but that DSH is unhealthy. Therapists should discuss with the client possible functions of DSH and help him or her explore what function DSH serves (Arnold & Magill, 1996). Additionally, therapists should respect a client by not attempting to extinguish DSH before the client is ready (Arnold & Magill, 1996).

A frequent recommendation for treatment of DSH is that therapists should understand the function of DSH (Baiker & Arnold, 1997; Himber, 1994; Tantam & Whittaker, 1992). As various DSH models indicate, DSH can serve many different purposes, such as to release anxiety, communicate pain, or express control over one’s body. To best treat DSH, therapists need to understand the function of DSH to identify more healthy ways to address the problem. Moreover, understanding the function of DSH can help build the therapeutic alliance.

The therapeutic alliance appears important for treatment of DSH (Baiker & Arnold, 1997; Himber, 1994; Storey, Hurry, Jowitt, Owens, & House, 2005; Tantam & Whittaker, 1992). Connors (1996b) suggested that therapists should strive to create balance of power between themselves and the client because many individuals who engage in DSH feel disempowered. One way to accomplish this task is to allow the client to set the pace of therapy and not to push clients to progress through therapy too quickly. Derouin and Bravender (2004) recommended that active and genuine listening can strengthen the therapeutic relationship because individuals who engage in DSH may feel that their feelings are not validated. Conterio and Lader (1998) reported that, though no

one orientation has shown advantages over any other in treatment of DSH, the client-therapist relationship has a much stronger influence on the likelihood of a positive outcome.

After DSH is identified and a therapeutic alliance has been built, therapists treating clients who engage in DSH need to establish boundaries in therapy and outside of sessions (Conterio & Lader, 1998; Tantam & Whittaker, 1992). Conterio and Lader (1998), who created the only inpatient treatment program specifically for DSH, advised that clients who engage in DSH often have poor interpersonal boundaries and tend to violate others' boundaries. Before agreeing to treat a client who engages in DSH, therapists should be aware that these clients may require a long-term commitment. Additionally, therapists should discuss family participation with a client before therapy begins. Therapists need to decide how available they want to be for their clients outside of therapy and communicate these limitations to the client. Additionally, therapists need to help prepare a client for times when the therapist is unavailable and how the therapist will respond when the client calls with an urge to self-harm. If the client does call the therapist between sessions, therapists should praise the client for calling, assess the client's internal state, and then suggest alternative coping strategies. In one type of treatment for DSH, clients can utilize telephone contact between sessions to resolve misunderstanding or to practice coping skills as long as clients have not already engaged in DSH (Ivanoff et al., 2001). However, if clients do engage in DSH, they cannot have supportive telephone contact for 24 hours after DSH.

Conterio and Lader (1998) suggested that therapists utilize a contract to define boundaries. This contract, which should be a collaborative effort between a client and

therapist, identifies therapeutic goals that are reasonable for a client to achieve. The contract can stipulate number of sessions per week and require that a client attend sessions regularly. The contract can be used to set other limits as well, including that the client will refrain from engaging in DSH during sessions, that the client will disclose new acts of DSH, and that the client will seek medical attention if wounds are severe. If the client does engage in DSH severe enough to demand medical attention, a therapist should decide to hospitalize the client if the DSH episode prevents therapy progress or jeopardizes the client's health. The contract is regularly reevaluated and adjusted depending on the client's progress.

In summary, general recommendations for treatment of DSH include facilitating disclosure of DSH (if the client has not previously disclosed this information), helping a client understand the function of DSH, building a strong therapeutic alliance, and setting boundaries for therapy with the client. These recommendations are useful because clinicians often choose not to treat this population which they find DSH too distressing or believe that DSH is resistant to treatment (Alderman, 1997; Arnold & Magill, 1996; Baiker & Arnold, 1997; Conterio & Lader, 1998; Osuch et al., 1999; White Kress, 2003). The perception that DSH is difficult to treat may stem from use of techniques that are not useful or that harm clients. These techniques are detailed in the following section.

Treatments of Deliberate Self-Harm Subsumed under

Borderline Personality Disorder

Because DSH is a criterion for BPD, treatment for BPD often includes treatment of DSH. In particular, dialectical behavior therapy (DBT), a cognitive-behavioral treatment for BPD first developed specifically for the treatment of DSH, is used to treat DSH as a

symptom of BPD (Ivanoff et al., 2001). Later, DBT was modified for BPD because of the comorbidity of the two psychological problems. DSH is often utilized by individuals with BPD to regulate frequent episodes of strong, easily triggered, negative emotions (Bauserman, 1998; Linehan, 1993).

DBT is a year-long treatment in either a group or individual setting using primarily behavioral and cognitive techniques with an emphasis on both change and acceptance (Bauserman, 1998; Ivanoff et al., 2001). In DBT, therapists reflect a client's thoughts and feelings and use problem-solving techniques to generate healthier coping skills (Linehan, 1993). Therapists employ reciprocal communication of genuineness, warm engagement, and responsiveness with irreverent communication in a direct, confrontational, and matter-of-fact style (Ivanoff et al., 2001). Therapists can thus convey empathy and understanding while simultaneously confronting unhealthy behaviors.

The treatment includes four skill areas: (1) mindfulness, which is maintaining awareness of one's actions while in action, controlling one's attention, and being aware of one's true self; (2) interpersonal effectiveness, which is the ability to handle conflict in ways that benefit both the individual and the individual's relationships with others; (3) emotional regulation, which is the ability to label and manage emotions, increase or decrease physiological arousal associated with emotions, experience emotions without escalating to a more extreme state or blunting one's emotions, and decrease impulsive, emotion-driven behaviors; and (4) distress tolerance, which is the ability to accept both oneself and the current environment in a nonjudgmental way (Bauserman, 1998; Ivanoff et al., 2001).

During mindfulness skills training, clients learn how to balance their emotions with rational thoughts and be aware of their own thoughts and feelings at the time they are experiencing them (Linehan, 1993). Interpersonal effectiveness skills include learning how to be treated with respect in relationships, using direct means to ask others for favors and requests, refusing unwanted or unreasonable requests from others, resolving interpersonal conflicts, and giving an opinion or viewpoint in ways that others will take seriously. The goals of emotional regulation include identifying and labeling emotions, identifying obstacles to changing emotions, decreasing impulsive behaviors, increasing positive events, and being aware of current emotional states. Distress tolerance skills include methods of self-soothing, including participation in enjoyable activities and relaxation exercises. All of these skills are taught within the framework of the dialectical strategy of balancing acceptance of who the patients are while moving toward change (Ivanoff et al., 2001).

DBT consists of four stages (Ivanoff et al., 2001). In the pretreatment stage, clients are oriented to and make a commitment to DBT. In stage 1, therapists target life-threatening behaviors, such as DSH, suicidal behavior, and homicidal behavior, and build a therapeutic alliance. Weekly diary cards are used to track problem behavior. Suicidal behavior or DSH is addressed in the session immediately following any incidents. In stage 2, therapists address any symptoms of PTSD or invalidating experiences, such as feelings of rejection or abandonment. Finally, in stage 3, therapists target self-respect and achievement of individual goals.

Treatment outcome studies indicate that DBT decreases the occurrence of DSH among individuals with BPD (Bauserman, 1998; Linehan et al., 1991; 1993). Individuals

with BPD and DSH who receive DBT were less likely to exhibit severe DSH, dropout from treatment, and be hospitalized for psychiatric problems (Bauserman, 1998; Gratz & Gunderson, 2006). Linehan and colleagues (1991) found that patients with BPD who underwent DBT reported significant decreases in DSH. In a follow-up study on DBT, female patients with BPD reported significant decreases in DSH at 6- and 12-months (Linehan et al., 1993). Although these findings are promising, previous studies have only examined how effective DBT is in decreasing DSH among individuals with BPD. Researchers should apply DBT to treat DSH among individuals without BPD.

Inpatient Treatments

Many treatment studies on DSH focus on inpatient settings because individuals who reveal DSH are often mistakenly hospitalized for a suicide attempt (Conterio & Lader, 1998). Other studies on DSH occur in correctional facilities because DSH is also common in these settings (Ross & McKay, 1979). Although much of the research on DSH is based on inpatient studies, inpatient treatment will be described separately from outpatient treatment as these treatments are specific to inpatient settings.

The Self Abuse Finally Ends (S.A.F.E.) program is one of the only inpatient programs that specializes in treatment of DSH (Conterio & Lader, 1998). This program requires that patients voluntarily admit themselves when they are not in crisis. These stipulations are intended to ensure that patients decide to seek help on their own and not while they are extremely upset. Upon admission, patients must sign a “No Harm” contract, but if they do engage in DSH, they discuss the incident with staff and decide whether to continue the program or be discharged. Patients are allowed to leave at any time as long as they discuss their discharge with staff.

The goals of the S.A.F.E. program are to promote verbal expression of feelings, help patients develop tolerance for negative feelings, and challenge the idea that every emotion requires a physical release (i.e., anger can be experienced without physical harm) (Conterio & Lader, 1998). Based on these goals, patients are encouraged to speak in the first person and to not distance themselves from their emotional experiences. In addition, patients are discouraged from focusing on the physical aspects of DSH, such as showing their scars and sharing their DSH stories with other patients.

The staff at the S.A.F.E. program challenge common cognitive misconceptions. These misconceptions include the beliefs that DSH does not hurt anyone, that quitting DSH will cause too much emotional pain, that DSH is the best way for others to see one's pain or to know that others care, and that negative attention from DSH is better than no attention. The S.A.F.E. program also includes treatments in both inpatient and outpatient programs. These treatments will be described in the section on outpatient treatments.

Other findings from inpatient treatment studies suggest similar ideas. For example, Crowe and Bunclark (2000) advised that inpatient treatment should include weekly coping skills groups aimed at increasing patients' distress tolerance and improving assertiveness skills. Individuals who utilize DSH tend to have a low threshold for distressful feelings such as anxiety and anger. They often become upset when they perceive that others are not hearing or responding to their wants and needs. Therefore, addressing these difficulties in an inpatient setting can change patterns of thinking and interactive skills (Crowe & Bunclark, 2000).

Another suggestion for inpatient treatment is to provide patients with positive emotional experiences by establishing new interpersonal relationships (Grunebaum &

Klerman, 1967). Individuals who engage in DSH often have negative childhood experiences, such as maltreatment, that leads them to establish unhealthy relationships. They are unaware of how to establish appropriate boundaries and maintain healthy relationships. Thus, one goal for the staff is to model appropriate boundaries and relationships with patients. This task involves outlining limitations for patients early in therapy so that patients know what is expected of them. Also, staff should be aware that patients may try to manipulate them and thus need to communicate with each other to prevent patients from positioning one staff member against another.

One study examined the function of DSH in a correctional facility for female adolescents (Ross & McKay, 1979). Ross and McKay (1979) found that DSH was a function of the interaction between social adaptation (i.e., being accepted by one's peers) and expression of psychopathological symptoms such as uncontrollable feelings of anger and helplessness. In particular, DSH often occurred to manage interpersonal relationships within the institution. For example, DSH was used to show affection toward another peer, demonstrate anger at a peer or staff, or get attention from peers and staff.

The researchers implemented multiple treatment programs that failed before finally developing a successful program to eliminate DSH. First, the researchers tried a behavior modification program based on a token economy of rewards and punishments. The program was successful in a pilot study but was ineffective when implemented throughout the entire institution. Next, the researchers tried a behavior modification program based on only positive rewards. This treatment was more successful but DSH still persisted. The researchers tried a third behavior modification program that contained a peer helper component. The peer helper was another peer who was trained to model

appropriate behavior for adolescents who engaged in DSH. Again, DSH decreased but was still present in the institution.

Finally, the researchers created a program called co-opting in which they approached rebellious adolescents who were admired and respected by their peers and asked them for help in eliminating DSH. The researchers then covertly trained these leaders in prosocial ways and therapeutic techniques in which these leaders received some privileges and control over their environment in exchange for prosocial behavior. The now prosocial leaders then trained other girls and gave them control over their own therapy, which worked to create a positive peer environment. This program succeeded in eliminating all DSH in the institution. The researchers proposed that this last program succeeded because the adolescents gained control through means other than DSH (though they were not aware that this was the goal of the program). Also, the researchers did not punish DSH when it occurred, which removed the association between DSH and rebellion.

Although the co-opting program was successful in this correctional facility, the researchers recognized that the program may only work well in controlled environments and long-term settings. DSH served a very specific function in this correctional facility and needed a specific treatment. The general principles of giving control over to the client may be useful in outpatient settings, but this program required that clients have average to good social and cognitive functioning.

Overall, inpatient treatment can be successfully used to treat DSH. In general, important aspects of inpatient programs include establishing boundaries with patients, encouraging healthy expression of emotions, modeling healthy relationships with patients, and giving patients control and privileges for prosocial behavior (Conterio &

Lader, 1998; Crowe & Bunclark, 2000; Grunebaum & Klerman, 1967; Ross & McKay, 1979). Despite these findings, inpatient treatment is not always feasible due to the cost of hospitalization and the length of stay required for successful treatment. Thus, outpatient treatment may be the best option for many individuals who engage in DSH.

Outpatient Treatments

Individuals who engage in DSH often require long-term outpatient treatment even if they successfully complete an inpatient program. Outpatient treatment not only provides extended support but also allows clients to continue learning new coping skills and exploring the cause of their DSH. The outpatient treatments described below are grouped into five categories by theoretical orientation or mode of therapy. These categories include psychodynamic interventions, cognitive-behavioral therapy (CBT), interpersonal skills training, group therapy, and family therapy.

Psychodynamic Interventions

Several psychodynamic theorists state that DSH develops as a reaction to childhood traumatic events, such as parental abandonment (Doctors, 1981; Suyemoto, 1998). Therefore, the goals of psychodynamic therapy are to help a client process traumatic material and use words rather than primitive gestures to communicate (Connors, 1996b; Graff & Mallin, 1967). However, Conterio and Lader (1998) warned that clients may display more severe DSH during the course of therapy when discussing traumatic memories, so therapists should prepare themselves and clients for this possibility.

Rockland (1987) proposed that treatment goals for psychodynamically-oriented supportive therapy are to help clients learn how to meet their needs, find less self-destructive ways of addressing painful feelings, and change their environment to decrease

external stress. Additionally, therapists should educate clients about how their neediness, sensitivity to rejection, and intense rage and guilt lead to DSH. Clients need to better regulate their emotions and master feelings of helplessness (Gratz, 2003; Rockland, 1987).

Other psychodynamic interventions focus on building a strong therapeutic alliance. The therapeutic relationship is strengthened through psychoeducation about DSH, setting and respecting appropriate boundaries, and praising clients' strengths and progress in therapy (Crowe & Bunclark, 2000; Favazza, 1998; 1999). Crabtree (1967) also recommended that therapists refuse to take responsibility for clients' self-destructive behavior and, instead, help clients admit their lack of control over DSH. Therapists can also help their clients by communicating how DSH affects the therapist to illustrate the negative effect DSH has on others (Crabtree, 1967). Overall, psychodynamic interventions include talking about traumatic events, helping clients experience emotions associated with trauma in a supportive environment, promoting healthy coping skills for anxiety stemming from these events, modeling healthy relationships, and building a strong therapeutic alliance.

Cognitive-Behavioral Interventions

Several recommendations for DSH are based on CBT for anxiety. One of the most frequently suggested CBT techniques is increasing awareness of DSH patterns, especially triggers of and reinforcement from DSH through self-monitoring (Baiker & Arnold, 1997; Connors, 1996b; Conterio & Lader, 1998; Favazza, 1999; Hawton, 1989; Pawlicki & Gaumer, 1993; Tantam & Whittaker, 1992; Walsh & Rosen, 1988). Self-monitoring

can help clients gain control over DSH by identifying precipitating events that trigger DSH (Hawton, 1989; Tantam & Whittaker, 1992).

Self-monitoring also serves to identify reinforcers for DSH (Walsh & Rosen, 1988). DSH can be reinforcing in several ways. First, DSH can provide internal negative reinforcement, such as relief from anxiety. Second, DSH may serve as external negative reinforcement, such as escape from criticism, anger, and rejection. Third, DSH can provide external positive reinforcement, such as attention from others.

Conterio and Lader (1998) suggested that clients utilize an impulse control log to monitor DSH urges, time and date that the urges occur, situations in which urges occur, what would result if one engaged in DSH, what one wanted to communicate by engaging in DSH, action taken (i.e., DSH or other action), and outcome of this action. The purpose of self-monitoring is to help clients identify situations that increase anxiety or tension, recognize how DSH relieves negative emotions or produces positive emotions, and develop alternative ways to relieve tension (Hawton, 1989; Tantam & Whittaker, 1992).

After clients recognize triggers and reinforcers of DSH, they can develop alternate means of handling unpleasant mood changes (Allen, 1995; Briere & Gil, 1998; Conterio & Lader, 1998; Feldman, 1988). Therapists should help clients differentiate appropriate from inappropriate forms of self-soothing (Pawlicki & Gaumer, 1993). Clients should learn to substitute adaptive tension-releasing behavior for maladaptive DSH (Walsh & Rosen, 1988). By identifying healthy coping skills to relieve negative moods, clients can develop a specific plan to interrupt the arousal state that precedes DSH (Pawlicki & Gaumer, 1993). Several researchers have suggested that clients create a list of 5-10 alternative activities to do in place of DSH (Connors, 1996b; Conterio & Lader, 1998;

Crowe & Bunclark, 2000; MacAniff-Zila & Kiselica, 2001). Clients should be able to do these activities at almost any place or time and keep this list with them. These activities are not intended to suppress negative feelings but rather allow clients time to process their feelings and not act impulsively.

Various alternative activities can be substituted for DSH. For example, clients may utilize meditation or relaxation skills such as deep breathing, visualization, or progressive muscle relaxation (Alderman, 1997; Connors, 1996b; Conterio & Lader, 1998; Derouin & Bravender, 2004; Feldman, 1988; Hawton, 1989). Other pleasurable activities may include watching a favorite movie, reading a book, taking a walk, taking a bath, exercising, journaling, calling a friend, or listening to favorite music (Connors, 1996b; Favazza, 1998; Hawton, 1989; Pawlicki & Gaumer, 1993).

Some alternative behaviors are intended to mimic the action or sensation of DSH, such as drawing “blood” on paper, “injuring” a stuffed animal, marking one’s skin with a red marker, cutting one’s wrist with a plastic razor, or placing ice on the skin (Conn & Lion, 1983; Connors, 1996b). Conterio and Lader (1998) cautioned against the use of these alternative activities because, if clients utilize these activities in place of DSH, clients learn that they must engage in a violent or painful action to relieve distress. Instead of using actions to escape from painful emotions, clients must learn that anxiety and distressing feelings will dissipate on their own and that they can develop a higher tolerance for anxiety (Baiker & Arnold, 1997).

Some CBT treatments focus primarily on cognitive distortions. For example, one common distortion is that DSH is an acceptable form of communicating emotions and is necessary to maintain relationships (MacAniff-Zila & Kiselica, 2001; Walsh & Rosen,

1988). Another distortion is that one's body and self are disgusting. Many individuals who engage in DSH falsely believe that action is necessary to reduce unpleasant feelings. Another common distortion among individuals who engage in DSH is that they deserve punishment.

Therapists should demonstrate the connection between clients' cognitions and DSH (Walsh & Rosen, 1988). Therapists can address these misconceptions by explaining that, instead of maintaining relationships, DSH isolates an individual and provokes feelings of resentment, guilt, and anger from others. Also, therapists should help clients learn that emotions are temporary experiences that will dissipate without taking action. Additionally, therapists should help clients replace negative thinking with realistic self-statements such as "I deserve to be happy" or "I'm satisfied with my body" (Crowe & Bunclark, 2000).

Other CBT treatments are more behaviorally-based. One recommended treatment is systematic desensitization in which clients are gradually exposed to situations that typically trigger DSH (van Moffaert, 1990; Walsh & Rosen, 1988). This treatment is suggested for cases where DSH is a specific reaction to anxiety (van Moffaert, 1990).

Overall, CBT strategies for DSH concentrate on identifying DSH triggers, exploring the reinforcing power of DSH, developing alternative coping skills for relieving anxiety triggered by DSH, and confronting cognitive distortions concerning DSH (Baiker & Arnold, 1997; Connors, 1996b; Conterio & Lader, 1998; Hawton, 1989; Favazza, 1999; MacAniff-Zila & Kiselica, 2001; Pawlicki & Gaumer, 1993; Tantam & Whittaker, 1992; Walsh & Rosen, 1988). These treatments address the anxiety reduction function of DSH. Nevertheless, DSH serves other functions, such as expressing emotions and managing

interpersonal relationships. Treatments for these functions are discussed in the following section.

Interpersonal Skills Interventions

Interpersonal skills training for DSH focuses on communication/assertiveness and emotional expression. Communication skills and assertiveness training, for example, are used to teach clients to ask for positive external reinforcement, such as attention or affection, in their relationships instead of utilizing DSH to demand attention (Derouin & Bravender, 2004; Favazza, 1998; Walsh & Rosen, 1988). Improved communication can also decrease environmental stress related to DSH by increasing clients' feelings of connectedness to their families and social circles (Derouin & Bravender, 2004). Clients who feel more connected to others are more likely to improve mood regulation by expressing their feelings to others. Improved communication skills can also benefit clients by emphasizing that others are willing to hear clients' experiences, feelings, and needs as long as clients communicate appropriately (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996b; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Walsh & Rosen, 1988).

Communication skills are related to emotional expression, in which clients' learn to identify and verbalize their feelings (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996b; Conterio & Lader, 1998; Crowe & Bunclark, 2000; Hawton, 1989; MacAniff-Zila & Kiselica, 2001; Pawlicki & Gaumer, 1993; Walsh & Rosen, 1988). Better communication skills can also delay a client's experience of distressing emotions and acting on DSH impulses. Conterio and Lader (1998) recommended that therapists utilize this delay between DSH impulse and action to help clients experience their

feelings. Many individuals who engage in DSH believe they cannot withstand distressing emotions. Therapists should educate clients that feelings are not good or bad, just comfortable or uncomfortable. Once clients recognize that experiencing a range of positive and negative emotions is acceptable, therapists can teach clients that communicating feelings to others relieves negative emotions (Conterio & Lader, 1998; Favazza, 1998).

Research supports the use of interpersonal skills training with clients who engage in DSH. Huband and Tantam (1999) surveyed clinicians on which strategies they would utilize to treat a sample case of DSH. The most recommended strategies were ventilation of feelings about the past, teaching emotional management, and teaching conflict management and assertiveness skills. Interpersonal strategies are among the most recommended treatments by clinicians in treating DSH.

Group Interventions

Many of the outpatient treatments described here, such as DBT, can be applied in a group format (Derouin & Bravender, 2004; Gratz & Gunderson, 2006; Ivanoff et al., 2001). Group therapy has advantages over individual therapy in that group format allows clients to actively practice their interpersonal skills (Crowe & Bunclark, 2000). In group therapy, clients can help one other understand how DSH is a method of gaining intimacy and nurturance and learn to care for themselves in other ways. Through this process, clients are empowered by helping others with similar experiences. Additionally, group therapy demonstrates to clients that they are not the only ones who engage in DSH. Gratz and Gunderson (2006) examined the efficacy of an emotional regulation intervention in a group format among female adults with BPD who engaged in DSH. The intervention was

based on DBT, acceptance and commitment therapy (ACT), emotion-focused psychotherapy, and behavior therapy. ACT involves acceptance of emotions and commitment to personal values that guide decision-making. The intervention included psychoeducation on the function of emotions, increasing emotional awareness, presenting the benefits of emotional acceptance, behavioral strategies for change and impulse control, and commitment to valued directions (i.e., what the individual most values in his or her life). The majority of participants in the treatment group reported improved emotional regulation, decreased emotional avoidance, and substantial reduction in DSH. Emotional regulation strategies were found to be more effective in reduction of DSH than behavioral strategies for change and impulse control. However, this reduction may be due to order effect rather than effectiveness of a treatment because emotional regulation skills were presented first without any counterbalancing. Also, the effectiveness of these interventions in a group versus individual therapy format has not been examined.

Summary of Treatments for Deliberate Self-Harm

Overall, researchers and clinicians focus on the therapeutic relationship as well as specific intervention techniques when treating DSH. General treatment recommendations for therapists include open discussion about DSH and its functions, building a strong therapeutic alliance, and establishing boundaries (Arnold & Magill, 1996; Baiker & Arnold, 1997; Connors, 1996b; Conterio & Lader, 1998; Derouin & Bravender, 2004; Himer, 1994; Tantam & Whittaker, 1992). DBT, primarily used to treat BPD, may be applied to treatment of DSH alone (Bauserman, 1998; Ivanoff et al., 2001; Linehan, 1993; Linehan et al., 1991; Linehan et al., 1993).

Inpatient and outpatient treatments focus on similar techniques for DSH. Inpatient treatment recommendations include developing distress tolerance, promoting verbal expression of emotions instead of using physical gestures, challenging cognitive misconceptions about DSH, increasing assertiveness skills, setting appropriate boundaries, and empowering clients (Conterio & Lader, 1998; Crowe & Bunclark, 2000; Grunebaum & Klerman, 1967; Ross & McKay, 1979). Although outpatient treatments vary by theoretical orientation and mode of therapy, general recommendations include processing traumatic events, regulating emotions, identifying DSH triggers and reinforcers, developing alternate coping skills, targeting cognitive distortions, and improving communication and assertiveness skills (Alderman, 1997; Allen, 1995; Baiker & Arnold, 1997; Briere & Gil, 1998; Connors, 1996b; Conterio & Lader, 1998; Derouin & Bravender, 2004; Favazza, 1999; Feldman, 1988; Graff & Mallin, 1967; Gratz, 2003; Hawton, 1989; Huband & Tantam, 1999; MacAniff-Zila & Kiselica, 2001; Pawlicki & Gaumer, 1993; Rockland, 1987; Tantam & Whittaker, 1992; Walsh & Rosen, 1988).

Limitations of Previous Deliberate Self-Harm Research

Based on recent data, males may be more likely to engage in DSH than present estimates indicate (Croyle & Waltz, 2007; Gratz et al., 2002; Heath et al., 2008). More research may help identify occurrence, types, and frequency of DSH among males. Another limitation of previous research is that few studies included an adolescent sample (Arnold & Magill, 1996; Conterio & Lader, 1998; Raine, 1982; Suyemoto, 1998). This limitation is unfortunate because DSH typically originates during adolescence (Conterio & Lader, 1998; Crowe & Bunclark, 2000; Favazza, 1992; 1999; Pao, 1969; Pattison &

Kahan, 1983; Rosenthal et al., 1972; Simeon et al., 1992; Tantam & Whittaker, 1992; van der Kolk et al., 1991). Studies on DSH during adolescence would contribute to a better understanding on DSH when it is most likely to occur.

Research on individual correlates of DSH support a relationship between DSH and impulsivity, emotional dysregulation, poor coping skills, and poor interpersonal skills (Briere & Gil, 1998; Chapman et al., 2006; Claes et al., 2007; Conterio & Lader, 1998; Connors, 1996a; Dulit et al., 1994; Evans et al., 2005; Favazza, 1989; Gratz et al., 2002; Gratz & Roemer, 2004; Haines et al., 1995; Heath et al., 2008; Klonsky et al., 2003; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Berry Mendes, 2008; Simeon & Hollander, 2001; Zlotnick et al., 1996; Zweig-Frank et al., 1994). Few studies, however, investigated these correlates among adolescents, especially males. The relationships between these correlates and DSH may be important to better understand DSH in males.

Despite several models of DSH and differing support for each model, few studies compared these models or examined different functions of DSH (Briere & Gil, 1998; Gratz, 2000; Klonsky & Olino, 2008; Nock & Prinstein, 2005). Based on limited research, the most frequently supported models/functions of DSH are affect regulation/anxiety reduction, communication/interpersonal boundaries, punishment, sensation-seeking/reward, and dissociation (Briere & Gil, 1998; Chapman et al., 2006; Gratz, 2000; Klonsky & Olino, 2008; Nock & Prinstein, 2005). Of these studies, males are not well represented. Thus, little information exists on the functions of male DSH.

Purpose and Hypotheses of Current Study

The purposes of the current study were to explore frequency and types of DSH among adjudicated adolescent males, examine the relationship between DSH and common mental health concerns and diagnoses in this population, compare coping skills of males who engaged in DSH to those who did not, and explore which functions of DSH are most frequently reported among adjudicated male youth. Descriptive statistics of frequency and types of DSH are presented to address the first purposes. Males were expected to engage in some forms of DSH more often than other types. Specifically, the first hypothesis was that males will report significantly more frequent burning behaviors than cutting behaviors. This hypothesis was based on previous findings that males who self-harm are more likely to engage in self-burning or punching a wall than cutting (Claes et al., 2007; Klonsky & Muehlenkamp, 2007; Taylor, 2003). The second hypothesis was that males who engaged in DSH would be more likely to report higher levels of psychopathology such as aggression, anger, social alienation, emotional lability, interpersonal problems, and social adaptation problems than youth who did not engage in DSH. Previous studies indicated that all of these factors were higher among individuals that self-harm than control groups (Briere & Gil, 1998; Claes et al., 2007; Conterio & Lader, 1998; Graff & Mallin, 1967; Gratz et al., 2002; Gratz & Roemer, 2004; Haines et al., 1995; Heath et al., 2008; Herpertz et al., 1997; Klonsky et al., 2003; Klonsky & Olino, 2008; Ross & Heath, 2003).

The third hypothesis was that, compared to a control group, levels of anger, social alienation, interpersonal problems, poor social adaptation, and emotional lability among males that self harm will be higher than levels of aggression (Briere & Gil, 1998; Claes et

al., 2007; Conterio & Lader, 1998; Graff & Mallin, 1967; Gratz et al., 2002; Gratz & Roemer, 2004; Haines et al., 1995; Heath et al., 2008; Herpertz et al., 1997; Klonsky et al., 2003; Klonsky & Olino, 2008; Ross & Heath, 2003). Aggression was predicted to be lower than the other factors because DSH tends to be more self- than other-directed (Ross & Heath, 2003).

The fourth hypothesis was that males who engaged in DSH are more likely to meet criteria for mood disorders and anxiety disorders than males who did not. Previous research indicated that these disorders are the most frequently diagnosed Axis I disorders among individuals that self-harm (Conterio & Lader, 1998; Dulit et al., 1994; Garrison et al., 1993; Klonsky et al., 2003; Klonsky & Olino, 2008; Osuch et al., 1999; Pao, 1969; Pattison & Kahan, 1983; Raine, 1982; Rosenthal et al., 1972; Simpson, 1975; Suyemoto, 1998; White Kress, 2003). The fifth hypothesis was that males who engaged in DSH would be less likely to meet criteria for attention deficit/hyperactivity disorder or oppositional defiant/conduct disorder (Conterio & Lader, 1998; Dulit et al., 1994; Garrison et al., 1993; Klonsky et al., 2003; Klonsky & Olino, 2008; Osuch et al., 1999; Suyemoto, 1998; White Kress, 2003). Research has not shown a relationship between these disorders and DSH.

The sixth hypothesis was that males who engaged in DSH would report less frequent use of healthy coping skills and greater unhealthy coping skills than males who did not self-harm. Based on several models of DSH, people that self-harm tend to engage in DSH instead of healthier coping skills (Chapman et al., 2006; Evans et al., 2005; Haines & Williams, 1997; Laye-Gindhu & Schonert-Reichl, 2005; Lion & Conn, 1982; Nock et al., 2008; Ross & McKay, 1979; Walsh & Rosen, 1988). The seventh hypothesis was that

males who engaged in DSH would be more likely to report DSH functions of Anxiety Reduction/Affect Regulation, Interpersonal Boundaries (i.e., Communication), and Social/Sensation (i.e., Behavioral) reasons than Punishment, Antisucide, Sexual, or Dissociation reasons. These functions of DSH have received the most support in previous studies (Allen, 1995; Doctors, 1981; Favazza, 1989; Gardner & Gardner, 1975; Gratz, 2003; Herpertz, 1995; Ivanoff et al., 2001; Klonsky & Olino, 2008; Laye-Ginhu & Schonert-Reichl, 2005; Nelson & Grunebaum, 1971; Simeon et al., 1992; Suyemoto, 1998).

The eighth hypothesis was that, among participants who self-harm, those who report more problems with emotional lability would be more likely to engage in DSH for affective regulation reasons. The ninth hypothesis was that, among participants who self-harm, those who report more problems with interpersonal relationships would be more likely to engage in DSH to cope with interpersonal conflicts. The tenth hypothesis was that, among participants who self-harm, those who report elevated feelings of alienation and boredom would be more likely to using DSH for social/sensation-seeking reasons. Research has shown that individuals who engage in DSH report greater emotional lability, more interpersonal problems, and greater feelings of isolation than controls and are likely to use self-harm to cope with these difficulties (Alderman, 1997; Allen, 1995; Baiker & Arnold, 1997; Conterio & Lader, 1998; Crowe & Bunclark, 2000; de Young, 1982; Derouin & Bravender, 2004; Doctors, 1981; Favazza, 1989; 1992; 1998; Gratz, 2003; Hawton, 1989; Himber, 1994; Ivanoff et al., 2001; Laye-Ginhu & Schonert-Reichl, 2005; Leinbenluft et al., 1987; MacAniff-Zila & Kiselica, 2001; Nelson & Grunebaum,

1971; Novotny, 1972; Pattison & Kahan, 1983; Pawlicki & Gaumer, 1993; Roy, 1978; Schwartz et al., 1989; Shearer, 1994; Simeon et al., 1992; Suyemoto, 1998; Yip, 2005).

CHAPTER 3

METHODOLOGY

Participants

The sample included 103 adjudicated male youth aged 13-18 years ($M = 15.7$, $SD = 1.13$) housed at the Spring Mountain Youth Camp (SMYC). This facility is a secure, residential, correctional camp for male youth from Clark County, Nevada who were adjudicated for serious or repeated delinquent acts. Participants were Hispanic (39.8%, $n = 41$), African American (29.1%, $n = 30$), European-American (18.4%, $n = 19$), multiracial (7.8%, $n = 8$), Asian American (1.0%, $n = 1$), and Native American (1.0%, $n = 1$). Three participants (2.9%) did not report ethnicity. Length of stay ranged from three weeks to two years ($M = 5.17$ months, $SD = 10.26$). Data from Clark County Department of Juvenile Justice Services (DJJS) (2008) on household composition of all youth referred to DJJS in 2008 indicated that 37% were living in single mother households, 21% were living in intact families, 9% were living with one biological parent and one non-biological parent, 7% were living in single father households, and 26% were living with siblings or extended family members or in out-of-home placements.

All youth at SMYC were involved in ongoing court proceedings. The primary investigator did not collect data on participants' specific offenses because of concern that parents or youth would be unwilling to participate if disclosed offenses could potentially affect youth's legal situations. Data available from DJJS (2008) indicated the most frequent serious charges of youth referred to DJJS were burglary, use of a controlled substance, malicious destruction of property, robbery, possession of a stolen vehicle,

graffiti, grand larceny, assault with a deadly weapon, home invasion, and possession of a dangerous weapon.

Measures

Questionnaire Measures

Deliberate Self-Harm Inventory (DSHI)

The DSHI is a 17-item self-report measure of duration, frequency, and severity of deliberate self-harm (Gratz, 2001). The DSHI assesses cutting, burning skin with fire or chemicals, carving, scratching, biting, inserting sharp objects under the skin, intentionally breaking bones, head banging, hitting, and preventing wounds from healing. The DSHI was used to assess for frequencies and types of DSH. The DSHI was adapted to include self-tattooing as well.

The DSHI is the only psychometrically validated instrument that assesses duration, frequency, and types of DSH. Gratz (2001) reported that internal consistency for the DSHI was high ($\alpha = .82$). Test-retest reliability over 2-4 weeks was adequate ($\phi = .68, p < .001$). The DSHI has shown good convergent and criterion validity. The DSHI correlated moderately with other measures of DSH and BPD. The DSHI also has shown good discriminant validity by differentiating DSH from suicide attempts (Gratz, 2001).

Adolescent Psychopathology Scale (APS)

The APS is a 346-item self-report measure of current and past psychopathology symptoms in adolescents (Reynolds, 1998). The APS has subscales for 20 internalizing and externalizing disorders (Attention Deficit/ Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder, Adjustment Disorder, Substance Abuse Disorder,

Anorexia Nervosa, Bulimia Nervosa, Sleep Disorder, Somatization Disorder, Panic Disorder, Obsessive-Compulsive Disorder, Generalized Anxiety Disorder, Social Phobia, Separation Anxiety Disorder, Posttraumatic Stress Disorder, Major Depression, Dysthymic Disorder, Mania, Depersonalization Disorder, and Schizophrenia), 5 personality disorders (Avoidant Personality Disorder, Obsessive-Compulsive Personality Disorder, Borderline Personality Disorder, Schizotypal Personality Disorder, and Paranoid Personality Disorder), 11 psychosocial problems (Self-Concept, Psychosocial Substance Use Difficulties, Introversion, Alienation-Boredom, Anger, Aggression, Interpersonal Problems, Emotional Lability, Disorientation, Suicide, and Social Adaptation), and 4 validity types (Critical Item Endorsement, Lie Response, Consistency Response, and Infrequency Response). This measure provides scores for symptoms and severity of symptoms for each disorder/problem subscale. The APS assesses recent (i.e., over the past month) and past symptoms (i.e., over the past 6 months, over the past year).

Scores on the APS have shown moderate to high internal consistency with a median Cronbach's α of .87 in a clinical population (Reynolds, 1998). Scores on the APS correlated moderately with other scores on measures of psychopathology such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), Reynolds Adolescent Depression Scale (RADS), Beck Depression Inventory (BDI), and Suicidal Ideation Questionnaire (SIQ), which suggests good convergent validity (Reynolds, 1998). The APS also demonstrated good discriminant validity by differentiating measures of IQ and social desirability such as the Marlowe-Crowne Social Desirability Scale (MCSDS-SF) (Reynolds, 1998). Two-week test-retest reliability was .76-.89 for the Clinical and Personality Disorder scales (Reynolds, 1998).

The APS was used to assess psychopathology symptoms and their severity to investigate the relationship between DSH and aggression, anger, social alienation, emotional lability, interpersonal problems, and social adaptation. This instrument was selected because it measures past and present symptoms, which is consistent with the DSHI that assesses for current and past DSH.

Interview Measures

Functional Deliberate Self-Harm Assessment (FDSHA).

The FDSHA is an 85-item structured clinical interview that assesses for positive, negative, or neutral consequences of DSH as well as emotions associated with DSH (Klonsky, 2006). Consequences and emotions associated with DSH are categorized into 7 DSH functional models: Punishment, Antisucide, Sexual, Anxiety Reduction/Affect Regulation, Dissociation, Interpersonal Boundaries/ Communication, and Social/Sensation-seeking (Behavioral). Participants rated each consequence and emotion during DSH as “Never,” “Rarely,” “Sometimes,” “Usually,” or “Always.” Participants also rated each consequence as “Positive,” “Negative,” “Neutral,” or “Positive and Negative.”

Reliability and validity statistics were not reported on this measure as it was developed as a part of an exploratory study on functions of self-harm and had a small sample of participants who engaged in DSH ($N=39$). This instrument was selected because it is the only measure to assess consequences of, and emotions associated with, DSH. This measure was administered only to participants who reported DSH.

Coping Responses Inventory-Youth Form (CRI-Y).

The CRI-Y is a 58-item measure of 8 types of coping responses in adolescents aged 12-18 years (Moos, 1993). This instrument can be administered as a self-report measure or an interview. In this study, the CRI-Y was administered as an interview. The CRI-Y has 8 subscales: 4 approach or healthy coping responses (i.e., Logical Analysis, Positive Reappraisal, Seeking Guidance and Support, and Problem Solving) and 4 avoidance or unhealthy coping responses (i.e., Cognitive Avoidance, Acceptance or Resignation, Seeking Alternative Rewards, and Emotional Discharge). The measure also has 10 items that assess how a youth appraises a stressor and its likely outcome.

Scores on the CRI-Y have shown moderate internal consistency with Cronbach's α ranging from .55-72 among male youth (Moos, 1993). Scores on the CRI-Y were partially correlated with measures of stressor resolution (Weinberger Adjustment Inventory), anxiety (Children's State-Trait Anxiety Inventory), and behavior problems (adapted from Deviant Behavior Scale). Correlations were moderate, which suggest good convergent validity (Moos, 1993). Test-retest reliability correlations of scores after a 12- to 15-month interval averaged .29 among male youth (Moos, 1993). The CRI-Y was used to assess coping styles among youth who engage in DSH and those who do not. This instrument was selected because it measures coping styles in youth with psychological, emotional, and behavior problems.

Mini International Neuropsychiatric Interview for Children and Adolescents (M.I.N.I.-Kid).

The M.I.N.I.-Kid is a brief structured diagnostic interview to assess DSM-IV psychiatric disorders in children and adolescents (Sheehan, Lecrubier, Sheehan, Amorim,

Janavs, Weiller, et al., 1998). This measure, which is based on the Mini International Neuropsychiatric Interview (M.I.N.I.) for adults, covers 23 psychiatric disorders including mood, anxiety, eating, and childhood disorders that youth are currently experiencing. The M.I.N.I.-Kid also assesses for history of Major Depressive Disorder, Bipolar Disorder I and II, and Panic Disorder.

The M.I.N.I. was evaluated for interrater reliability, sensitivity, and specificity (Sheehan et al., 1998). Ratings on the M.I.N.I. were compared to ratings from the Structured Clinical Interview for DSM-III-R-Patient Version (SCID-P) among psychiatric patients and nonclinical controls. Cohen's kappa, used to assess interrater reliability, ranged from .43 (Current drug dependence) to .90 (Anorexia) across 17 disorders with most kappa values above .50. Sensitivity (true positive predictive ability) was .70 or higher for all but three disorders (Dysthymia, Obsessive-Compulsive Disorder, and Current Drug Dependence). Specificity (true negative predictive ability) was .85 or higher across all diagnoses. The M.I.N.I.-Kid was used to assess psychiatric diagnoses in this study. This instrument was selected because it is a brief structured interview that can be used to diagnose several mental disorders and can be used with youth.

Procedure

Participants were recruited from the Spring Mountain Youth Camp (SMYC), a Clark County Department of Juvenile Justice facility that houses 100 adjudicated males aged 12-18 years. Youth stay at SMYC between a few weeks to two years, and new youth are admitted and discharged each week. All youth at SMYC were eligible. Parents of eligible youth were contacted via mail over the course of 3 months and invited to allow their sons

to participate in the study. The mailing included a letter of recruitment, two copies of the parental permission forms (one to sign and return and one to keep), and a stamped, self-addressed envelope to return the signed copy of the parental permission form. Parents who did not return the parental permission form after two weeks were contacted via telephone to see if they were interested in allowing their son to participate in the study. Parents of 114 youth permitted their sons' participation. Four youth aged 18 years consented to participate.

Participants were gathered in a quiet room with individual carrels on the SMYC campus in groups of 10-15 individuals. Each carrel had a divider to ensure that other individuals could not examine their responses. The researcher read a script describing the study and procedures for the questionnaire session. Participants were informed that they could decline to participate at any time and for any reason. They were also instructed to raise their hand if they had questions or concerns about the study. Those who declined to participate in the study were allowed to sit quietly in their carrel until all participants completed their surveys. Fifteen males declined to participate in the study. Demographic characteristics on these individuals were not available as they did not complete any of the survey material.

Participants were given packets that included two copies of the assent form (one to sign and one to keep), a sheet with their name and identification number on it to contact participants for the second half of the study, the Demographic Information form, the Deliberate Self-Harm Inventory (DSHI), and the Adolescent Psychopathology Scale (APS). The researcher reviewed the assent form (and the consent form for 18-year-olds). Youths were instructed to read the form and sign it if they were willing to participate.

The researcher and a trained research assistant were available to answer questions.

Participants were allowed 2 hours to answer the questionnaires. Participants who were fatigued were offered brief breaks during the questionnaire sessions.

For the second phase of the study, participants who reportedly engaged in DSH were invited to participate in an interview session. Due to the time lapse between questionnaire and interview sessions (1-3 weeks), some participants had been transferred or released. Frequency of DSH among participants with a history of DSH varied greatly, $M = 48.78$, $SD = 120.30$, $Mdn = 7.25$. The primary researcher recruited for participants with higher frequencies of DSH, equal to or greater than 7 incidents (based on the median). This exclusion criteria was used to obtain a more homogeneous sample. Of participants remaining at SMYC and those with a frequency of 7 or more incidents of DSH, 22 participants were chosen to be interviewed. The researcher informed these participants that they would not be penalized for declining to participate in the second phase of the study. One participant declined to participate in the second phase of the study.

Twenty-one participants who reported no history of DSH were chosen to participate in an interview session as the control group. Similar to the DSH, some participants had been transferred or released between questionnaire and interview sessions so interviewees were selected from participants who remained. These participants were informed that they would not be penalized for declining to participate in the second phase of the study. None of these participants declined.

Participants in the two interview groups were not matched by age to increase potential participants for the control group. More participants reported a history of at least

one incident of DSH ($n = 68$) compared to participants reporting no history of DSH ($n = 35$). A one-way analysis of variance revealed no age difference between the two groups.

The interview sessions occurred within 3 weeks of the questionnaire session. Participants met individually in a quiet, private room with the researcher and a trained research assistant. The researcher read the script to describe the study and procedures for the interview sessions (See Appendix D). The researcher reviewed the assent form for the interview session and answered questions about the study. After signing the assent form, participants were given a copy of the assent form, or consent form if they were 18 years old, to keep. The researcher administered the Functional Deliberate Self-Harm Assessment (FDSHA), Mini International Neuropsychiatric Interview for Children and Adolescents (M.I.N.I.-Kid), and Coping Response Inventory-Youth (CRI-Y) to participants in the experimental group and the M.I.N.I.-Kid and the CRI-Y to participants in the control group. The interviews lasted 60-90 minutes and included breaks for fatigued participants. Participants were given candy and soda after completing the interview.

Assessment Adherence

A research assistant, trained by the primary researcher, rated the interviews. The research assistant observed all 43 interview sessions and rated them for adherence to assessment protocol. The rating form for assessment integrity is in Appendix E. Adherence was measured by assessing how closely the primary researcher followed the protocol for the CRI-Y, M.I.N.I.-Kid, and separate sections of FDSHA (if participant had a history of DSH). Response choices were 0="Not Applicable," 1="Not at All," 2="A Little," 3="Somewhat," 4="A Lot," and 5="Completely." The total for each form was

added up and divided by the total possible points (10 points for participants with no history of DSH and 40 points for participants with DSH history). Assessment adherence was 100% for all sessions.

CHAPTER 4

RESULTS

Descriptive Statistics

The sample contained 103 participants, of which 66% reported at least one incident of DSH. Frequency of DSH incidents varied greatly, $M = 48.78$, $SD = 120.30$. The median number of incidents was 7.25. Descriptive statistics of DSH by age and ethnicity are reported below to provide more information on the sample. By age group, 68.8% ($n = 16$) of 13-14-year olds, 65.6% ($n = 61$) of 15-16-year-olds, and 65.4% ($n = 26$) of 17-18-year-olds reported at least one incident of DSH. A Chi-square test for independence indicated no significant association between age group and history of DSH. By ethnicity, 60% ($n = 30$) of African American participants, 47.4% ($n = 19$) of European-American participants, 85.4% ($n = 41$) of Hispanic participants, and 46.2% ($n = 13$) of Asian American, Native American, or multiracial participants or those who did not report ethnicity reported at least one incident of DSH. A Chi-square test for independence was used to analyze the relationship between ethnic groups. Asian American, Native American, and multiracial participants were excluded due to small sample size. A significant association was found between ethnic group and history of DSH, $\chi^2 (2, n = 90) = 10.41, p = .01$, Cramer's $V = .34$. More African American (60.0%) and Hispanic (85.4%) participants reported DSH history than Caucasian (47.4%) participants.

Frequencies of Different DSH Types

The most frequently reported types of DSH were “carving words (i.e., scratching or cutting words into the skin)” (30% of participants), “self-tattooing” (27.2%), “cutting wrist, arms, or other areas” (17.5%), “burning with a lighter” (17.5%), and “rubbing sandpaper or eraser on self” (17.5%).

The first hypothesis was that males would engage in more burning than cutting. This hypothesis was tested using dependent samples t test between frequency of cutting and frequency of burning behaviors. The category of “cutting” included participants who answered “yes” to DSHI items of cutting, carving words into one’s skin, or carving pictures or designs into one’s skin ($M = 5.87, SD = 32.39$). Participants in the “burning” group endorsed DSHI items of burning self with a cigarette or burning self with a lighter ($M = 5.25, SD = 27.91$). No statistically significant difference was found between the two frequencies of DSH behavior. The hypothesis was not supported.

Differences in Psychopathology among Males with and without a History of DSH

The second hypothesis was that males who engage in DSH would be more likely to report psychopathology than youth who did not engage in DSH. A one-way between-groups multivariate analysis of variance examined whether level of psychopathology differed among males depending on DSH history. History of DSH was the independent variable and scores on the APS, including Aggression, Anger, Social Alienation, Alienation-Boredom, Emotional Lability, Interpersonal Problems, and Social Adaptation subscales were the dependent variables. Preliminary assumption testing was conducted to

check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. Scores on the APS-Interpersonal Scale correlated highly with scores on the APS-Anger Scale ($r = .90$), so the APS-Interpersonal Scale was excluded. No other serious violations of assumptions were found. A statistically significant difference was found between participants with a history of DSH and participants without a history of DSH on the combined dependent variables ($F(3, 97) = 5.00, p < .001$). Males with a history of DSH had higher mean scores on all dependent measures. The dependent variables are further examined below.

The third hypothesis was that males who engage in DSH would report higher levels of anger, social alienation, interpersonal problems, poor social adaptation, and emotional lability than levels of aggression, when compared to their counterparts. This hypothesis was tested by examining dependent variables from the previous MANOVA separately using a Bonferroni adjusted alpha level of .01. The hypothesis was partially supported. Social Adaptation and Alienation-Boredom were statistically significant, $F(1, 100) = 8.46, p = .004$ and $F(1, 100) = 13.31, p < .001$, respectively. Males with a history of DSH reported poorer social adaptation and greater feelings of alienation and boredom than individuals with no history of DSH (See Table 2). Emotional Lability and Aggression were also statistically significant, $F(1, 100) = 6.74, p = .01$, and $F(1, 100) = 7.12, p < .01$, respectively. Individuals with a history of DSH reported greater emotional lability and higher levels of aggression than individuals with no history of DSH. No significant difference was found among the two groups on Anger scores.

Associations between History of DSH and Types of Mental Health Disorders

The fourth hypothesis was that males who engage in DSH were more likely to meet criteria for mood disorders (i.e., Major Depressive Disorder, Dysthymia, or Bipolar Disorder) and anxiety disorders (i.e., Panic Disorder, Social Phobia, Obsessive Compulsive Disorder, Posttraumatic Stress Disorder, or Generalized Anxiety Disorder) than males who did not. A Chi-square test for independence indicated that significantly more males with a history of DSH had diagnoses of mood and anxiety disorders (76.2%) than males with no history of DSH (31.8%), $\chi^2 (1, n = 43) = 8.50, p = .004, \phi = .45$.

The fifth hypothesis was that males who engaged in DSH would be less likely to meet criteria for attention deficit/hyperactivity or oppositional defiant/conduct disorder (i.e., ADHD Combined, ADHD Inattentive, ADHD Hyperactive, Oppositional Defiant Disorder, Conduct Disorder, Alcohol Use, Alcohol Dependence, Substance Use, or Substance Dependence). A Chi-square test for independence indicated no significant association between history of DSH and externalizing disorders diagnoses. This hypothesis was thus unsupported.

Differences in Types of Coping Skills Used by Males with and without a History of DSH

The sixth hypothesis was that males with a history of DSH would report less frequent use of healthy coping skills (CRI-Y subscales of Logical Analysis, Positive Reappraisal, Seeking Guidance and Support, and Problem Solving) and greater unhealthy coping skills (CRI-Y subscales of Cognitive Avoidance, Acceptance or Resignation, Seeking

Alternative Rewards, and Emotional Discharge) than males who did not self-harm. The first part of the hypothesis was tested using MANOVA with DSH history as the independent variable and 4 types of healthy coping skills as dependent variables. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. No serious violations of assumptions were noted. A statistically significant difference was found between participants with a history of DSH and participants without a history of DSH on the combined dependent variables, $F(3, 40) = 2.98, p = .03$. When the results for the dependent variables were considered separately using a Bonferroni adjusted alpha level of .013, no differences were statistically significant. The only dependent variable to approach significance was CRI-Seeking Support and Guidance, $F(1, 42) = 6.29, p = .016$. Males with a history of DSH reported higher use of seeking support and guidance ($M = 48.62, SD = 8.55$) than individuals with no history of DSH ($M = 42.86, SD = 6.39$).

The second part of the hypothesis was similarly tested using MANOVA with DSH history as the independent variable and 4 types of unhealthy coping skills as dependent variables. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. No serious violations of assumptions were noted. No statistically significant difference was found between participants with a history of DSH and participants without a history of DSH on the combined dependent variables, but the results approached significance at the $p = .05$ level, $F(3, 40) = 2.52, p = .06$. If results for the dependent variables were considered separately using a Bonferroni adjusted alpha

level of .013, CRI-Emotional Discharge was statistically significant, $F(1, 42) = 9.80, p = .003$. Again, males with a history of DSH reported higher use of emotional discharge ($M = 54.90, SD = 8.21$) than individuals with no history of DSH ($M = 47.32, SD = 7.69$). Males with a history of DSH reported higher frequency of use on all 8 scales of healthy and unhealthy coping skills (see Table 3).

Examination of Functions of DSH and Associations with Types of Psychopathology

The seventh hypothesis was that males with a history of DSH would be more likely to report the function of DSH as Anxiety Reduction/Affect Regulation, Interpersonal Boundaries (i.e., Communication), and Social/Sensation (i.e., Behavioral) than Punishment, Antisucide, Sexual, or Dissociation. Descriptive statistics related to reported functions of DSH explored this hypothesis. This hypothesis was partially supported. Participants had highest scores on Anxiety Reduction/Affect Regulation, Punishment, Dissociation, and Social/Sensation (See Table 4). Participants had lower scores on Interpersonal Boundaries, Antisucide, and Sexual.

The eighth hypothesis was that, among males with a history of DSH, problems with emotional lability would be associated with use of DSH for affect regulation. This hypothesis was examined using simple regression to test if scores on the APS-Emotional Lability subscale predicted Affect Regulation as a function of DSH. The overall model was not statistically significant.

The ninth hypothesis was that, among males with a history of DSH, problems with interpersonal relationships would be associated with the interpersonal boundaries model

of DSH. This hypothesis was examined using simple regression to test if scores on the APS-Interpersonal Problems subscale predicted Interpersonal Boundaries as a function of DSH. The overall model was not statistically significant.

The tenth hypothesis was that, among males with a history of DSH, feelings of alienation and boredom would be associated with the social/sensation-seeking model of DSH. This hypothesis was examined using simple regression to test if scores on the APS-Alienation-Boredom subscale predicted Social-Sensation Seeking as a function of DSH. The overall model was not statistically significant.

CHAPTER 5

DISCUSSION

This study explored characteristics of DSH and associated mental health concerns and coping skills among 103 adjudicated adolescent males. Incidence of DSH among male delinquents (66%) was found to be much higher than the 14.7-46% range reported in previous studies (Belknap & Holsinger, 2006; Matsumoto et al., 2005). One explanation for this difference may be how DSH was measured. The DSHI in the current study assessed for 17 types of self-harming behavior; previous research measured only self-cutting or self-burning. The broader DSH inclusion criteria may have captured more types of self-harming behavior that were missed in other studies.

Incidence of DSH was significantly associated with ethnicity. African American and Hispanic participants were more likely to report at least one incident of DSH than European American participants. These results contradict previous findings that DSH occurs more frequently among European Americans (Conterio & Lader, 1998; Favazza & Conterio, 1989; Ross & Heath, 2002). None of these studies, however, included an incarcerated population. African American and Hispanic individuals tend to be overrepresented in incarcerated populations and this was the case in this sample (Bureau of Justice, 2009; Office of Juvenile Justice and Delinquency Prevention, 2006).

Carving words and self-tattooing were the most frequently reported types of DSH. Participants reportedly carved words or pictures on their skin almost twice as much as cutting their arms or wrists or burning themselves with a lighter. Previous research indicated that males who self-harmed engaged in more burning than cutting behavior

(Claes et al., 2007; Klonsky & Muehlenkamp, 2007; Taylor, 2003). The current data, however, did not support this trend; frequencies of cutting and burning behaviors were not significantly different. A possible explanation for these findings is that carving words and pictures were included in analyses as types of cutting in this study. These behaviors were the most frequently reported types of DSH. Previous researchers may not have included carving words or pictures as a type of cutting. These researchers may have underestimated frequency of cutting among males and endorsed higher rates of burning than cutting behavior (Claes et al., 2007; Klonsky & Muehlenkamp, 2007; Taylor, 2003).

The data supported previous findings that individuals who self-harm report poorer social adaptation, more feelings of alienation and boredom, and greater emotional lability than controls (Briere & Gil, 1998; Claes et al., 2007; Conterio & Lader, 1998; Gratz et al., 2002; Gratz & Roemer, 2004; Haines et al., 1995; Heath et al., 2008; Herpertz et al., 1997; Klonsky et al., 2003; Klonsky & Olino, 2008; Ross & Heath, 2003). Males with a history of DSH did not have significantly higher levels of anger but reported significantly more aggression than those without a DSH history, contrary to the hypothesis. These findings were unexpected because previous research suggested that adolescents that self-harm endorsed higher levels of hostility toward themselves and others, but tend to physically hurt themselves only (Ross & Heath, 2003). Ross and Heath (2003), however, found that males, regardless of DSH history, were more likely to act on their hostility than females.

Participants with a history of DSH were more likely than those without a history to meet criteria for a mood or anxiety disorder. There was no significant difference, however, regarding diagnoses of externalizing disorders such as ADHD, conduct/

oppositional defiant disorders, or substance use/dependence. Adjudicated adolescent males with a history of DSH may thus experience more internalizing disorders, report greater emotional lability, and are less socially adaptive and more isolated and alienated than their peers. They did not, however, significantly differ from their peers with respect to anger or externalizing disorder.

Results from this study support the experiential avoidance model (Chapman et al., 2006). Individuals who engage in DSH use self-harm to avoid uncomfortable emotional experiences such as depression, anxiety, or loneliness. These individuals appear to utilize DSH instead of behaviors associated with externalizing disorders (i.e., fighting with peers or family, engaging in delinquent or rule-violating behavior, destruction to physical property, etc.) or healthier coping behavior. Adjudicated adolescent males with a history of DSH may thus report higher levels of internalizing disorders and associated mental health concerns than their peers, but not externalizing disorders or emotions associated with behavioral problems such as anger.

An examination of the relationship between healthy and unhealthy coping skills and DSH unexpectedly yielded greater use of combined healthy coping skills and combined unhealthy coping skills by participants with a history of DSH. Only Emotional Discharge, an unhealthy coping skill, was significantly higher among the DSH group. Participants with a history of DSH, however, averaged high levels across all reported coping skills. These findings partially support previous research that individuals who self-harm utilize more unhealthy coping skills and fewer healthy coping skills (Chapman et al., 2006; Evans et al., 2005; Haines & Williams, 1997; Nock et al., 2008). Evans and colleagues

(2005) found that adolescents who self-harmed were less likely to ask for help and had fewer people to talk to about thoughts of hurting themselves.

One study, however, indicated that individuals who self-harm report similar use of coping skills as controls (Brown, Williams, & Collins, 2007). Brown and colleagues (2007) explored differences in emotional dispositions and coping strategies among college students with a history of recent DSH, past DSH, or no DSH and found no significant differences in use of maladaptive or adaptive coping skills among these groups. One possible interpretation of these findings is that adjudicated males with a history of DSH use healthy and unhealthy coping skills as much or more frequently than their counterparts, but these coping skills are not perceived as sufficient for managing problems. Deliberate self-harm may seem to be the most effective way to manage emotions associated with problems for this group.

Reasons for this perceived ineffectiveness may be extrapolated from a study by Nock and Mendes (2008) on problem-solving abilities of adolescents that self-harm. In this study, the self-harm group did not differ from controls in number of solutions to social problems but chose more negative solutions and rated themselves less effective at implementing solutions. These findings may apply to the current study in that the self-harm group may not implement healthy coping skills effectively despite similar frequency of healthy and unhealthy coping skills. Adolescents who self-harm may attempt the healthy coping skill of seeking guidance and support but might not specifically ask for help or may not feel understood when explaining their problem. Further research could examine the relationship between coping skills and DSH, including possible moderators such as self-efficacy.

Current findings also fit the experiential avoidance model (Chapman et al., 2006). Individuals may engage in self harm because high emotional arousal caused by stressful situations hinders them from utilizing healthier coping skills. These individuals may be cognitively aware of healthy coping skills when their emotional arousal is low, but are unable to access or implement these strategies when emotionally aroused. Individuals who self-harm could have awareness of alternate coping strategies and use them at times of low stress, but rely on DSH when they feel emotionally overwhelmed.

Investigation of the functions of DSH yielded mixed results. As expected, anxiety reduction/affect regulation and social/sensation-seeking were among the most frequently and relevant reported functions of DSH. Self-punishment and management of dissociation, however, were also among the most reported reasons for self-harm. Self-punishment may be more frequently reported in an adjudicated population because, compared to the general population, these individuals have disobeyed rules or laws and may feel more guilt and use DSH more for punishment. Research on dissociation management as a function of DSH suggests that individuals with PTSD are more likely to use DSH to cope with dissociation (Zlotnick et al., 1996). Because PTSD occurs more frequently in delinquents, dissociation management may be a more pertinent and common function of DSH in adjudicated adolescent males than the general population (Steiner, Garcia, & Matthews, 1997).

The experiential avoidance model also accounts for DSH as a function of self-punishment or managing dissociation (Chapman et al., 2006). Chapman and colleagues proposed that individuals who use DSH for self-punishment feel that they deserve to be punished for real or imagined offenses. If they feel that they have not been “punished,” it

creates high emotional arousal. Self-harm serves to relieve high emotional arousal by “punishing” the individual. Deliberate self-harm can also be used to manage dissociative states by distracting one from dissociation, another state of high emotional arousal. Dissociation often occurs when an individual feels overwhelmed by intensity or complexity of emotion. Deliberate self-harm provides a new sensation to distract one from dissociation/high emotional arousal.

Scores on the APS scale of emotional lability did not significantly predict anxiety reduction/affect regulation as a function of DSH. Also, scores on the APS scale of interpersonal problems did not significantly predict interpersonal boundaries as a function of DSH, and scores on the APS scale of feelings of alienation and boredom did not significantly predict social/sensation-seeking as a function of DSH. These results were surprising because adjudicated males with a history of DSH reported higher scores on the APS subscales of Emotional Lability and Alienation-Boredom. In addition, anxiety reduction/affect regulation and social/sensation-seeking were among the most frequently reported functions of DSH. One possible explanation for these findings might be that participants who use DSH for these specific functions do not have as many problems in these areas. Participants’ scores on the associated APS subscale might thus be lower because DSH is being used to manage this problem. Further research is necessary to explore this explanation.

Limitations of Current Study and Future Research Suggestions

The current study included strong representation of Hispanic and African American adjudicated adolescent males. Information on DSH in other racial/ethnic groups, however, was less available. Future studies with greater representation of different

ethnicities among adjudicated adolescent males would increase the depth of understanding of DSH among this population.

Adolescents committed to SMYC tend to be repeat offenders or have committed more severe crimes. The sample may have been skewed toward more pathological mental health concerns and behavior than the general adjudicated adolescent population. This limitation could be addressed in future studies by assessing for DSH in adjudicated adolescent males in other areas of the juvenile justice system such as those on probation or those being held in short-term detention.

Assessment of coping skills use in the current study was based on self-report only. These findings may not reflect how well adjudicated adolescent males actually use these skills. Further studies would benefit from using multiple assessment sources for coping skills. One way to supplement self-report of coping skills use would be to observe youth in various situations via trained personnel who rate them for effectiveness in implementing these skills.

Finally, the current study explored functions of DSH with a small sample of adjudicated adolescent males. Future research could expand on the findings by including a larger sample of participants with DSH history. A larger sample would help determine if specific functions of DSH, especially those less common in the non-adjudicated population such as self-punishment and coping with dissociation, continue to be more frequently reported in an adjudicated adolescent population. Future studies might also clarify the relationship between associated mental health concerns (such as emotional lability and alienation/boredom) and how effective DSH is in managing these concerns.

Clinical and Research Implications

Findings from the current study provide direction for assessment and treatment of adjudicated adolescent males. Mental health professionals should include DSH assessment when working with this population because findings from the current study indicate higher incidence of DSH than past research (Arnold & Magill, 1996; Conterio & Lader, 1998; Favazza, 1999; Hawton et al., 2002; Huband & Tantam, 1999; Jacobson et al., 2008; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004; Suyemoto, 1998). Clinicians may neglect to assess adolescent males for DSH because DSH has primarily been associated with adolescent females. Assessment of DSH needs to include carving words and self-tattooing. These self-harming behaviors were most frequently reported in this study, but clinicians may not ask about these behaviors because they do not fit the traditional concept of DSH (i.e., self-cutting) (Briere & Gil, 1998; Favazza & Conterio, 1989; Favazza et al., 1989; Osuch et al., 1999; Ross & Heath, 2002). Current findings indicate that DSH is a significant problem among Hispanic and African American adjudicated adolescent males. Clinicians may underestimate the need for DSH assessment in these populations because previous research suggested that DSH predominately occurs in Caucasian populations (Klonsky & Muehlenkamp, 2007).

Mental health professionals should be aware that DSH often occurs in individuals with poor social adaptation, feelings of loneliness/alienation, mood lability, and internalizing disorders. These mental health concerns may signal professionals to assess for DSH. Results from this study also suggest that adjudicated adolescent males with a history of DSH report similar or greater use of healthy and unhealthy coping skills than their counterparts. Clinicians should not assume that DSH does not occur in adjudicated

adolescent males who report healthy coping skills. These findings emphasize the importance of assessing for DSH even among individuals with other ways to cope with problems.

Current findings on coping are also relevant for treatment because teaching adolescents other coping skills may not be sufficient. Results imply that adolescents who self-harm have knowledge of healthier coping skills and may report using them, but may not find them effective enough to quit self-harming. Individuals who self-harm may need to improve self-efficacy in implementing coping skills (Nock & Mendes, 2008). Techniques such as role-playing and providing feedback on use of healthy coping skills might be necessary to treat DSH.

Results on frequently reported functions of DSH suggest that treatment should focus on finding healthier ways to manage affect, including feelings of guilt associated with self-punishment and dissociative experiences. One intervention to improve affect management is emotion regulation training (Bauserman, 1998; Ivanoff et al., 2001; Linehan, 1993). Emotion regulation training involves an improved understanding of emotions. This intervention also involves using healthy coping skills to manage emotions in stressful situations instead of avoiding emotions (Gratz, 2007). Previous findings support effectiveness of DSH treatment through emotion regulation training (Gratz, 2007; Gratz & Gunderson, 2006; Ivanoff et al., 2001; Slee, Spinhoven, Garenfski, & Arensman, 2008).

Results from the current study add to DSH research in several ways. First, higher incidence in adjudicated adolescent males, especially ethnic/racial minorities, indicates that researchers should increase their focus on this population. Researchers may have

neglected DSH in this population due to a lack of available samples. Another reason for this gap in the research might be assumptions that DSH in this population does not significantly differ from the general population. High incidence of DSH suggests that DSH may be more problematic for this population than other populations.

The current study also demonstrates the need for continued development of DSH measures. One challenge for researchers is how to define DSH frequency. The DSHI measures how many “times” an individual has done a specific behavior, but how individuals define an incident of DSH may vary. Individuals may hurt themselves several times or in a variety of ways during one episode of self-harm. An individual may self-harm sporadically, but engage in several self-harming behaviors during each occurrence. Present DSH measures of frequency may have inflated error based on individuals’ interpretation over what constitutes a single incident of DSH.

New DSH measures need to assess for the function that DSH serves for individuals. The current findings indicate that DSH can serve several different functions. Future research should expand on these findings by exploring why different individuals self-harm for diverse reasons or why one individual may use DSH for multiple purposes. One direction for further research is to utilize functional analysis of DSH for individuals who report this behavior and tailor treatment based on what function DSH serves. If an individual uses DSH to manage dissociation, for example, treatment for dissociation management may be more effective in reducing DSH than treatment of self-punishment. Functional analysis of DSH may reduce the chronic nature of DSH. If initial intervention targets the underlying cause of DSH, it will be more effective and reduce the likelihood that individuals will need repeated treatments.

Current findings contribute to growing research on the complex relationship between coping skills and DSH. Some studies indicate that individuals who self-harm have fewer healthy coping skills (Evans et al., 2005; Laye-Gindhu & Schonert-Reichl, 2005; Ross & McKay, 1979; Walsh & Rosen, 1988), but other studies reveal no significant difference between DSH groups and controls (Haines & Williams, 1997). Findings from the present study suggest that the relationship between DSH and coping skills is complicated and requires further attention.

Finally, current findings of an association between DSH and internalizing disorders and reported functions of DSH fit with the experiential avoidance model (Chapman et al., 2006). One reason this model seems to be the best fit is that it incorporates elements of other models strongly supported by previous studies. The main theory of this model is that emotional arousal leads to DSH. The experiential avoidance model accounts for DSH being used to reduce anxiety (anxiety reduction/affect regulation model) because anxiety is considered a type of uncomfortable emotional arousal. Other types of uncomfortable emotional arousal that might trigger DSH are guilt (the basis of the self-punishment model), anger (similar to the hostility model) and dissociation (the function of DSH in the dissociation management model). The experiential avoidance model also integrates explanation of how DSH is maintained through negative reinforcement by providing escape from high emotional arousal, similar to behavioral models. Continued research on this model would help to better clarify aspects of the model that are missing, such as why some people have stronger desire to reduce emotional arousal than others.

Summary of Discussion

This study contributed to the growing body of literature on DSH. The study expanded on recent findings of greater DSH occurrence among men and investigated DSH among adjudicated adolescents. This study also explored correlates and functions of DSH that could enhance assessment and treatment of DSH within this population. These findings added support for the experiential avoidance model. Overall, this study expanded on research dedicated to better understanding the problem of deliberate self-harm.

TABLES

Table 1.

Definitions of Deliberate Self-Harm.

Author(s)	Definition
Arnold and Magill (1996, pg. 2)	“deliberately inflicting pain and/or injury to one’s own body but without suicidal intent”
Conn and Lion (1983, pg. 22)	“willful production of bodily wounds”
Conterio and Lader (1998, pg. 16)	“the deliberate mutilation of the body or a body part, not with the intent to commit suicide but as a way of managing emotions that seem too painful for words to express”
Favazza (1998, pg. 260)	“the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent”
Feldman (1988, pg. 252)	“intentionally damaging a part of [one’s] own body apparently without a conscious intent to die”
Gratz (2001, pg. 254)	“deliberate, direct destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough for tissue damage to occur”
Herpertz (1995, pg. 57)	“deliberate destruction of body tissue without conscious suicidal ideation”

Huband and Tantam (1999, pg. 473-474)	“[injury] in which there is a lack of clear suicidal intent, a tendency to prolong self-suffering, and an indifference to any final anatomical change”
Pattison and Kahan (1983. pg. 867)	“conscious and willful intent to hurt one’s self without intent to kill one’s self”
Phillips and Muzaffer (1961, pg. 421)	“measures carried out by an individual, upon himself, which tend to cut off, to remove, to maim, to destroy, to render imperfect some part of the body”
Simeon and Hollander (2001, pg. 1)	“all behaviors involving the deliberate infliction of direct physical harm to one’s own body without intent to die as a consequence of the behavior”
Suyemoto (1998, pg. 532)	“repetitive and results in minor or moderate harm [which is] not [caused by] suicidal intent [nor] caused by a cognitive impairment”

Table 2.

Means and Standard Deviations of Adolescent Psychopathology (APS) Subscales for Males with and without a History of Deliberate Self-Harm (DSH).

APS-Subscale	Males with DSH History	Males without DSH History
Social Adaptation	54.84* (9.52)	49.46 (7.50)
Alienation/Boredom	54.78* (10.53)	47.43 (7.76)
Emotional Lability	56.10* (10.63)	50.11 (11.95)
Aggression	63.60* (13.73)	56.43 (11.17)
Anger	57.40 (11.65)	53.26 (11.58)

Note. Standard deviations are in parentheses.

* Statistically significantly at the Bonferroni adjusted alpha level of .01

Table 3.

Means and Standard Deviations of Coping Response Inventory (CRI) Subscales for Males with and without a History of Deliberate Self-Harm (DSH).

CRI-Subscale	Males with DSH History	Males without DSH History
Healthy Coping Responses		
Logical Analysis	50.38 (9.83)	43.09 (10.18)
Positive Reappraisal	51.00 (10.35)	49.73 (8.88)
Seeking Guidance and Support	48.62 (8.55)	42.86 (6.40)
Problem Solving	52.95 (9.07)	48.73 (8.71)
Unhealthy Coping Responses		
Cognitive Avoidance	56.95 (10.94)	53.77 (8.78)
Acceptance or Resignation	54.67 (11.04)	51.45 (8.87)
Seeking Alternative Rewards	56.43 (11.54)	53.50 (9.15)
Emotional Discharge	54.90* (8.21)	47.32 (7.69)

Note. Standard deviations are in parentheses.

* Statistically significantly at the Bonferroni adjusted alpha level of .013

Table 4.

Means and Standard Deviations of Functional Deliberate Self-Harm Assessment (FDSHA) for Males with a History of Deliberate Self-Harm (DSH).

FDSHA Function	Males with DSH History
Anxiety Reduction/Affect Regulation	39.55 (14.76)
Punishment	38.00 (17.41)
Dissociation	34.60 (17.06)
Social/Sensation-Seeking	33.30 (15.62)
Interpersonal Boundaries	25.12 (14.38)
Antisucide	23.21 (27.25)
Sexual	8.33 (9.77)

Note. Standard deviations are in parentheses.

APPENDIX A

DEMOGRAPHIC INFORMATION FORM

1. How old are you? _____
2. What is your sex? Male Female (Circle one)
3. What is your race? (Circle one)

African American/Black/African Origin

Asian American/Asian Origin/Pacific Islander

Latino-a/Hispanic

American Indian/Alaskan Native/Pacific Islander

European Origin/White

Bi-racial/Multi-racial

Other: _____

APPENDIX B

DELIBERATE SELF-HARM INVENTORY (DSHI)

This questionnaire asks about a number of different things that people sometimes do to hurt themselves. Please be sure to read each question carefully and respond honestly. Often, people who do these kinds of things to themselves keep it a secret, for a variety of reasons. However, honest responses to these questions will provide us with greater understanding and knowledge about these behaviors and the best way to help people. Please answer yes to a question only if you did the behavior intentionally, or on purpose, to hurt yourself. Do not respond yes if you did some accidentally (e.g., you tripped and banged you head on accident).

1. Have you ever intentionally (i.e., on purpose) cut your wrist, arms, or other area(s) of your body (without intending to kill yourself)? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

2. Have you ever intentionally (i.e., on purpose) burned yourself with a cigarette? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

3. Have you ever intentionally (i.e., on purpose) burned yourself with a lighter or match? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

4. Have you ever intentionally (i.e., on purpose) carved words into your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

5. Have you ever intentionally (i.e., on purpose) carved pictures, designs, or other marks into your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

6. Have you ever intentionally (i.e., on purpose) severely scratched yourself, to the extent that scarring or bleeding occurred? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

7. Have you ever intentionally (i.e., on purpose) bit yourself, to the extent that you broke your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

8. Have you ever intentionally (i.e., on purpose) rubbed sandpaper on your body? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

9. Have you ever intentionally (i.e., on purpose) dripped acid onto your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

10. Have you ever intentionally (i.e., on purpose) used bleach, comet, or oven cleaner to scrub your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

11. Have you ever intentionally (i.e., on purpose) stuck sharp objects such as needles, pins, staples, etc., into your skin, not including tattoos, ear piercing, needles used for drug use, or body piercing? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

12. Have you ever intentionally (i.e., on purpose) rubbed glass into your skin? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

13. Have you ever intentionally (i.e., on purpose) broken your own bones? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

14. Have you ever intentionally (i.e., on purpose) banged your head against something, to the extent that you caused a bruise to appear? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

15. Have you ever intentionally (i.e., on purpose) punched yourself, to the extent that you caused a bruise to appear? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

16. Have you ever intentionally (i.e., on purpose) prevented wounds from healing? (Circle one):

Yes No

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

17. Have you ever intentionally (i.e., on purpose) done anything else (i.e., given yourself a tattoo) to hurt yourself that was not asked about in this questionnaire? (Circle one):

Yes No

If yes, what did you do to hurt yourself? _____

If yes,

- (a) How old were you when you first did this? _____
- (b) How many times have you done this (make a guess if you cannot remember)?

- (c) When was the last time you did this? _____
- (d) How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) _____
- (e) Has this behavior ever resulted in hospitalization or injury severe enough to require medical treatment? _____

APPENDIX C

FUNCTIONAL DELIBERATE SELF-HARM ASSESSMENT (FDSHA)

Consequences of DSH

1. I experience physical pain. (SP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
2. Marks are left on my skin. (SP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
3. I feel better. (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
4. I feel more in control of myself. (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

5. I calm down. (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
6. I experience an adrenaline rush. (SS)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
7. Anxiety is reduced. (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
8. My stress level decreases. (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

9. I feel more separate from others. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
10. I become less angry. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
11. I feel my emotions less strongly. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
12. Distracts me from memories. (D)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

13. I feel guilty. (AR)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

14. I am reminded of memories from the past. (D)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

15. I cry. (SP)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

16. I feel bad. (AR)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

17. Close friends become concerned for me. (IP)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
18. I feel my emotions more strongly. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
19. I feel independent/autonomous. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
20. Family members become more concerned for me. (IP)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

21. I feel more alive. (SS)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
22. People ask me about scars on my body. (IP)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
23. Keeps others at a distance. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
24. I feel like I've lost control of myself. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

25. I am distracted from traumatic memories. (D)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
26. I become more angry. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
27. Fights with friends/family are avoided. (IP)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
28. I feel more real. (D)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

29. Romantic partners act differently around me. (IP)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

30. Fights with friends/family are caused. (IP)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

31. It causes suicidal thoughts. (AS)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

32. Makes my body less attractive. (S)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually
- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

33. Friends behave differently around me. (IP)

- a. Never
- b. Rarely
- c. Sometimes
- d. Usually

- e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
34. My stress level increases. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
35. I feel less attractive. (S)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
36. Anxiety increases. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
37. I feel less alive. (SS)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

38. I feel less safe. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
39. I feel more like my self. (D)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
40. I stop crying. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
41. I feel less guilty. (AR)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

42. Brings me closer to others. (IP)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
43. Flashbacks are stopped. (D)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
44. It stops suicidal thoughts. (AS)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative
45. I feel safe. (IB)
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
 - i. Positive
 - ii. Negative
 - iii. Neutral
 - iv. Positive and Negative

46. People take me more seriously. (IP)
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always
- Positive
 - Negative
 - Neutral
 - Positive and Negative
47. I require medical attention. (SS)
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always
- Positive
 - Negative
 - Neutral
 - Positive and Negative
48. Sexual arousal increases. (S)
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always
- Positive
 - Negative
 - Neutral
 - Positive and Negative

Emotions Associated with DSH

- Angry at Self (SP)
 - Never
 - Rarely
 - Sometimes
 - Usually
 - Always
- Hurt emotionally (AR)
 - Never
 - Rarely
 - Sometimes
 - Usually
 - Always

3. Sad (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
4. Lonely (IP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
5. Overwhelmed (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
6. Isolated (IP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
7. Frustrated (AP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
8. Empty inside (IB/D)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
9. Anxious (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always

10. Hopeless (AS)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
11. Worthless (AS)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
12. Ashamed (SP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
13. Angry at others (IP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
14. Out of control (IB/D)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
15. Guilty (SP)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
16. Calm (AR)
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always

17. Relieved (AR)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
18. Useless (AS)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
19. Relaxed (AR)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
20. Rejected (IP)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
21. Grief
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
22. Embarrassed (SP)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
23. Satisfied
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always

24. In a trance (D)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
25. Mesmerized (D)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
26. Frightened
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
27. Excited (SS)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
28. Stupid (AS)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
29. Afraid
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always
30. Disgust with body (S)
a. Never
b. Rarely
c. Sometimes
d. Usually
e. Always

31. Restless
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
32. Happy
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
33. Unaware of surroundings
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
34. Unreal
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
35. Hopeful
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
36. Indifferent
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always
37. Euphoric
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Usually
 - e. Always

38. Bored
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always
39. Outside of my body
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always
40. Aroused sexually
- Never
 - Rarely
 - Sometimes
 - Usually
 - Always

Reasons for DSH

- To release emotional pressure that builds up inside of me. (AR)
 - Primary reason
 - Secondary reason
 - Not relevant
- To get rid of intolerable emotions. (AR)
 - Primary reason
 - Secondary reason
 - Not relevant
- To control how I am feeling. (AR)
 - Primary reason
 - Secondary reason
 - Not relevant
- To express anger at myself. (SP)
 - Primary reason
 - Secondary reason
 - Not relevant
- To produce a pain that I can control.
 - Primary reason
 - Secondary reason
 - Not relevant
- To cause physical pain which can be enjoyable or comforting.
 - Primary reason
 - Secondary reason
 - Not relevant

7. To assert control over myself.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
8. To regain focus.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
9. To punish myself. (SP)
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
10. To create a physical mark or sign of what I am feeling.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
11. To cope with loneliness.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
12. To diminish feeling empty.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
13. To feel like myself again.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
14. To keep myself from feeling fragmented or not whole.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
15. To see if I can stand the pain.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
16. To cope with/avoid memories of negative childhood experiences.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
17. To know I am capable of feeling physical pain.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant

18. Out of curiosity about what it will feel like.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
19. To express disgust with my body/attractiveness.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
20. To let others know what I am going through. (IP)
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
21. To feel real. (D)
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
22. To feel exhilarated.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
23. To express to others how I am feeling. (IP)
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
24. To get reactions out of people.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
25. To get those around me to understand what I am going through. (IP)
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
26. To avoid the impulse to attempt suicide.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
27. To cope with boredom.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant
28. To take care of myself.
 - a. Primary reason
 - b. Secondary reason
 - c. Not relevant

29. To create physical reminders of important events.
- Primary reason
 - Secondary reason
 - Not relevant
30. To avoid being isolated.
- Primary reason
 - Secondary reason
 - Not relevant
31. To bond with friends. (SS)
- Primary reason
 - Secondary reason
 - Not relevant
32. To show that I am responsible for my well-being. (IB)
- Primary reason
 - Secondary reason
 - Not relevant
33. To fit in with my peer-group. (SS)
- Primary reason
 - Secondary reason
 - Not relevant
34. To control how others treat me. (SS/IP)
- Primary reason
 - Secondary reason
 - Not relevant
35. To provide a physical release that feels much like sexual release. (S)
- Primary reason
 - Secondary reason
 - Not relevant
36. To create a symbolic boundary between myself and others. (IB)
- Primary reason
 - Secondary reason
 - Not relevant
37. To distract myself from uncomfortable sexual impulses/fantasies. (S)
- Primary reason
 - Secondary reason
 - Not relevant

APPENDIX D

SCRIPTS FOR QUESTIONNAIRE AND INTERVIEW SESSIONS

Script For Questionnaire Session

Hi, my name is Jenna Silverman and this is _____, my research assistant. I am a graduate student in psychology at UNLV and we are here to invite you to participate in a research project I am doing. If you are under 18 years of age, your parent has already agreed to let you participate in this project, but you can choose not to do it if you do not want to.

This project has two parts. The first part, which is why you are here today, involves answering some questionnaires about what you think and feel and your behaviors related to psychological health such as anger, sadness, self-esteem, and anxiety. Example questions include “Have you ever intentionally (i.e., on purpose) cut your wrist, arms, or other area(s) of your body (without intending to kill yourself)?” and “Have you felt sad every day for two weeks or more in the last year?” If you choose to answer these questionnaires, please read the first page of the packet we handed out to you and sign it. If you have any questions, raise your hand and my assistant or I will come answer the question. If you do not want to answer the questionnaires, you can either hand us back the packet when we come around and leave or sit quietly while other people finish the questionnaires. If you would like to complete the questionnaire, but would rather do it in private, raise your hand and we can arrange for another time for you to fill out the questionnaire. You will not get in trouble for not doing this research project.

If you decide to answer the questionnaires, you can quit at any time and you will not be in trouble. Also, if while you are answering the questions, you get tired or start feeling upset, raise your hand and my assistant or I will come around and let you take a short break or quit the research project. You do not have to answer all of the questions if you do not want to.

Your name will not be connected with your answers to the questionnaires. You will see a number in the upper right hand corner on every page except for the first page. This is your ID number and will be used with all of your answers. After you fill out the top page rip it off and my assistant or I will come to collect it.

There is a second part of this study which you may be invited to do. To do this part, I need your name on the second page, which also has your ID number. After you write your name on it, rip it off and hand it to my assistant. These pages will be kept separately from your answers to the packets. After we finish the second part of the interview, this page will be shredded. Your name will not appear anywhere else on your answers.

Your answers to these questions will be kept confidential, which means that only I, my research assistant, and Dr. Chris Kearney, my advisor at UNLV, will see these answers. We will not tell anyone else, not the staff at SMYC, not your parents, what you put on these questionnaires. There are only two exceptions for this: if you are planning to kill yourself or seriously hurt someone else. Then I am required by law to talk to the SMYC mental health counselors to get you help.

If you decide to do this project, you may help other people like yourself. Thank you for your time. Any questions?

Script for Interview Session

Hi again, my name is Jenna Silverman and this is _____, my research assistant. You might remember that a short while ago you participated in a research project where I asked you to fill out some questionnaires about your thoughts, feelings, and behaviors. This is the second part of the project. If you are under 18 years of age, your parent has parent has already agreed to let you participate in this project, but you can choose not to do it if you do not want to.

This part of the project involves me asking you some more questions about your thoughts, feelings, and behaviors. You have been invited to do this interview because on the questionnaires, you reported that you [did/did not] hurt yourself in the past. An example of the questions on self-harm is “When I hurt myself, I feel better.” An example of questions on your thoughts and feelings is “Are you currently feeling grouchy or annoyed?” Here is more information about the interview [hand participant assent form]. If you choose to do this interview, please read this sheet and sign it on the bottom. If you do not want to do the interview, you can leave. You will not get in trouble for not doing the interview.

If you decide to do the interview, you can quit at any time and you will not be in trouble. Also, if while you are answering the questions, you get tired or start feeling upset, let me know and we can take a break. You do not have to answer all of the questions if you do not want to.

Your name will not be connected with your answers in this interview. Your ID number, the same one that was on your questionnaire, will be on all the forms for the interview. After you are done with the interview or if you decide not to do it, that paper with your name and ID on it will be shredded. Your name will not appear anywhere else on your answers.

Your answers to these questions will be kept confidential, which means that only I, my research assistant, and Dr. Chris Kearney, my advisor at UNLV, will see these answers. We will not tell anyone else, not the staff at SMYC, not your parents, what you say in this interview. There are only two exceptions for this: if you are planning to kill yourself or seriously hurt someone else. Then I am required by law to talk to the SMYC mental health counselors to get you help.

If you decide to do this project, you may help other people like yourself. Thank you for your time. Any questions?

APPENDIX E

ASSESSMENT ADHERENCE

1. To what extent did the primary investigator follow the Coping Response Inventory?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

2. To what extent did the primary investigator follow the FDSHA for consequences of DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

3. To what extent did the primary investigator ask participant about other possible consequences of DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

4. To what extent did the primary investigator follow the FDSHA for emotions associated with DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

5. To what extent did the primary investigator ask participant about other possible consequences of DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

6. To what extent did the primary investigator follow the FDSHA for reasons for DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

7. To what extent did the primary investigator ask participant about other possible reasons for DSH?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

8. To what extent did the primary investigator follow the M.i.n.i-Kid?

0	1	2	3	4	5
N/A	Not at all	A little	Somewhat	A lot	Completely

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