ATTACHMENT ORIENTATION, AFFECT REGULATION, AND COPING STYLES
IN YOUNG ADULTS WITH PERSISTENT, TRANSIENT, OR ABSENT HISTORY
OF DELIBERATE SELF-HARM

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By
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Bethany Lee Gelinas, candidate for the degree of Master of Arts in Psychology, has presented a thesis titled, *Attachment Orientation, Affect Regulation, and Coping Styles in Young Adults with Persistent, Transient, or Absent History of Deliberate Self-Harm*, in an oral examination held on June 5, 2012. The following committee members have found the thesis acceptable in form and content, and that the candidate demonstrated satisfactory knowledge of the subject material.

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Abstract

The prevalence of deliberate self-harm (DSH) is on the rise, making clinicians more likely than ever to encounter DSH in their clinical practice (Klonsky, 2007; Nock, 2009), and consequently making research that informs such clinical practice increasingly vital. Past research has neglected to adequately explore the differences between absent, persistent, and transient DSH histories and the factors related to increased DSH frequency. Attachment orientation, coping styles, and affect regulation have been implicated as important to adjustment and psychopathology; however, the role of these constructs in DSH and specifically whether they can be successfully applied to explain the differences between DSH histories has yet to be explored. The purposes of this study were fourfold: (1) investigate the relationship between attachment orientation and likelihood of persistent, transient, or absent DSH; (2) determine whether motivations for engaging in self-harm, coping styles and affect regulation differ according to the individuals’ type of self-harm history; (3) investigate which constructs (attachment orientation, coping styles, affect regulation, or motivations) were most predictive of a particular self-harm history; and (4) develop a better understanding of the offset of DSH behaviour and how individuals managed to cease this behaviour. A battery of questionnaires was administered via an online survey to 139 university students in order to gain a better understanding of the relationship between these constructs and DSH history and frequency. The relative importance and predictive utility of these constructs, the differences between DSH histories, and the information obtained on DSH cessation could contribute to more successful treatment and more efficacious prevention. Findings are discussed in terms of clinical and scientific implications.
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1. Introduction

Intentionally engaging in self-harming or self-mutilating behaviours is a perplexing and counter-intuitive clinical phenomenon. More perplexing still is that deliberate self-harm (referred to as DSH herein) behaviours are becoming increasingly prevalent (Kimball, 2009), and thus increasingly likely to be encountered in clinical practice. Past research has focused on the correlates, functions, and comorbidities of DSH, and has particularly implicated affect regulation and coping styles as important components (Evans, Hawton, & Rodham, 2005; Gratz, 2007; Kimball & Diddams, 2007). Past research has often included some measure of frequency or duration of DSH behaviours, and in doing so confirmed that some individuals engage infrequently in DSH, while others persistently engage in such behaviours. Nevertheless, few studies have examined the differences between individuals with infrequent or transient DSH, and those who repeatedly engage in these behaviours. Prevalence rates for DSH are highest in adolescent populations, followed by young adults, and prevalence rates dramatically decrease in later adulthood (Klonsky & Muehlenkamp, 2007; Nock, 2009). Moreover, the majority of individuals who engage in DSH do so in secret and are never in contact with health professionals (Whitlock et al., 2006). Therefore, there is evidence that (a) not all individuals who engage in DSH do so persistently; instead most individuals engage infrequently in these behaviours and do so for a short time period, and (b) some individuals manage to cease these maladaptive behaviours on their own.

Within the existing literature, individuals who have engaged in a single DSH behaviour are often grouped along with individuals who have a far more frequent and extensive history of DSH. According to the precedent literature, this is an inappropriate
and non-homogenous grouping system. Throughout the literature, there is evidence of
important differences between an individual who has engaged once, versus hundreds of
times in DSH behaviours (Brunner et al., 2007; Klonsky & Olino, 2008; Lloyd-
Richardson, Perrine, Dierker, & Kelley; 2007). These differences call for a
categorization which reflects more homogenous groups. Too often within the extant
literature, all individuals who have ever self-harmed are lumped into one category for
data analysis regardless of the frequency of these behaviours. This approach assumes that
someone who has engaged once in DSH is analogous to someone who has engaged
hundreds of times in these behaviours. Any differences between those who engage
transiently and those who engage persistently in DSH could have important implications
for prevention and treatment of DSH. The strategies and experiences of those individuals
who engaged transiently in DSH but were able to discard such behaviours on their own
could also be applied to enhance the treatment of persistent DSH.

The following sections include a synopsis of what DSH is, which individuals are
more likely to engage in such behaviours and why, as well as commonly co-occurring
disorders and risk factors. A discussion of the probable influence of attachment
orientation on DSH ensues, with special attention paid to its influence on affect
regulation and coping styles. The few studies which directly examine the association of
attachment and DSH are compiled as evidence that secure and insecure attachment
orientations are related to the presence or absence of DSH. Likewise, those studies which
considered more than two categories of DSH histories are compiled as evidence for the
distinction between transient and persistent DSH.

1.1 Definition
The occurrence of DSH is commonly defined as the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough for tissue damage to occur (Chapman & Dixon-Gordon, 2007; Deliberto & Nock, 2008; Favazza, 1998; Gratz, 2001). The word deliberate distinguishes these behaviours from harmful consequences which are unintended (e.g., lung cancer from smoking), and the word direct makes a distinction from indirect methods of affecting body tissues such as starvation, chronic alcohol ingestion, or overdose. Culturally sanctioned forms of bodily modification such as tattooing or body piercing are also excluded from the definition. Other terms used throughout the literature to reference this behaviour include non-suicidal self-injury (Klonsky, 2007), parasuicide (Colman, Newman, Schopflocher, Bland, & Dyck, 2004), and self-mutilation (Brain, Haines, & Williams, 2002).

The most frequently reported DSH behaviour is skin cutting (Briere & Gil, 1998; Gratz, Conrad, & Roemer, 2002), followed by self-hitting and scratching (Laye-Gindhu & Schonert-Reichl, 2005); however, other behaviours such as self-burning, biting, or skin-carving are also common (Briere & Gil, 1998; Klonsky & Muehlenkamp, 2007). Rare and more extreme types of DSH behaviour include genital mutilation, bone-breaking, rubbing glass into one’s skin, or self-castration (Briere & Gil, 1998; Gratz, 2001).

When describing what DSH is and includes, it is also useful to speak to what it is not, and in doing so dispel some common myths. In the past, DSH has been trivialized as simple wrist-slashing, with the typical wrist-slasher being portrayed as an attractive young woman who is promiscuous, prone to addictions, unable to relate to others, and
who indiscriminately slashes her wrists at the slightest provocation (Graff & Mallin, 1967). This inaccurate portrayal introduces another common misconception, that individuals who self-harm do it primarily for the attention. Although there is evidence that some individuals engage in this behaviour as a means of attention- or help-seeking; there is far more evidence that it is primarily engaged in for internal reasons (Gratz, 2003). The majority of individuals who self-harm report intrapersonal motivations (e.g., relief from painful feelings or self-punishment) rather than interpersonal motivations such as attention seeking (Briere & Gil, 1998; Polk & Liss, 2009). The common opinion that DSH may occur among adolescents because they view it as fashionable further trivializes the behaviour. This notion is not supported in the literature as adolescents with psychological problems are more prone to undertake self-harming behaviours (Brunner et al., 2007; Webb, 2002), and these behaviours are often done in secrecy (Gratz, 2003).

Other myths surrounding DSH include the belief that such behaviours are failed suicide attempts or that it should be regarded solely as a symptom of an underlying disorder (Favazza, 1998). Even mental health practitioners may endorse such myths (Crawford, Geraghty, Street, & Siminoff, 2003). A DSH knowledge questionnaire revealed that 17% to 82% of mental health practitioners were unaware of basic DSH facts. For example, 77% of practitioners incorrectly believed that DSH is not more likely to occur among individuals who are socio-economically deprived, and 42% of practitioners incorrectly believed that there is no evidence for interventions to be effective in reducing DSH. The following section outlines the relevant facts about DSH.

1.2 Who is Most at Risk?
There is evidence that DSH rates have increased in recent decades throughout the world (Scoliers et al., 2009); however, these rates vary depending on the population. The estimated lifetime prevalence in university students is between 12% and 38% (Gratz et al., 2002; Polk & Liss, 2007; Whitlock, Eckenrode, & Silverman, 2006), while higher rates are estimated for adolescents and clinical populations (Hallab & Covic, 2010). The most at risk population appears to be adolescent psychiatric patients, with between 40% and 80% engaging in some form of DSH (Nock & Prinstein, 2004). DSH typically has an onset in adolescence (Gollust, Eisenberg, & Golberstein, 2008; Klonsky, & Muehlenkamp, 2007).

Traditionally, females were thought to self-harm more than males (Klonsky et al., 2003). More recent studies have refuted a sex-difference in DSH prevalence and frequency, while indicating that sex is related to different DSH behaviours and motivations (Laye-Gindhu & Schonert-Reichl, 2005; Whitlock, Eells, Cummings, & Purington, 2009). For example, females are more likely to engage in cutting for intrapersonal reasons (e.g., self-hatred), whereas males are more likely to self-burn or self-hit for interpersonal reasons (e.g., communicating with or influencing others). Disconcertingly, many individuals’ DSH behaviour occurs unbeknownst to anyone. In a study of DSH (Whitlock et al., 2006), 36% of college students (mean age unavailable, ages 18 – 24) who engaged in DSH revealed that no one knew about their DSH behaviour, and only 21% of the students had disclosed their behaviour to a mental health professional. This study highlights that the known prevalence rates may actually underestimate DSH behaviour, because it is often done in secrecy. Further, in the rare
circumstances when DSH behaviour is disclosed, it is unlikely that it is being disclosed to individuals in a position to either help or seek help for the self-harming individual.

1.3 Why Engage in DSH?

1.3.1 Antecedents and consequences. Why individuals choose to engage in DSH is a question that has been approached in various ways throughout the literature. One approach to studying why someone would deliberately self-harm involves the investigation of the antecedents and consequences associated with the behaviour. In 1998, Briere and Gil conducted a large investigation of the primary feeling states reported directly before and after engaging in DSH. Ninety-three young adults (\(M\) age = 35 years) who engaged in DSH self-reported a high degree of anger at self and others, fear, emptiness, hurt, loneliness, and sadness prior to engaging in DSH, and the majority of participants reported a much lower degree of these feeling states after engaging in the DSH behaviour. This change represents a 77% net decrease in negative affect and feelings after engaging in DSH. The latter suggests that DSH behaviour is a function of antecedents and consequences, as the decrease in negative affect results in negative reinforcement of the behaviour. In 2009, Klonsky asked 39 young adults (\(M\) age = 19.4 years) with self-reported DSH histories about their affect states before and after engaging in DSH. The most common affect states prior to DSH were to feel overwhelmed, sad, and hurt (emotionally). The most commonly reported affect states after engaging in DSH were to feel relieved, angry (at self), and calm. Substantial changes in both affective valence and arousal occurred during DSH, as high arousal/negative affect decreased (e.g., feeling overwhelmed) and low arousal/positive affect increased (e.g., feeling calm). These affective and arousal changes led Klonsky to conclude that DSH is maintained by
negative reinforcement (increasing the future likelihood of a behaviour by removing an aversive stimuli), and to a lesser degree, positive reinforcement (increasing the future likelihood of a behaviour by adding a pleasant stimuli).

1.3.2 Motives. A second approach to understanding why someone would engage in DSH involves an exploration of the underlying motives of the behaviour. Several studies have used motive checklists, or directly asked individuals who self-harm what their reasons or motives are for engaging in DSH. The results of these studies indicate that the leading motivation for DSH is an attempt to control or regulate affect (Briere & Gil, 1998; Laye-Gindhu & Schonert-Reichl, 2005; Polk & Liss, 2009). An online survey of 37 individuals ($M$ age = 23 years) inquiring about self-harm motivations revealed that 30.7% of respondents indicated that they used self-harm both in response to overwhelming emotions and in order to feel something (Horne & Csipke, 2005). These responses suggest that some individuals who engage in DSH may use it to either contain excessive affect or to express diminished affect.

Polk and Liss (2009) asked 154 young adults ($M$ age = 22.7 years) to describe, in their own words, their reasons for engaging in DSH. The responses were then coded for similarities and six themes emerged. The two most frequently cited themes (endorsed by 87% of the sample) were to release emotions and to feel alive – by creating emotions, both of which involve affect regulation. The other four themes included: to feel in control, to self-punish, to prevent suicide, and to avoid or distract from internal pain. A bi-dimensional conceptualization of the reasons for DSH echo these themes and include A Cry of Pain, which comprises affect regulation and expressing internal pain, and A Cry for Help, which involves attention- and help-seeking motives (Scoliers et al., 2009).
Similar themes or factors, derived from individuals’ self-reports are reported throughout the literature (Klonsky, 2009; Scoliers et al., 2009; Warm, Murray, & Fox, 2003).

1.3.3 Psychophysiological mechanisms. A third approach involves the exploration of the psychophysiological mechanisms underlying DSH behaviours. Although few in number, the experimental studies that examine the physiological aspects of self-harm provide additional support for the view that DSH behaviours are negatively reinforced through the avoidance or dissipation of negative emotions. DSH imagery scripts have been used in various populations to assess physiological arousal in response to DSH. These imagery scripts are vivid written descriptions of a particular incident, which include environmental, behavioural, emotional, psychophysiological, and cognitive details. Male prisoners ($n = 26; M$ age $= 21.3$ years) with a history of DSH demonstrated a decrease in both physiological arousal and subjective reports of negative emotions and tension in response to DSH imagery scripts (Haines, Williams, Brain, & Wilson, 1995). These decreases were not observed for imagery scripts depicting an accidental injury or emotionally neutral content. In contrast to these findings, male college students ($n = 12; M$ age $= 21.6$ years) with no history of engaging in DSH had the opposite response to the DSH imagery scripts, as they evidenced heightened physiological arousal and reported no decrease in negative emotions (Haines et al., 1995). Similar results were obtained from a group of 45 self-harming women ($M$ age $= 35$ years) with bipolar personality disorder who also demonstrated a decrease in both physiological arousal and subjective reports of negative emotions and tension in response to the DSH imagery script (Welch, Sylvers, Linehan, Chittams, & Rizvi, 2008).
Another study involving 43 young adults ($M$ age = 23.5 years) with a history of DSH (Brain et al., 2002) were provided imagery scripts in four distinct stages: (1) setting the scene; (2) approach to the DSH behaviour; (3) the actual DSH incident; and (4) the consequence, or resolution. Finger pulse amplitude, respiration, and heart-rate were measured in the participants in response to the guided imagery stages. All three physiological measures indicated a significant increase in arousal from the scene to approach stage, and a significant decrease in arousal from the approach to incident stage. Based on these results, Brain and his colleagues propose a tension-reduction model of DSH involving a physiological arousal-related reinforcement process. Other physiological mechanisms such as hormones and analgesics also appear to be at work throughout the process of self-harm. High cortisol (a stress hormone) levels have been found to correspond with high ratings of negative emotions, and precede episodes of DSH (Sachsse, von der Heyde, & Huether, 2002). Following DSH, cortisol levels tend to drop dramatically and remain at a low level for days afterward. Moreover, it has been suggested that engaging in repeated DSH increases one’s levels of endogenous opiates; as such, this increase may cause a type of pain analgesia which detracts from the deterring sensations of physical pain one would normally experience while engaging in DSH behaviour (Nock, 2009).

1.4 Why Stop Engaging in DSH?

As part of a larger study, Deliberto and Nock (2008) asked 94 adolescents ($M$ age = 17.1 years) who engaged in DSH the open-ended question “why or why wouldn’t you like to stop engaging (in DSH)?” The primary reason for wanting to stop DSH behaviour (reported by 56.1% of the adolescents) was that it is an unhealthy behaviour. Other
external reasons for wanting to stop DSH include: it attracts unwanted attention (reported by 17.1% of adolescents), causes scarring (14.6%), causes shame (7.3%), and upsets family members and friends (4.9%).

Young, van Beinum, Sweeting, & West (2007) used a population-based survey of 1258 young adults (mean age unavailable, ages 18 – 20) to query a number of DSH factors, including reasons for ceasing DSH. Participants’ responses were categorized into one of four cessation themes. The most frequently reported theme was that the young adult realized harm to self and family, or “stupidity” (36.9%). The second most frequent theme was that the DSH behaviour was only part of a temporary phase (26.2%). This was closely followed by the theme of coping, feeling better, or finding a purpose in life (24.6%). The least common theme involved gaining professional or informal help (12.3%).

As the prevalence rates for DSH are highest in adolescent populations, followed by young adults, and dramatically decrease in later adulthood (Klonsky & Muehlenkamp, 2007; Nock, 2009), it is apparent that most individuals who do engage in self-harm stop the behaviour at some point. Although some investigations have been conducted on the efficacy of treatment of DSH (Hawton et al., 1998; Kimball, 2009), there is an apparent dearth of research on why individuals naturally stop such behaviour. How can we propose to treat DSH if we have little to no understanding of what motivates an individual to stop DSH, what self-treatment strategies are used, and what characteristics may distinguish between people who are and are not able to relinquish these behaviours?
1.5 Co-Ocurrence

Individuals who engage in DSH have a higher prevalence of mental disorders than the general population (Gollust et al., 2008). However, none of these disorders are specific to DSH, nor can they explain why some individuals with these co-morbid disorders engage in DSH while others do not (Lofthouse & Yager-Schweller, 2009). The following section will provide an outline of the relevant research on each of the most prevalent disorders and symptoms found among those who engage in DSH.

1.5.1 Depression and hopelessness. Depression has been identified as a predisposing risk factor to DSH (Klonsky, Oltmanns, & Turkheimer, 2003). Rates of depression in DSH populations are higher than in general populations, and a diagnosis of Major Depressive Disorder is warranted in 15-31% of individuals who engage in DSH (Ennis, Barnes, Kennedy, & Trachtenberg, 1989; Gollust et al., 2008). However, it has also been suggested that while the vast majority of individuals who engage in DSH display depressive symptoms, few qualify for a formal diagnosis of depression (Harrington, 2001). Other researchers propose that the relationship between depression and DSH is influenced by hopelessness. After controlling for depression, adolescents who engage in DSH are more likely to report hopelessness than equally depressed adolescents who do not engage in such behaviours; and within a depressed group of adults, hopelessness has been shown to predict DSH behaviours (McLaughlin, Miller, & Warwick, 1996).

1.5.2 Borderline personality disorder. DSH is part of the diagnostic criteria for borderline personality disorder (BPD) and occurs in approximately 70 – 80% of individuals with BPD (DSM-IV-TR; American Psychiatric Association, 2000). There is
evidence that individuals who engage in DSH exhibit more symptoms of BPD than individuals who do not self-harm; however, few individuals who engage in DSH meet BPD diagnostic criteria (Klonsky & Muhlenkamp, 2007). The link between DSH and BPD is not surprising given that both disorders are characterized by negative emotionality, affect dysregulation, impulsivity, and instability in relationships and moods (Klonsky & Muhlenkamp, 2007; Linehan, Camper, Chiles, Strosahl, & Shearin, 1987).

1.5.3 Anxiety. In terms of anxiety disorders, 7.5% of individuals who self-harm experience Panic Disorder compared with 1.1% of those who do not self-harm; 10.6% of individuals who self-harm experience Generalized Anxiety Disorder compared to 2.4% of individuals who do not self-harm (Gollust et al., 2008). There is also some evidence that co-occurring anxiety leads to a greater likelihood of skin-cutting, as individuals who engage in skin-cutting report more symptoms of anxiety than both individuals who do not self-harm and individuals who engage in other forms of DSH (Klonsky & Glenn, 2009). While levels of both depression and anxiety are higher in individuals who self-harm than in those who do not, the association between depression and DSH is considerably smaller after controlling for the effects of anxiety (Klonsky et al., 2003). The extant literature supports the notion that DSH is used as a coping method for reducing or distracting from anxiety (Chapman & Dixon-Gordon, 2007; Klonsky et al., 2007).

1.5.4 Eating disorders. The prevalence of eating disorders is also higher in individuals who self-harm than in the general population (Whitlock et al., 2006). Some researchers have found the co-occurrence of eating disorders and DSH in 25% of individuals who self-harm (Gollust et al., 2008) and as high as 75% in clinical self-
harming populations (Favazza, 1998; Whitlock et al., 2006). High levels of co-morbidity have been explained by the similarities between the functions of both syndromes (Favazza, 1998). Specifically, both forms of psychopathology are linked to a need to self-punish or feel control, and both serve similar psychological functions in terms of regulating affect and experiencing emotional relief through body modification.

1.5.5 Suicidality. Emerging evidence suggests that suicide and DSH are distinct yet related clinical phenomena (Lofthouse & Yager-Schweller, 2009). Often, DSH is confused with suicidality; however, there is a growing body of evidence that key components exist that distinguish one from the other (Fliege et al., 2008; Gratz, 2003). A primary difference between the two phenomena is the intent underlying the behaviours. The intent of suicide has been described as the permanent elimination of consciousness, while the intent of DSH is to temporarily alter consciousness and affect in order to reduce distress (Lofthouse & Yager-Schweller, 2009). Not all DSH behaviour is suicide-oriented and more often than not DSH is employed as a coping mechanism, and not as an attempt at ending one’s life (Gollust et al., 2008). However, considerably more individuals who engage in DSH attempt suicide than those that do not engage in DSH. Laye-Gindhu and Schonert-Reichl (2005) found that in a sample of 424 adolescents ($M_{\text{age}} = 15.3$) 26% of those who self-harm versus 6% of those who do not self-harm attempted suicide. The same authors indicate that individuals who self-harm were more likely than peers who do not self-harm to report suicidal ideation (83% vs. 29%) and to have made a suicide plan (40% vs. 3%). Looking at these statistics in another way, 74% of individuals who engage in DSH never attempt suicide; however, only 17% have never had suicidal thoughts. Although DSH and suicidality tend to have similar risk factors
(e.g., childhood emotional, physical, and sexual abuse), individuals who engage in both DSH and suicidal ideation are more likely to have these risk factors than individuals who engage in DSH alone (Whitlock & Knox, 2007). One web-based study involving 2875 young adults (mean age unavailable, ages 18-24) found a curvilinear relationship between DSH frequency and suicidality, in that the strength of this association increases with more incidents of DSH, peaking at approximately 50 incidents of DSH, after which the association declines (Whitlock & Knox, 2007). This curvilinear relationship may occur because the individuals engaging in high-frequency DSH may do so habitually or chronically and no longer in response to the same factors that cause risk of suicide.

1.6 Risk Factors

1.6.1 Child abuse. Some mental health professionals seem to take for granted that those who self-harm must have experienced child abuse (particularly sexual abuse). Although research indicates that past abuse can increase one’s risk to deliberately self-harm (Gratz, Conrad, & Roemer, 2002), it is not an inevitable development (Klonsky & Muehlenkamp, 2007). A recent review of 43 studies found only a modest relationship ($\phi = 0.23$) between child sexual abuse and self-harm (Klonsky & Moyer, 2008). Klonsky and Moyer suggested that child sexual abuse could be conceptualized as a proxy risk factor, in that both the abuse and DSH are associated with the same psychological risk factors. One of the most well-established and well-known theories of the development of DSH illustrates this point. Linehan (1993) suggests that early invalidating environments (e.g., neglect, stifled emotional expression, or abuse) lead individuals to develop poor interpersonal and affect-regulation skills. Just as abuse and poor affect-regulation are
associated, so are poor affect-regulation and likelihood of DSH. Although child abuse appears to have an important role in the development of some individuals’ self-harm, many individuals who self-harm have not been abused, and many individuals who have been abused do not engage in DSH (Klonsky & Muehlenkamp, 2007). Taken as a whole, the research indicates that individuals who engage in DSH tend to report a lower quality of family environment compared to those who do not engage in DSH, but not necessarily from an abusive environment.

1.6.2 Maladaptive coping mechanisms. Coping strategies comprise both cognitive and behavioural efforts employed to deal with stressful situations and perceived problems (Evans et al., 2005). Coping strategies are often categorized as problem- or emotion-focused. Problem-focused coping involves actively altering the environment or situation and can include talking to someone about the problem. Alternatively, emotion-focused coping involves disengaging from or avoiding the situation and giving up. This emotion-focused type of coping has been found to increase distress (Evans et al., 2005). Adolescents who engage in DSH differ from adolescents who do not engage in DSH behaviours in terms of the coping strategies employed. Coping strategies that have a greater focus on avoidance and less of a focus on problem-solving are characteristic of adolescents who self-harm (Evans et al., 2005). Difficulties employing active problem-focused coping is also characteristic of individuals who self-harm (Linehan et al., 1987).

In a sample of 233 college students (M age = 19.4 years), Brown, Williams, and Collins (2007) found two maladaptive coping strategies that were employed more often in individuals who engage in DSH. The first strategy is that of behavioural disengagement, involving a higher likelihood of quitting, giving up, or putting in less effort when
confronted with a challenging or stressful situation. The second strategy involves coping through substance abuse. Both of these maladaptive coping strategies would fall under the emotion-focused coping category.

1.6.3 Negative affect and affect dysregulation. Affect regulation is often conceptualized as the ability to control one’s emotions; however, a more accurate description is the ability to control one’s behaviours (e.g., by inhibiting impulsive behaviours and engaging in healthy goal-directed behaviours) when experiencing these negative emotions (Gratz & Roemer, 2004). Affect dysregulation, or deficits in controlling behaviour while experiencing negative emotions, is characteristic of DSH (Gratz, 2007; Kimball & Diddams, 2007; Polk & Liss, 2009). Biological vulnerabilities have been implicated as contributing to the affect dysregulation so common in DSH (Linehan, 1993). This biological vulnerability takes the form of emotional reactivity (i.e., high sensitivity to emotional stimuli) and emotional intensity (i.e., tendency to experience extreme reactions). Individuals with a past and recent history of DSH have a tendency to experience greater negative emotions, such as fear, hostility, guilt and sadness (Brown et al., 2007).

1.6.4 Impulsivity. In the Diagnostic and Statistical Manual of Mental Disorders, Fourth edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), there is no specific diagnosis for DSH but it is often classified as an impulse-control disorder not otherwise specified (Fliege, Lee, Grimm, & Klapp, 2009). Impulsive behaviour and problems controlling one’s behaviour has been linked to DSH (Chapman, Gratz, & Brown, 2006; Herpertz, Sass, & Favazza, 1997). Impulsivity has been linked to affect dysregulation, contributing to irritability and rapid shifts in affective states.
Individuals who engage in DSH have been found to exhibit an enduring pattern of impulsive personality functioning; this pattern contributes to deficits in future-oriented problem-solving (Herpertz, Sass, & Favazza, 1997). Individuals who self-harm have a higher degree of impulsivity than the general public (Nixon, Cloutier, & Jansson, 2008), and individuals who repeatedly self-harm are more impulsive than those who have self-harmed once (Evans, Platts, & Liebenau, 1996). Not only has elevated impulsivity been able to differentiate between individuals who do and do not engage in DSH, but it has also been able to differentiate between adolescents who self-harm and other distressed adolescents (Webb, 2002). There is some evidence that these deficits in impulse management may be due to decreased activity in the areas of the brain that underlie executive functioning, and increased activity in the areas of the brain associated with affective reactivity (Franklin, Hessel, Aaron, Arthur, Heilbron, & Prinstein, 2010). This type of neurological constellation frequently found in individuals who self-harm constitutes a system that is biased toward engaging in impulsive affect-focused behaviours such as DSH.

1.6.5 Self-harming peers. One of the most robust predictors of adolescents’ behaviours and attitudes is the degree to which they believe their peers are engaging in that behaviour or possessing that attitude (Heilbron & Prinstein, 2008). It appears that DSH behaviour is no exception to this type of contagion effect. In a population-based study (n = 568) in Canada, 29% of a sample of self-harming adolescents (mean age unavailable, ages 14 – 21) reported first getting the idea to self-harm from a friend (Nixon et al., 2008). Similarly, 38.3% of self-harming adolescents in the United States reported that they first got the idea to engage in DSH from peers (Deliberto & Nock,
In-patient and community adolescents’ perceptions that their friends were engaging in increased DSH were associated longitudinally with increases in their own DSH (Heilbron & Prinstein, 2008). From a large sample of university students (n = 3069; mean age unavailable, ages 18 – 24), Whitlock, Muehelenkamp and Eckenrode (2010) organized the self-harming students into three groups depending on severity and frequency of DSH behaviours. Few (9.8%) individuals in the low severity group had any friends who also engaged in DSH, followed by 17.6% of individuals in the moderate severity group, and 42.1% of individuals in the high severity group reported having self-harming friends. Therefore, there is evidence that (actual or perceived) DSH behaviour in peers contribute to the initial idea to self-harm, the likelihood of engaging in such behaviour, as well as the escalation of DSH behaviour in terms of frequency and severity (Heilbron & Prinstein, 2008; Nixon et al., 2008; Whitlock et al., 2010).

1.6.6 Hostility/Anger. The exhibition of angry and hostile behaviour is a common feature of DSH; however, it is not as prominent as in substance abusing or suicidal populations (Lofthouse & Yager-Schweller, 2009). Nonetheless, adolescents who engage in DSH have been found to have more anger-control problems and anger-discomfort than adolescents who do not engage in DSH (Laye-Gindhu & Schonert-Reichl, 2005). A large study conducted in one hundred twenty-one schools (n = 5059) in Germany compared grade 9 students (M age = 14.9 years) with an absent, occasional, or repetitive history of DSH, and found an association between frequency of self-harm and amount of aggressive behaviours (Brunner et al., 2007). Individuals that engage in DSH have higher levels of both extrapunitive hostility (e.g., cynicism, resentment, becoming easily angered) and intropunitive hostility (e.g., self-doubt, guilt, self-criticism). This
combination of being easily angered while experiencing emotions such as self-criticism may result in directing hostile feelings toward the self (Mangnall & Yurkovitch, 2008). The hostility model of DSH outlined by Herpetz, Sass, and Favazza (1997) postulates that an individual turns to self-harm because of an inability to express anger, which leads to rising tension.

1.7 Attachment Theory

Traditionally, three primary attachment patterns have been described: secure, avoidant, and anxious-ambivalent (Ainsworth, 1978). These attachment patterns arise from mental representations of relationships that are activated in response to separation, stress, or illness in childhood (Ainsworth, 1978). According to the Bowlby-Ainsworth theory, individuals with a secure attachment orientation feel close to others and are able to rely on them for support when needed. Those with an avoidant attachment orientation are emotionally distant or unresponsive to others and tend to be uncomfortable in close relationships. As a result, these individuals may not seek help when it is needed and instead express their distress as anger. Anxious-ambivalent orientation is associated with fear of abandonment and rejection, but a strong desire to form close interpersonal relationships. These individuals may repeatedly seek help yet have difficulty perceiving support when it is provided. As a result, they are vulnerable to feelings of depression, helplessness, and resentment. Secure attachment is considered healthy, and is associated with both closeness and autonomy, whereas insecure attachment (both avoidant and anxious types) is considered unhealthy and is associated with psychopathology (Gormley
& McNiel, 2010). These attachment orientations are considered to be stable across the lifespan (Stepp et al., 2008).

1.7.1 The influence of attachment on coping styles. According to attachment theory, securely attached individuals are expected to display adaptive coping (such as cognitive, behavioural, or social support-seeking methods) and the ability to regulate affect (Bowlby, 1988). Insecurely attached individuals (including avoidant and ambivalent attachment orientations) are expected to demonstrate poor coping and affect-regulation methods (Kimball & Diddams, 2007). These individuals also have a tendency to rely on internal or negative avoidance coping styles and not on family/peer communication (Howard & Medway, 2004; Seiffge-Krenke & Beyers, 2005). Mikulincer and Shaver (2007) outline different coping foci utilized by individuals depending on their attachment orientation. Securely-attached individuals tend to use problem-focused coping, which involves changing the situation or taking active steps to resolve the conflict. These individuals are able to engage in cognitive reappraisals (i.e., monitoring and re-evaluating negative thoughts in a more positive way), self-soothing, and mobilization of support from others. These coping styles are learned from, and facilitated by, security-providing attachment figures. Alternatively, avoidantly-attached individuals use response-focused coping (which involves suppressing emotions and utilizing dissociation and distraction methods), whereas anxiously-attached individuals use emotion-focused coping (which involves attention-seeking and catastrophic appraisals).

1.7.2 The influence of attachment on affect regulation. The attachment system is a mechanism of affect regulation in itself. Perceived threats or discomfort
automatically activate the attachment system, which via an inborn tendency causes the threatened individual to seek proximity to attachment figures in order to manage the threat or assuage the discomfort (Mikulincer & Shaver, 2007). Secure attachment promotes the development of healthy regulatory processes that allow emotions to be experienced and expressed without distortion. In contrast, insecure attachment may occur, which contributes to distortions of emotional experience, dysfunctional rumination, and poor coping skills. Individuals with anxious or avoidant attachment orientations can be expected to engage in maladaptive affect regulation strategies including DSH (Cooper, Shaver, & Collins, 1998). For this reason, Bowlby (1988) viewed attachment insecurity as a risk factor for clinically significant emotional problems. Secure individuals are able to focus on the emotion-generation process – changing the emotion-eliciting event or reappraising it constructively. This process calls for tolerance of the resulting negative emotions as opposed to the denial or avoidance of such emotions. Securely-attached adolescents have demonstrated fewer emotional problems and better emotional self-regulation than their insecurely-attached peers (Keskin & Cam, 2010). Insecurely-attached individuals either use emotion-deactivating (in the case of avoidant attachment) or emotion-hyperactivating strategies (in the case of anxious attachment). Individuals with an avoidant attachment orientation focus on avoidant defenses that inhibit negative emotional states. This inability or unwillingness to deal directly with emotions, results in a denial or suppression of emotion-related thoughts, tendencies, or expressions. Alternatively, individuals with an anxious attachment orientation may attempt to sustain or intensify emotions. These individuals
are purported to be especially prone to experiencing negative affect and thus engage in risky behaviours in order to cope (Cooper et al., 1998).  

**1.8 Evidence for an Association between Attachment and DSH.**

Attachment orientation has demonstrated associations with various forms of psychopathology (Brown & Wright, 2003; Ward, Lee, & Polan, 2006), interpersonal problems (Keskin & Cam, 2010), and suicidality (Stepp et al., 2008). Support for the suggested relationship between DSH and insecure attachment is evident in other areas of empirical research. Secure attachment to a caregiver can ameliorate childhood separation and loss by assuaging the negative consequences (Heinzer, 1995); conversely, insecure attachment to a caregiver can exacerbate trauma or childhood abuse, resulting in more detrimental outcomes (Wekerle, & Wolfe, 1998). There appears to be an association between emotional neglect in childhood (an occurrence which can result in insecure attachment orientations) and later DSH behaviours, and this relationship is stronger than that of physical neglect (Gratz, 2003). Past research has shown that affect regulation is one of the most highly endorsed reasons for engaging in DSH (Briere & Gil, 1998; Laye-Gindhu & Schonert-Reichl, 2005; Polk & Liss, 2009), and that affect-regulation appears to mediate the relationship between attachment orientation and DSH (Kimball & Diddams, 2007). There are indications that individuals who engage in DSH utilize different and more maladaptive coping styles than other individuals (Evans et al., 2005). Those who engage in DSH tend to be less problem or acceptance-focused (as seen in secure attachment). These individuals also tend to be more avoidant or disengaged in their coping styles (as seen in avoidant attachment), and are less likely to seek help from others as part of their coping process (as seen in anxious attachment). Consequently, the
maladaptive coping styles utilized by those who engage in DSH could be reflective of attachment orientation (Brown et al., 2007; Chapman et al., 2006; Evans et al., 2005).

The few studies which have explored the association between attachment orientation and DSH have been promising. In an examination of this attachment-DSH relationship (Gratz et al., 2002), insecure paternal attachment in childhood was predictive of later DSH behaviours and accounted for a significant amount of variance in these behaviours in a sample of 133 university students ($M$ age = 22.7). Attachment orientation has been found to have direct and indirect relationships with DSH, and the potential for attachment to function as either a resiliency or risk factor regarding the use of DSH as an affect regulation strategy was thus suggested (Kimball & Diddams, 2007). In a study of 109 adult psychiatric patients ($M$ age = 40.7), insecure attachment orientation was associated with self-harm. The odds of having a history of DSH increased incrementally as levels of attachment anxiety increased, such that patients with levels of attachment anxiety one standard deviation above the mean were three and a half times more likely to report past DSH than those patients with levels of attachment anxiety one standard deviation below the mean (Gormley, & McNiel, 2010). Although currently there is a limited amount of direct evidence of an association between attachment orientation and DSH, the extant research in other areas combined with the preliminarily promising research by Gratz (2003), Kimball and Diddams (2007), and Gormley and McNiel (2010) make a solid case for the presence of an association. Despite the apparent clinical relevance of this area of inquiry, there is a dearth of literature directly addressing the potential association between DSH and security of attachment relationships, and a call for
more focused research on this probable association has been made (Gratz, 2003; Hallab & Covic, 2010).

1.9 Evidence for a Transient DSH Group

Throughout the literature, researchers have made mention of a group of individuals who seem to engage in an experimental, or transient type of DSH (Hallab & Covic, 2010; Webb, 2002); however, few studies further investigate the number of individuals who engage in transient DSH compared to persistent DSH. In 2006, Whitlock et al. conducted a study of DSH in a college population \( n = 3069 \); mean age unavailable, ages 18-24). Lifetime frequency of DSH behaviours was obtained from 490 students with a history of DSH. Approximately 25.4% of the students had engaged in DSH only once, 33.2% of the students endorsed two to five DSH incidents, 15.5% of the students endorsed 6 - 10 incidents, and only 24.9% of the students had engaged in DSH more than 10 times. The majority of individuals who engage in DSH do so less than 5 times in their life. Similar results were found by Laye-Gindhu and Schonert-Reichl (2005). In their sample of 64 self-harming adolescents \( \text{\( M \)} \text{ age = 15.3 \) }, 24% had engaged in a single DSH behaviour, 52% had engaged in DSH between 2 and 10 times, and 24% had engaged in DSH more than 10 times. This general trend of DSH frequency was found in a Canadian sample of 728 university students \( \text{\( M \)} \text{ age = 20.6 \) } in which 8.7% of the students had engaged in one act of DSH, 73.9% of students had engaged in DSH between 2 and 10 times, and 17.4% of students had engaged in DSH more than 10 times in their life (Heath, Toste, Nedecheva, & Charlebois, 2008). The same authors found that 4.2% of the self-harming university sample had engaged in DSH behaviours more than 100 times.
There is a higher prevalence of individuals who engage in DSH transiently than persistently, and thus warrant attention.

The few studies which have made a distinction based on frequency of DSH have found meaningful differences between groups of varying self-harm history (Brunner et al., 2007; Klonsky & Olino, 2008; Lloyd-Richardson et al., 2007). This lends support to the idea that there are noteworthy differences between these types of individuals and data should be analyzed accordingly. The original categorization of DSH behaviour was first proposed by Favazza and Rosenthal in 1990, elaborated on and most fully presented in the seminal work *Bodies Under Siege* (Favazza, 1996). This categorization system presents DSH as having three categories based on the degree of tissue damage and the rate and pattern of the behaviour. The categories are: major (referring to infrequent acts such as self-castration, that involve severe tissue damage, and are most associated with psychosis), stereotypic (referring to monotonously repetitive behaviours highly prevalent in individuals with mental retardation), and superficial/moderate. This final category is subdivided into compulsive, episodic, and repetitive types, and is the category to which our definition of DSH most appropriately applies. Favazza (1998) suggests that episodic DSH can become repetitive DSH when the self-harm behaviours become an overwhelming preoccupation, and when the individual adopts an identity as a “cutter”.

In 2008, Klonsky and Olino performed a latent class analysis of 205 young adults ($M$ age = 18.5 years) with a history of one or more DSH behaviours to identify clinically distinct subgroups of individuals who self-harm. Four subgroups emerged, and were identified based on method (e.g., cutting, burning, etc), descriptive features (e.g., self-harming alone or with others, amount of pain involved, etc), and function (e.g., social or
internal). These subgroups were then compared on clinical features and suicidality. The largest subgroup (61% of the sample) engaged in relatively few types of DSH behaviour and engaged in them infrequently. This subgroup, entitled experimental, also differed from the other groups in that members were less likely to display clinical symptoms. A study done in the United States resulted in the categorization of a sample of 633 adolescents ($M$ age = 15.5 years) into no, minor, or moderate/severe DSH (Lloyd-Richardson et al., 2007). Lloyd-Richardson et al. found significant differences between the minor and moderate/severe groups in terms of characteristics and motivations to engage in the behaviour. Individuals in the moderate/severe category were more likely to engage in more types of DSH behaviours, and to engage more frequently. This group was also more likely to contemplate DSH before engaging in the behaviour, experience pain, require medical treatment for their injuries, and use alcohol or drugs during DSH. Individuals in the minor DSH group reported fewer motivations or reasons for engaging in DSH, and all the reasons reported fell under the automatic-negative reinforcement or automatic-positive reinforcement categories. Individuals with more severe DSH behaviours reported more reasons for engaging in DSH, and unlike individuals with less severe DSH behaviours, reported social or interpersonal reasons for DSH (Lloyd-Richardson et al., 2007). Differences in coping ability have also been demonstrated between repeaters and non-repeaters of DSH, as individuals who persistently engage in DSH have markedly lower problem solving abilities (Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999).

A German study comprising 5,759 grade 9 students ($M$ age = 15.0) differentiated between occasional (defined as 1 to 3 DSH behaviours a year), repetitive (defined as 4 or
more DSH behaviours a year), and no DSH (Brunner et al., 2007). Approximately 10.9% of the sample was coded occasional, 4.0% was coded as repetitive and the remaining 85.1% had no history of DSH. Although not the focus of the study, the authors noted that psychological factors such as body image problems, self-perception of having problems, suicidal ideation, and suicidal attempts, all seem to be more strongly associated with repetitive DSH than occasional DSH. Social factors such as academic achievement and health of family members seem to be more important concomitants to the development of occasional DSH, than in repetitive DSH. The same authors also found noteworthy differences between students who had any history of DSH (occasional or repetitive) and no DSH history. As social factors are implicated in the development of occasional DSH, and psychological factors are more strongly associated with repetitive DSH, the authors suggest that some DSH may represent a transient period of distress, whereas other cases are more representative of psychiatric disturbances. The authors also assert that based on these relevant differences, the differentiation between occasional and repetitive DSH is reasonable. As there is also evidence that differences occur between individuals with any DSH history, and no DSH history, the further division into three distinct groups (persistent, transient, and absent DSH history) is also reasonable. Indications from the literature that the prevalence of DSH is not stable across time (i.e., there is an inverse relationship between DSH and age), and that there are important differences between individuals who engage transiently and persistently warrant further investigation. The indications that some individuals experiment with DSH, while other individuals seem to fall into a chronic and persistent pattern of DSH, also warrant investigation in to how and why some individuals can cease or discard this behaviour.
1.10 Purposes

The proposed study sought to explain the differences between individuals with a persistent, transient, or absent DSH history in terms of their attachment orientation, motivations to self-harm, coping styles, and ability to effectively engage in affect regulation. The proposed study also examined which constructs are most predictive of persistent, transient, and absent DSH behaviours. The specific purposes were fourfold: (1) examine the relationship between attachment orientation and likelihood of persistent, transient, or absent DSH; (2) determine whether motivations for engaging in self-harm, coping styles and affect regulation differ according to the individuals’ type of self-harm history; (3) investigate which constructs (attachment orientation, coping styles, affect regulation, or motivations) are most predictive of a particular self-harm history; and (4) develop of a better understanding of the offset of DSH behaviour, and how individuals managed to cease this behaviour.

It was hypothesized that: (1) individuals with absent DSH history would display the highest ability to regulate affect, followed by those with a transient history, while those individuals with a persistent history of DSH would display the lowest amount of affect-regulation; (2) individuals with a transient history of DSH would be identifiable as a distinct group, as they would utilize different coping styles and have different DSH motivations than individuals with either a persistent or absent DSH history; (3) higher secure attachment scores would be associated with absent or transient DSH history, and higher insecure attachment (anxious and avoidant) scores would be associated with a persistent DSH history; and (4) individuals who engaged in DSH for interpersonal motivations (e.g., peer-bonding, attention-seeking, revenge) would receive higher scores
on anxious attachment orientation, whereas individuals who engaged in DSH for intrapersonal motivations (e.g., self-punishment, affect regulation, anti-dissociation) would receive higher scores on avoidant attachment orientation.

2.0 Method

2.1 Participants

In order to obtain a sample of participants with a history of DSH, students from Introductory Psychology courses were pre-screened using the Deliberate Self Harm Inventory (DSHI). Those individuals with a present DSH history (i.e., one or more lifetime incidents of DSH) were contacted to participate in an online study, as was a random sample of those individuals who had an absent DSH history (i.e., no lifetime incidents of DSH). Those students contacted to participate in the study did so through the Department of Psychology Participant Pool. Only those students who participated in the full study were eligible to receive extra credit toward their Psychology course as compensation for their research participation.

A total of 778 undergraduate students were pre-screened for eligibility between September, 2011 and January, 2012 (see Figure 1 for a summary of the flow of participant recruitment). A small number of students were disqualified from participating in the study based on age \((n = 20)\), not giving consent \((n = 7)\), not completing all the questions on the pre-screen questionnaire \((n = 9)\), or not understanding the pre-screen questions \((n = 22)\). Therefore, a total of 57 students were considered ineligible. A total of 263 students (36.5%) endorsed at least one DSH behaviour, and were invited to participate. The remaining 458 students did not endorse any DSH behaviours; of these, 50 randomly chosen students were invited to participate. One hundred forty-nine students
Figure 1

Summary of Participant Retention over Study Duration

- 778 Students were pre-screened
  - 721 Eligible students
    - 263 with DSH
    - 485 without DSH
  - 57 Students deemed ineligible
  - 149 Students participated
    - 105 Students with DSH
    - 34 Students with no DSH
    - 10 Students deemed ineligible
participated in the online study; however, the results of 10 students were not considered because they either did not complete all the questions or were disqualified based on age. The remaining 139 participants were comprised of 105 students endorsing present DSH history, and 34 students with absent DSH history.

A power analysis for linear multiple regression was calculated using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to determine an adequate sample size. Seven was the highest number of predictors to be used in the multiple regression analyses for the current study; therefore, for the sake of being conservative, seven was the number of predictors utilized in the G*Power analysis. The power analysis utilizing a moderate effect size (0.15) and a power of .80 (α = .05) revealed that 103 participants would achieve adequate power in comparing the predictive potential of seven predictors on a given outcome. A moderate effect size is appropriate given the relevant clinical differences documented in the literature (Brunner et al., 2007; Klonsky & Olino, 2008; Lloyd-Richardson et al., 2007).

2.2 Measures

2.2.1 Demographic Questionnaire (Appendix D). A brief questionnaire solicited background information such as age, sex, relationship status, ethnicity, psychiatric diagnosis, past contact with mental health professionals, and past traumatic or abusive experiences.

2.2.2 Deliberate Self-Harm Offset Questionnaire (Appendix E; DSHOQ). A questionnaire was developed for the purposes of this study and solicited information about the offset of DSH. This questionnaire queried reasons for wanting to stop DSH
behaviours, what facilitated stopping (i.e. strategies used, or behaviours substituted for past DSH behaviours), and what barriers to stopping were experienced.

2.2.3 Coping Strategy Indicator (Appendix F; CSI; Amirkhan, 1990). The CSI is a 33-item self-report measure assessing coping strategies using a 3-point scale ranging from 0 (not at all) to 2 (a lot). The three subscales include Problem-Solving, Seeking Social Support, and Avoidance, and have demonstrated good internal consistency (α = .93, .89, and .84, respectively). Good test-retest reliability in a student sample was found (r = .82), and adequate discriminant and convergent validity has also been established (Amirkhan, 1990). In the current study, the Problem-Solving (α = .88), Seeking Social Support (α = .93), and Avoidance (α = .76) subscales demonstrated adequate to high internal consistency.

2.2.4 Deliberate Self-Harm Inventory (Appendix G; DSHI; Gratz, 2001;). The DSHI is a 17-item, behaviourally based, self-report questionnaire which assesses the frequency, severity, duration, and type of self-harm behaviour. The DSHI is based on the conceptual definition of DSH as the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent. This measure queries whether the individual has engaged in a certain type of DSH. If the individual responds affirmatively, the severity, frequency, and duration of the behaviour for that particular type of DSH is then assessed. This process of querying a certain type of DSH, then frequency, severity, and duration of the behaviour if that type of DSH was endorsed, is repeated for 17 types of DSH. The DSHI demonstrated adequate internal consistency in the original study (α = .82), as well as adequate test-retest reliability over a period of two to four weeks (r = .68; Gratz, 2001). The DSHI also demonstrated construct, convergent, and discriminant validity.
through comparisons with other self-harm measures, measures of related constructs, and measures of constructs hypothesized to be unrelated to self-harm (Gratz, 2001). For the current study, the internal consistency was Cronbach’s alpha of .64.

2.2.5 Inventory of Statements about Self Injury – Section II (Appendix H; ISAS; Klonsky & Glenn, 2009). The ISAS is a 39-item measure which asks about the functions of an individual’s DSH behaviours. The functions assessed include: (a) affect regulation, (b) interpersonal boundaries, (c) self-punishment (d) self-care, (e) anti-dissociation, (f) anti-suicide, (g) sensation seeking, (h) peer-bonding, (i) interpersonal influence, (j) toughness, (k) marking distress, (l) revenge, and (m) autonomy. All 13 functions have been implicated in the research literature as contributing to the motivation to self-harm (Klonsky, 2007). Responses are made on a 3-point Likert scale, corresponding to very relevant, somewhat relevant, or not relevant to the respondent’s DSH experiences. An exploratory factor analysis with promax rotation revealed two factors that were consistent with previous research (Nock & Prinstein, 2004). The first factor (eigenvalue = 3.5) represents socially-reinforcing, or interpersonal functions, and the second factor (eigenvalue = 1.4) represents automatically-reinforcing, or intrapersonal functions. For the current study, Factor 1 (interpersonal) demonstrated adequate internal consistency (α = .80). Factor 2 (intrapersonal) demonstrated strong internal consistency (α = .91).

2.2.6 Revised Adult Attachment Scale (Appendix I; RAAS; Collins & Read, 1990). The RAAS is an 18-item self-report questionnaire that identifies current adult attachment styles. The RAAS uses a 5-point Likert scale (not at all characteristic of me to very characteristic of me). The three subscales are: Close (measuring the extent to
which a person is comfortable with closeness and intimacy), Depend (measuring the extent to which a person is comfortable depending on others), and Anxiety (measuring the extent to which a person is worried about being rejected or unloved). The RAAS demonstrated reasonable levels of internal consistency for the Close ($\alpha = .85$), Depend ($\alpha = .88$), and Anxiety ($\alpha = .83$) subscales (Collins & Feeney, 2004). Using the scoring provided, these subscales can be used to reliably measure secure, anxious, and avoidant attachment (Collins, 1996). Scores on these three subscales were used in the data analysis for the current study. For the current study, internal consistency was adequate for the Close ($\alpha = .79$), Depend ($\alpha = .80$), and Anxiety ($\alpha = .87$) subscales.

2.2.7 Centre for Epidemiologic Studies Depression Scale (Appendix J; CESD; Radloff, 1977). The CESD is a 20-item measure pertaining to depressive symptoms experienced in the past seven days. Responses are made on a 4-point likert scale, with higher scores indicating a higher level of depressive symptoms. Items inquire about mood, motor functioning, interpersonal relationships, and somatic complaints. The CESD has good reliability ($\alpha = .90$). The CESD demonstrated strong internal consistency ($\alpha = .92$) for the current study.

2.2.8 Difficulties in Emotion Regulation Scale (Appendix K; DERS; Gratz & Roemer, 2004). The DERS is a 36-item questionnaire that assesses six dimensions of emotion regulation: personal acceptance or denial of emotional responses (Non-Acceptance), ability to engage in daily life or accomplish tasks when overwhelmed (Goals), ability to control emotions and ensuing reactions (Impulse), awareness and acknowledgement of emotions (Awareness), access and employment of tools to regulate emotions (Strategies), and ability to understand and interpret personal emotions (Clarity).
A 5-point Likert scale (almost never to almost always) is used to indicate how often the statements are true for the respondent. Higher scores on any given dimension indicate greater difficulty with that aspect of emotion regulation. This measure has been found to have adequate construct validity as demonstrated by high correlations between the DERS subscale scores and other commonly used measures of emotion regulation (Gratz & Roemer, 2004). The DERS was also demonstrated to have good test-retest reliability. Cronbach’s alpha ranged from .80 to .89 for the six dimensions, demonstrating adequate internal consistency of the subscales. An overall DERS score with high internal consistency (α = .93) was calculated and used in the data analysis for the current study. For the current study, the overall DERS score had high internal consistency (α = .94), and the subscales had Cronbach’s alpha scores ranging from .80 to .91.

2.2.9 MOS – Social Support Survey (Appendix L; MOS-SSS; Sherbourne & Stewart, 1991). The MOS-SSS is a 20-item questionnaire which assesses the perceived availability of various dimensions of social supports. There are four subscales, all of which have demonstrated high internal consistency: emotional/informational (α = .96), tangible (α = .92), affectionate (α = .94), and positive social interaction (α = .91). An overall functional social support index can also be calculated (α = .97). High convergent and discriminant validity of the survey items has also been found, supporting the dimensionality of the measure (Sherbourne & Stewart, 1991). The overall functional social support index was used in the data analysis for the current study and was found to have high internal consistency (α = .85).

2.3 Procedure
Students in undergraduate psychology courses at the University of Regina completed the DSHI in their classes as a pre-screen for DSH history (for consent form see Appendix B). All students identified with a present DSH history were contacted via email and invited to participate in the full study. A random sample of students who had endorsed an absent DSH history on the pre-screen were also contacted to participate in the full study to provide a control group. The selected pre-screened students participated in the study through the Department of Psychology Participant Pool at the University of Regina and were directed to access an online survey hosted by www.surveymonkey.com. The online survey was estimated to take approximately 45 minutes.

An online consent form (Appendix C) included pertinent information about the purposes of the study, withdrawal without penalty, anticipated risks and benefits, and the anticipated time required to complete the online questionnaires. Participants were also warned about the potentially distressing subject matter of the questions, and given the contact information of a mental health professional they could utilize in the event that they began to experience distress resulting from the questionnaire content. A likert-scale question querying each participant’s level of distress was included in the online battery. This question had a built-in “skip” function so participants who reported extreme distress automatically proceeded to a page with the phone number for the suicide distress hotline, and the opportunity for the participants to provide their contact information with the expectation that they will be contacted by a mental health professional in regards to the distress elicited by the questionnaire battery. No participants utilized the contact information provided, suggesting that the questionnaire content likely did not elicit significant distress.
Participants who did not endorse any past DSH behaviours in the pre-screen completed all online questionnaires, with the exception of the ISAS (querying motivations for DSH behaviours) and the DSHOQ (soliciting information regarding the cessation of DSH behaviours). Participants who did endorse DSH behaviours on the pre-screen completed all questionnaires. As the online surveys were completed, the data were entered into either SPSS for Windows Version 18.0 or Nvivo for Windows Version 7.0.

Those participants who had at one point engaged in DSH but at the time of the study no longer self-harmed, responded to a series of open-ended questions designed to query components of the process of DSH cessation. Inductive content analysis (Hseih & Shannon, 2005) was implemented for the coding of these responses via Nvivo for Windows Version 7.0. The responses for each question were first read to gain an understanding of the responses as a whole, and then the responses were re-read in order to start formulating themes. Loose themes were formed before attempting to individually code each response. Upon individual coding, themes were reworded or split into more focused categories. Finally, all responses were reread to ensure that all ideas were being captured by the coding system. The frequency at which all themes were coded is reported as number of responses and percentages of the total responses for each question.

3.0 Results

3.1 Descriptive Information

3.1.1 Demographics. Participants ranged in age from 18 to 35 years ($M = 20.50, SD = 3.58$). There were 34 male participants (24.5%) and 105 female participants (75.5%). This unequal gender distribution is likely a function of the demographics of the classes (1st and 2nd year undergraduate psychology courses) that were pre-screened for
participation, as they tend to be female dominant. All subsequent analyses were examined for sex differences and sex was not found to make any statistically significant contributions. Fifty-four percent \((n = 75)\) of the participants identified themselves as single, and 46\% \((n = 64)\) participants endorsed currently being in a relationship. In terms of ethnic origin, 54.7\% \((n = 76)\) of the participants reported being of European origin, 10.1\% \((n = 14)\) endorsed multiple origins, 5.8\% \((n = 8)\) endorsed Aboriginal origins, 4.3\% \((n = 6)\) endorsed African origins, 4.3\% \((n = 6)\) endorsed South Asian origins, 2.9\% \((n = 4)\) endorsed Middle Eastern origins, 1.4\% \((n = 2)\) endorsed Latin, Central or South American origins, 0.7\% \((n = 1)\) endorsed East Indian origins, and 15.8\% \((n = 22)\) endorsed Other ethnic origins. For descriptive information by sex within the overall sample, refer to Table 1.
Table 1
Demographic Information for the Entire Sample as a Function of Sex

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Male(^a)</th>
<th>Female(^b)</th>
<th>Total(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (M (SD))</td>
<td>20.68 (4.01)</td>
<td>20.44 (3.45)</td>
<td>20.50 (3.58)</td>
</tr>
<tr>
<td>(n (%))</td>
<td>(n (%))</td>
<td>(N (%))</td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>21 (61.8)</td>
<td>54 (51.4)</td>
<td>75 (54.0)</td>
</tr>
<tr>
<td>In a relationship</td>
<td>13 (38.2)</td>
<td>51 (48.6)</td>
<td>64 (46.0)</td>
</tr>
<tr>
<td>Ethnic Origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>22 (64.7)</td>
<td>54 (51.4)</td>
<td>76 (54.7)</td>
</tr>
<tr>
<td>Aboriginal</td>
<td>1 (2.9)</td>
<td>7 (6.7)</td>
<td>8 (5.8)</td>
</tr>
<tr>
<td>African</td>
<td>3 (8.8)</td>
<td>3 (2.9)</td>
<td>6 (4.3)</td>
</tr>
<tr>
<td>East Indian</td>
<td>1 (2.9)</td>
<td>-</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>Latin, Central, or South American</td>
<td>1 (2.9)</td>
<td>1 (1.0)</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>2 (5.9)</td>
<td>2 (1.9)</td>
<td>4 (2.9)</td>
</tr>
<tr>
<td>South Asian</td>
<td>-</td>
<td>6 (5.7)</td>
<td>6 (4.3)</td>
</tr>
<tr>
<td>Multiple Origins</td>
<td>1 (2.9)</td>
<td>13 (12.4)</td>
<td>14 (10.1)</td>
</tr>
<tr>
<td>Other Origin</td>
<td>3 (8.8)</td>
<td>19 (18.1)</td>
<td>22 (15.8)</td>
</tr>
<tr>
<td>Past Contact with Mental Health professionals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11 (32.4)</td>
<td>55 (52.4)</td>
<td>66 (47.5)</td>
</tr>
<tr>
<td>No</td>
<td>23 (67.6)</td>
<td>50 (47.6)</td>
<td>73 (52.5)</td>
</tr>
<tr>
<td>Frequency of Mental Health Contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>4 (36.4)</td>
<td>4 (7.4)</td>
<td>8 (12.3)</td>
</tr>
<tr>
<td>Two to five times</td>
<td>2 (18.2)</td>
<td>26 (48.1)</td>
<td>28 (43.1)</td>
</tr>
<tr>
<td>Six to ten times</td>
<td>1 (9.1)</td>
<td>11 (20.4)</td>
<td>12 (18.5)</td>
</tr>
<tr>
<td>Ongoing, for many years</td>
<td>4 (36.4)</td>
<td>13 (24.1)</td>
<td>17 (26.2)</td>
</tr>
<tr>
<td>Given a psychiatric diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-</td>
<td>2 (8.3)</td>
<td>2 (7.7)</td>
</tr>
<tr>
<td>Depression</td>
<td>-</td>
<td>8 (33.3)</td>
<td>8 (30.8)</td>
</tr>
<tr>
<td>Both Anxiety and Depression</td>
<td>-</td>
<td>9 (37.5)</td>
<td>9 (34.6)</td>
</tr>
<tr>
<td>Post Traumatic Stress Disorder</td>
<td>-</td>
<td>1 (4.2)</td>
<td>1 (3.8)</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>2 (100.0)</td>
<td>-</td>
<td>2 (7.7)</td>
</tr>
<tr>
<td>Other Diagnosis</td>
<td>-</td>
<td>4 (16.7)</td>
<td>4 (15.3)</td>
</tr>
</tbody>
</table>

\(^a\)\(n = 34\). \(^b\)\(n = 105\). \(^c\)\(N = 139\).
3.1.2 Mental health contact. Participants were asked a series of questions about past contact with mental health professionals and the outcomes of these contacts. Sixty-six participants (47.5%) reported having personally been in contact with mental health professionals in the past. When comparing individuals with a present or absent DSH history on mental health contact variables, there are multiple statistically significant differences (see Table 2). Of the individuals with a present DSH history, 56.2% reported contact with mental health professionals, compared to 20.6% of individuals with an absent DSH history, $\chi^2 (1, n = 139) = 11.67, p = .001, \phi = .306$.

Those participants with a present history of DSH reported past contact ranging from one occasion to ongoing contact for many years; and those with an absent history of DSH reported contact ranging from one to five times; however, this difference was not statistically significant. Individuals with present or absent DSH differed on whether or not there were given a psychiatric diagnosis, $\chi^2 (1, n = 139) = 7.41, p = .006, \phi = .253$, as only individuals with a history of DSH report being given a psychiatric diagnosis. Depression, anxiety, or some combination of the two diagnoses accounted for 73.1% of the diagnoses given to individuals with a history of DSH. Bipolar disorder was reported by 7.7% of the participants with a history of DSH, Post-Traumatic Stress Disorder by 3.8%, and “Other” diagnoses were reported by 15.3% of participants.

3.1.3 Trauma and abuse history. The participants were queried about five possible traumatic events and four possible experiences of abuse. See Table 3 for descriptive information on trauma and abuse history by sex for the overall sample. As participants were pre-screened for the study and thus are not a representative sample of a
Table 2

Demographic Information for the Entire Sample as a Function of DSH History

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Present&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Absent&lt;sup&gt;b&lt;/sup&gt;</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>20.51 (3.59)</td>
<td>20.44 (3.62)</td>
<td>0.11</td>
<td>.736</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>84 (80.0)</td>
<td>21 (61.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>21 (20.0)</td>
<td>13 (38.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>52 (49.5)</td>
<td>23 (67.6)</td>
<td>2.71</td>
<td>.100</td>
</tr>
<tr>
<td>In a relationship</td>
<td>53 (50.5)</td>
<td>11 (32.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic Origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>57 (54.3)</td>
<td>19 (55.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-European</td>
<td>48 (45.7)</td>
<td>15 (44.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Contact with Mental Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>professionals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>59 (56.2)</td>
<td>7 (20.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>46 (43.8)</td>
<td>27 (79.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Contact Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>6 (10.5)</td>
<td>2 (33.3)</td>
<td>4.06</td>
<td>.132</td>
</tr>
<tr>
<td>Two to ten times</td>
<td>34 (59.6)</td>
<td>4 (66.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ongoing, for many years</td>
<td>17 (29.8)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given a Psychiatric Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26 (24.5)</td>
<td>-</td>
<td>7.41</td>
<td>.006</td>
</tr>
<tr>
<td>No</td>
<td>80 (75.5)</td>
<td>33 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>n = 105.  <sup>b</sup>n = 34.  
**p < .01.  ***p < .001.
Table 3

*History of Trauma and Abuse for the Entire Sample as a Function of Sex*

<table>
<thead>
<tr>
<th>Trauma and Abuse History</th>
<th>Male&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Female&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Total&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Experienced a natural disaster</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (11.8)</td>
<td>1 (1.0)</td>
<td>5 (3.6)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>1 (2.9)</td>
<td>10 (9.5)</td>
<td>11 (7.9)</td>
</tr>
<tr>
<td>No</td>
<td>29 (85.3)</td>
<td>94 (89.5)</td>
<td>123 (88.5)</td>
</tr>
<tr>
<td>Experienced serious motor vehicle accident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (8.8)</td>
<td>8 (7.6)</td>
<td>11 (7.9)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>6 (17.7)</td>
<td>12 (11.4)</td>
<td>18 (13)</td>
</tr>
<tr>
<td>No</td>
<td>25 (73.5)</td>
<td>85 (81.0)</td>
<td>110 (79.1)</td>
</tr>
<tr>
<td>Experienced other serious accident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (5.9)</td>
<td>4 (3.8)</td>
<td>6 (4.3)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>2 (5.9)</td>
<td>9 (8.6)</td>
<td>11 (7.9)</td>
</tr>
<tr>
<td>No</td>
<td>30 (88.2)</td>
<td>92 (87.6)</td>
<td>122 (87.8)</td>
</tr>
<tr>
<td>Experienced sudden/unexpected death of a loved one</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (11.8)</td>
<td>14 (13.3)</td>
<td>18 (13.0)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>11 (32.3)</td>
<td>52 (49.5)</td>
<td>63 (45.3)</td>
</tr>
<tr>
<td>No</td>
<td>19 (55.9)</td>
<td>39 (37.1)</td>
<td>58 (41.7)</td>
</tr>
<tr>
<td>Experienced life threatening injury/illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (5.9)</td>
<td>6 (5.7)</td>
<td>8 (5.8)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>3 (8.8)</td>
<td>11 (10.5)</td>
<td>14 (10.0)</td>
</tr>
<tr>
<td>No</td>
<td>29 (85.3)</td>
<td>88 (83.8)</td>
<td>117 (84.2)</td>
</tr>
<tr>
<td>Experienced physical assault in adulthood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5 (14.7)</td>
<td>2 (1.9)</td>
<td>18 (13.0)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>5 (14.7)</td>
<td>14 (13.3)</td>
<td>8 (5.8)</td>
</tr>
<tr>
<td>No</td>
<td>24 (70.6)</td>
<td>89 (84.8)</td>
<td>113 (81.3)</td>
</tr>
<tr>
<td>Experienced physical abuse in childhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (5.9)</td>
<td>-</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>3 (8.8)</td>
<td>15 (14.3)</td>
<td>18 (13.0)</td>
</tr>
<tr>
<td>No</td>
<td>29 (85.3)</td>
<td>90 (85.7)</td>
<td>113 (81.3)</td>
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<tr>
<td>Experienced sexual assault in adulthood</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>3 (2.8)</td>
<td>3 (2.2)</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>2 (5.9)</td>
<td>15 (14.3)</td>
<td>17 (12.2)</td>
</tr>
<tr>
<td>No</td>
<td>29 (85.3)</td>
<td>87 (82.9)</td>
<td>119 (85.6)</td>
</tr>
<tr>
<td>Experienced sexual abuse in childhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Yes; experienced fear, horror, or helplessness</td>
<td>1 (2.9)</td>
<td>15 (14.3)</td>
<td>16 (11.5)</td>
</tr>
<tr>
<td>No</td>
<td>31 (97.1)</td>
<td>90 (85.7)</td>
<td>123 (88.5)</td>
</tr>
<tr>
<td>Experienced any type of trauma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24 (70.6)</td>
<td>78 (74.3)</td>
<td>102 (73.4)</td>
</tr>
<tr>
<td>Experienced any type of abuse</td>
<td>10 (29.4)</td>
<td>27 (25.7)</td>
<td>37 (26.6)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Yes</td>
<td>13 (38.2)</td>
<td>40 (38.1)</td>
<td>53 (38.1)</td>
</tr>
<tr>
<td>No</td>
<td>21 (61.8)</td>
<td>65 (61.9)</td>
<td>86 (61.9)</td>
</tr>
</tbody>
</table>

\(^a n = 34. \, ^b n = 105. \, ^c N = 139.\)
university population, history of trauma and abuse are best discussed in terms of participants with a present history of DSH (see Table 4).

The prevalence rates of past physical and sexual abuse in a DSH sample are of note. Twenty-one participants (20.0%) with a history of DSH reported having been physically assaulted in adulthood, whereas seventeen participants (16.2%) reported physical abuse in childhood. Twenty participants (19.0%) reporting having been sexually assaulted in adulthood, while fifteen participants (14.3%) reported childhood sexual abuse. High rates of associated fear, horror, and hopelessness were reported in concurrence with these incidents.

A series of chi-square tests for independence (with Yates Continuity Correction) was conducted in order to determine whether there were differences in trauma and abuse history between participants with a present or absent DSH history. The chi-square tests indicated a statistically significant association between past MVAs and DSH history, $\chi^2(1, n = 139) = 7.38$, $p = .007$, $\phi = .251$, as well as between adulthood sexual assault and DSH history, $\chi^2(1, n = 139) = 9.09$, $p = .014$, $\phi = .233$.

Taking all five types of trauma into consideration, it was determined that 21 (61.8%) individuals with an absent history of DSH compared to 81 (77.1%) individuals with a history of DSH had experienced at least one traumatic event. Accordingly, 38.2% of individuals with an absent DSH history had never experienced any trauma, whereas 22.9% of individuals with a present DSH history had never experienced trauma. This difference was not statistically significant, $\chi^2(1, n = 139) = 2.37$, $p = .124$, $\phi = .150$. 
### Table 4

**History of Trauma and Abuse as a Function of DSH History**

<table>
<thead>
<tr>
<th>Abuse history</th>
<th>History of DSH</th>
<th>$x^2$ (1)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present $^a$</td>
<td>Absent $^b$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$n$ (%)</td>
<td>$n$ (%)</td>
<td></td>
</tr>
<tr>
<td>Experienced a natural disaster</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11 (10.5)</td>
<td>5 (14.7)</td>
<td>0.131</td>
</tr>
<tr>
<td>No</td>
<td>94 (89.5)</td>
<td>29 (85.3)</td>
<td></td>
</tr>
<tr>
<td>Experienced serious motor vehicle accident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28 (26.7)</td>
<td>1 (2.9)</td>
<td>7.378</td>
</tr>
<tr>
<td>No</td>
<td>77 (73.3)</td>
<td>33 (97.1)</td>
<td></td>
</tr>
<tr>
<td>Experienced other serious accident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (14.3)</td>
<td>2 (5.9)</td>
<td>0.997</td>
</tr>
<tr>
<td>No</td>
<td>90 (85.7)</td>
<td>32 (94.1)</td>
<td></td>
</tr>
<tr>
<td>Experienced sudden/unexpected death of a loved one</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>61 (58.1)</td>
<td>20 (58.8)</td>
<td>0.000</td>
</tr>
<tr>
<td>No</td>
<td>44 (41.9)</td>
<td>14 (41.2)</td>
<td></td>
</tr>
<tr>
<td>Experienced life threatening injury/illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20 (19.0)</td>
<td>2 (5.9)</td>
<td>2.426</td>
</tr>
<tr>
<td>No</td>
<td>85 (81.0)</td>
<td>32 (94.1)</td>
<td></td>
</tr>
<tr>
<td>Experienced physical assault in adulthood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21 (20.0)</td>
<td>5 (14.7)</td>
<td>0.189</td>
</tr>
<tr>
<td>No</td>
<td>84 (80.0)</td>
<td>29 (85.3)</td>
<td></td>
</tr>
<tr>
<td>Experienced physical abuse in childhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17 (16.2)</td>
<td>3 (8.8)</td>
<td>0.613</td>
</tr>
<tr>
<td>No</td>
<td>88 (83.8)</td>
<td>31 (91.2)</td>
<td></td>
</tr>
<tr>
<td>Experienced sexual assault in adulthood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20 (19.0)</td>
<td>0 (0.0)</td>
<td>6.097</td>
</tr>
<tr>
<td>No</td>
<td>85 (81.0)</td>
<td>34 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Experienced sexual abuse in childhood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (14.3)</td>
<td>1 (2.9)</td>
<td>2.227</td>
</tr>
<tr>
<td>No</td>
<td>90 (85.7)</td>
<td>33 (97.1)</td>
<td></td>
</tr>
<tr>
<td>Experienced any trauma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81 (77.1)</td>
<td>21 (61.8)</td>
<td>2.372</td>
</tr>
<tr>
<td>No</td>
<td>24 (22.9)</td>
<td>13 (38.2)</td>
<td></td>
</tr>
<tr>
<td>Experienced any abuse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47 (44.8)</td>
<td>6 (17.6)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>58 (55.2)</td>
<td>28 (82.4)</td>
<td></td>
</tr>
</tbody>
</table>

*\( p < .05 \)  **\( p < .01 \).
\(^a_n = 105. \(^b_n = 34.\)
Similarly, when taking all four types of assault/abuse into consideration, it was determined that six (17.6%) of individuals with absent DSH history compared to 47 (44.8%) of individuals with a present history of DSH had experienced at least one type of abuse. Therefore, 82.4% of individuals with an absent DSH history compared to only 55.2% of individuals with a present DSH history reported having never experienced abuse. This difference in history of abuse was statistically significant, $\chi^2(1, n = 139) = 6.90, p = .009, \phi = .240$.

3.2 DSH Information

3.2.1 Coding. The DSHI was used to obtain information regarding DSH behaviours, frequency, severity, and duration. Participants were asked whether they had ever engaged in 16 different DSH behaviours. If they endorsed any given DSH behaviour, they were then asked additional questions such as how often they engaged in that behaviour, at what age they began, the amount of time in which they engaged, and whether or not they ever required medical attention due to injuries sustained. The DSHI includes a question about whether or not the participants have engaged in any type of DSH behaviour not included in the questionnaire. All responses to this question did not meet definitional criteria for DSH (e.g., “I starved myself”, “I took too many pills in a suicide attempt”); therefore, these responses were not included in subsequent analyses.

The nature of participants’ responses regarding the frequency of their DSH behaviours necessitated response recoding. If participants reported having self-harmed using any given behaviour once, it was coded as “1”, twice as “2”, and so on, until “9”. If a participant reported self-harming between 10 and 19 times, it was coded as “10”, between 20 and 49 times was coded as “11”, and any report over 50 times was coded as
“12”. There were 19 participants who reported at least one behaviour that was coded as a 12, another 15 participants who reported at least one behaviour coded as 11, and an additional 31 participants who reported at least one behaviour coded as a 10. The remaining 41 participants reported having self-harmed, but never more than nine times on any given behaviour.

3.2.2 DSH frequency. A frequency distribution of total DSH instances was derived from the DSHI using information on different types of DSH behaviours and the number of times in which participants engaged in each behaviour. Contrary to the original hypothesis, there was no apparent division between transient and persistent DSH histories, and instead the frequency distribution seemed to indicate a continuum of DSH frequency (see Figure 2). The x-axis of this frequency distribution does not contain the true number of DSH incidents; rather it is based on the coding system explained above. This continuum was apparent for almost all of the different DSH behaviours. As mentioned, there were four DSH behaviours that were not endorsed by any participants; however, of the remaining 12 DSH behaviours, there was only one (rubbing glass into one’s own skin) that did not receive responses ranging from once to a code of 10, 11, or 12. Therefore, frequency of DSH spans a wide range when considering the majority of separate DSH behaviours, and not just DSH behaviours viewed as a whole.

A series of independent t-tests indicated that there were no sex differences in terms of frequency of DSH behaviours, or total types of DSH behaviours. A series of chi-square tests indicated that there were no sex differences in terms of DSH history group membership (either present versus absent, or transient versus persistent). See Table 5 for information on sex differences across various DSH features.
Figure 2

*DSH Frequency Distribution*
Table 5

*Sex Differences and DSH Features*

<table>
<thead>
<tr>
<th>DSH Variables</th>
<th>Male(^a)</th>
<th>Female(^b)</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSH Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M (SD))</td>
<td>8.18 (10.15)</td>
<td>12.38 (14.61)</td>
<td>1.56</td>
<td>.121</td>
</tr>
<tr>
<td>Total Types of DSH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(M (SD))</td>
<td>1.76 (1.72)</td>
<td>2.51 (2.07)</td>
<td>1.88</td>
<td>.062</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DSH History</th>
<th>(n (%))</th>
<th>(n (%))</th>
<th>(x^2)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>21 (61.8)</td>
<td>84 (80.0)</td>
<td>3.69</td>
<td>.055</td>
</tr>
<tr>
<td>Absent</td>
<td>13 (38.2)</td>
<td>21 (20.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSH History</td>
<td></td>
<td></td>
<td>0.05</td>
<td>.820</td>
</tr>
<tr>
<td>Transient</td>
<td>14 (66.7)</td>
<td>58 (69.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistent</td>
<td>7 (33.3)</td>
<td>26 (31.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)n = 34. \(^b\)n = 105.
Given that the frequency distribution of DSH incidents indicated that DSH is best viewed on a continuum and not categorically, further analyses were conducted in addition to the proposed categorical analyses. The results from the original proposed analyses can be viewed as further evidence supporting the notion that DSH is likely best viewed as a continuum. In order to illuminate possible predictors of the frequency of DSH rather than the prediction of the DSH history group membership, a series of hierarchical multiple regressions was conducted.

3.2.3 Categorization of DSH histories. In order to test the original hypotheses as proposed, a method for categorizing participants as absent, transient, or persistent DSH history was devised. If participants reported having never engaged in any DSH behaviours, they were categorized as absent DSH history. If participants reported having ever engaged in any behaviour that had been coded as an 11 or 12 (i.e., engaged more than 20 times), they were categorized as persistent. The remaining participants who reported a DSH history in which they engaged in any behaviour less than 20 times were categorized as transient. This method of categorization led to 34 participants with a history of absent DSH, 72 participants with transient DSH and, and 33 participants with persistent DSH.

3.2.4 Types of DSH behaviours. Of the 139 participants, 105 of them endorsed at least one incident of DSH in their lifetime. Thirty of the participants endorsed current involvement in DSH. Because these participants were pre-screened for a history of DSH, their involvement and the frequency of involvement in various types of DSH behaviours cannot be generalized to an un-screened population. Therefore, the frequency of DSH behaviours is discussed solely as frequency within a self-harming population.
Cutting one’s wrist, arms, or other areas of the body was the most frequently engaged in type of DSH behaviour with 57.1% \((n = 60)\) of the self-harming participants endorsing this method. The other most frequently endorsed DSH behaviours were sticking sharp objects into one’s skin \((35.2\%; \ n = 37)\), and carving words into one’s skin \((30.5\%; \ n = 32)\). Of the 16 behaviours queried in the DSHI, four DSH behaviours were not endorsed by any participants (rubbing sandpaper on one’s own body, dripping acid onto one’s own skin, using bleach to scrub one’s own skin, and intentionally breaking one’s own bones). See Table 6 for further information on the frequency of DSH behaviours reported by sex.

A series of chi-square tests for independence (with Yates Continuity Correction) indicated a statistically significant association between sex and three of the DSH behaviours. Within a self-harming population, female participants were more likely than male participants to report cutting their wrists, arms or other areas of their body, \(\chi^2(1, \ n = 105) = 13.67, \ p < .001, \ \Phi = .385\). Female participants were also more likely than male participants to report carving words into their skin, \(\chi^2(1, \ n = 105) = 4.27, \ p = .039, \ \Phi = .228\). Male participants were more likely to report burning themselves with a lighter or match, \(\chi^2(1, \ n = 105) = 15.15, \ p < .001, \ \Phi = .408\).

3.3 The Association between DSH and Related Constructs

3.3.1 Association between affect regulation and DSH history. The first hypothesis stated that individuals with absent history of DSH would display the highest ability to regulate affect (as demonstrated by a lower DERS score), followed by those with a transient history, while those individuals with a persistent history of DSH would display the lowest affect-regulation ability. A series of ANOVAs were used to test
Table 6

*Frequency of Different Types of DSH Behaviours by Sex*

<table>
<thead>
<tr>
<th>DSH Behaviours</th>
<th>Male(^a)</th>
<th>Female(^b)</th>
<th>Total(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n(%))</td>
<td>(n(%))</td>
<td>(N(%))</td>
</tr>
<tr>
<td>Cut wrist, arms, or other area(s) of one’s body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (19.0)</td>
<td>56 (36.1)</td>
<td>60 (57.1)</td>
</tr>
<tr>
<td>No</td>
<td>17 (81.0)</td>
<td>99 (63.9)</td>
<td>45 (42.9)</td>
</tr>
<tr>
<td>Burned oneself with a cigarette</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (28.6)</td>
<td>11 (13.1)</td>
<td>17 (16.2)</td>
</tr>
<tr>
<td>No</td>
<td>15 (71.4)</td>
<td>73 (86.9)</td>
<td>88 (83.8)</td>
</tr>
<tr>
<td>Burned oneself with a lighter or match</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (57.1)</td>
<td>12 (14.3)</td>
<td>24 (22.9)</td>
</tr>
<tr>
<td>No</td>
<td>9 (42.9)</td>
<td>72 (85.7)</td>
<td>81 (77.1)</td>
</tr>
<tr>
<td>Carved words into one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (5.9)</td>
<td>30 (35.7)</td>
<td>32 (30.5)</td>
</tr>
<tr>
<td>No</td>
<td>19 (90.5)</td>
<td>54 (64.3)</td>
<td>73 (69.5)</td>
</tr>
<tr>
<td>Carved pictures, designs or other marks into one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (19.0)</td>
<td>24 (28.6)</td>
<td>28 (26.7)</td>
</tr>
<tr>
<td>No</td>
<td>17 (81.0)</td>
<td>60 (71.4)</td>
<td>77 (73.3)</td>
</tr>
<tr>
<td>Scratched oneself to the point of scarring or bleeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (19.0)</td>
<td>27 (32.1)</td>
<td>31 (29.5)</td>
</tr>
<tr>
<td>No</td>
<td>17 (81.0)</td>
<td>57 (67.9)</td>
<td>74 (70.5)</td>
</tr>
<tr>
<td>Bit oneself, to the point of breaking one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (19.0)</td>
<td>15 (17.9)</td>
<td>19 (18.1)</td>
</tr>
<tr>
<td>No</td>
<td>17 (81.0)</td>
<td>69 (82.1)</td>
<td>86 (81.9)</td>
</tr>
<tr>
<td>Rubbed sandpaper on one’s own body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>21 (100.0)</td>
<td>84 (100.0)</td>
<td>105 (100.0)</td>
</tr>
<tr>
<td>Dripped acid on one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>21 (100.0)</td>
<td>84 (100.0)</td>
<td>105 (100.0)</td>
</tr>
<tr>
<td>Used bleach, comet, or oven cleaner to scrub one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>21 (100.0)</td>
<td>84 (100.0)</td>
<td>105 (100.0)</td>
</tr>
<tr>
<td>Rubbed glass into one’s skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>5 (6.0)</td>
<td>5 (4.8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event</td>
<td>Yes</td>
<td>No</td>
<td>M (SD)</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-----------</td>
<td>----------</td>
<td>--------------</td>
</tr>
<tr>
<td>Stuck sharp objects into one’s skin</td>
<td>6 (28.6)</td>
<td>15 (71.4)</td>
<td></td>
</tr>
<tr>
<td>Broken one’s own bones</td>
<td></td>
<td>21 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Banged one’s head against something, to the point of bruising</td>
<td>6 (28.6)</td>
<td>15 (71.4)</td>
<td></td>
</tr>
<tr>
<td>Punched oneself, to the point of bruising</td>
<td>3 (14.3)</td>
<td>18 (85.7)</td>
<td></td>
</tr>
<tr>
<td>Prevented wounds from healing</td>
<td>7 (33.3)</td>
<td>14 (66.7)</td>
<td></td>
</tr>
<tr>
<td>Done anything else to hurt oneself that was not already queried</td>
<td>5 (23.8)</td>
<td>16 (76.2)</td>
<td></td>
</tr>
<tr>
<td>Number of different DSH behaviours engaged in</td>
<td></td>
<td></td>
<td>2.76 (1.45)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.11 (1.88)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.04 (1.80)</td>
</tr>
</tbody>
</table>

\(a n = 21. \quad b n = 84. \quad c N = 105.\)
differences in affection regulation (as measured by the DERS total and subscale scores) between DSH histories. There was a statistically significant difference for the total DERS score as well as all the subscale scores (with the exception of the Awareness subscale). Effect sizes ($\eta^2$) are determined based on the following benchmarks: small effect equals .01; medium effect equals .06; and a large effect is equivalent to .14 (Cohen, 1988).

Therefore, the DERS total score, $F(2, 136) = 8.02, p < .001, \eta^2 = .106$ and the Strategies subscale score, $F(2, 136) = 8.07, p < .001, \eta^2 = .106$, both had medium-large effect sizes. The Nonacceptance subscale score, $F(2, 136) = 4.41, p = .014, \eta^2 = .061$, Goals subscale score, $F(2, 136) = 5.27, p = .010, \eta^2 = .065$, Impulse subscale score, $F(2, 136) = 5.30, p = .006, \eta^2 = .072$, and Clarity subscale score, $F(2, 136) = 4.42, p = .014, \eta^2 = .061$, all had medium effect sizes. See Table 7 for DERS mean scores as a function of DSH history.

Post-hoc comparisons using Tukey HSD test revealed no group differences between transient and persistent DSH histories; however, there were multiple statistically significant differences between absent DSH history and both transient and persistent DSH histories. The DERS total mean score for absent DSH history ($M = 78.39, SD = 20.01$) was lower than transient DSH history ($M = 91.67, SD = 22.51$) and persistent DSH history ($M = 100.00, SD = 23.96$). Similarly, the Nonacceptance subscale mean score for absent DSH history ($M = 2.02, SD = 0.89$) was lower than the score for transient ($M = 2.58, SD = 1.07$) and persistent ($M = 2.71, SD = 1.09$) DSH histories. The Goals subscale mean score for absent DSH history ($M = 2.75, SD = 1.15$) was also lower than scores for transient ($M = 3.37, SD = 1.02$) and persistent ($M = 3.45, SD = 1.05$) DSH histories. The Strategies subscale mean score for absent DSH history ($M = 1.80, SD = 0.75$) was lower
### Table 7
**Means and Standard Deviations for Pertinent Measures as a Function of DSH History**

<table>
<thead>
<tr>
<th>Scale</th>
<th>DSH History</th>
<th>Absent&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Transient&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Persistent&lt;sup&gt;c&lt;/sup&gt;</th>
<th>F(2, 136)</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAAS</td>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAAS-S</td>
<td></td>
<td>20.94 (4.90)</td>
<td>19.36 (4.87)</td>
<td>18.41 (5.28)</td>
<td>2.22</td>
<td>.113</td>
<td>.032</td>
</tr>
<tr>
<td>RAAS-V</td>
<td></td>
<td>17.97 (5.12)</td>
<td>16.99 (4.81)</td>
<td>14.15 (5.26)</td>
<td>5.53</td>
<td>.005**</td>
<td>.064</td>
</tr>
<tr>
<td>RAAS-X</td>
<td></td>
<td>16.76 (5.01)</td>
<td>19.78 (6.40)</td>
<td>21.00 (5.79)</td>
<td>4.63</td>
<td>.011*</td>
<td>.075</td>
</tr>
<tr>
<td>CSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI-SS</td>
<td></td>
<td>20.27 (6.05)</td>
<td>20.69 (5.60)</td>
<td>21.59 (5.94)</td>
<td>0.46</td>
<td>.630</td>
<td>.007</td>
</tr>
<tr>
<td>CSI-PS</td>
<td></td>
<td>17.00 (4.05)</td>
<td>20.01 (4.69)</td>
<td>21.59 (5.40)</td>
<td>8.22</td>
<td>.001***</td>
<td>.108</td>
</tr>
<tr>
<td>CSI-A</td>
<td></td>
<td>21.94 (4.09)</td>
<td>19.51 (4.06)</td>
<td>18.05 (4.64)</td>
<td>7.30</td>
<td>.001***</td>
<td>.097</td>
</tr>
<tr>
<td>DERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>78.39 (20.09)</td>
<td>91.67 (22.51)</td>
<td>100.00 (23.96)</td>
<td>8.02</td>
<td>.001***</td>
<td>.106</td>
</tr>
<tr>
<td>DERS-N</td>
<td></td>
<td>2.02 (0.89)</td>
<td>2.58 (1.07)</td>
<td>2.71 (1.09)</td>
<td>4.41</td>
<td>.014*</td>
<td>.061</td>
</tr>
<tr>
<td>DERS-G</td>
<td></td>
<td>2.75 (1.15)</td>
<td>3.37 (1.02)</td>
<td>3.45 (1.05)</td>
<td>4.72</td>
<td>.010**</td>
<td>.065</td>
</tr>
<tr>
<td>DERS-I</td>
<td></td>
<td>1.89 (0.91)</td>
<td>2.18 (0.89)</td>
<td>2.60 (0.91)</td>
<td>5.30</td>
<td>.006**</td>
<td>.072</td>
</tr>
<tr>
<td>DERS-A</td>
<td></td>
<td>2.70 (0.76)</td>
<td>2.59 (0.76)</td>
<td>2.73 (0.84)</td>
<td>4.84</td>
<td>.014*</td>
<td>.061</td>
</tr>
<tr>
<td>DERS-S</td>
<td></td>
<td>1.80 (0.74)</td>
<td>2.35 (0.92)</td>
<td>2.64 (0.90)</td>
<td>8.07</td>
<td>.001***</td>
<td>.106</td>
</tr>
<tr>
<td>DERS-C</td>
<td></td>
<td>2.12 (0.62)</td>
<td>2.38 (0.72)</td>
<td>2.68 (0.99)</td>
<td>4.42</td>
<td>.014*</td>
<td>.061</td>
</tr>
</tbody>
</table>

*Note.* RAAS = Revised Adult Attachment Scale; RAAS – S = Secure subscale; RAAS – V = Avoidant subscale; RAAS – X = Anxious subscale; CSI = Coping Styles Indicator; CSI – SS = Social Support subscale; CSI – PS = Problem Solving subscale; CSI – A = Avoidance subscale; DERS = Difficulties with Emotion Regulation Scale (higher scores indicate more difficulty with that facet of emotion regulation); DERS-N = Nonacceptance subscale; DERS-G = Goals subscale; DERS-I = Impulse subscale; DERS-A = Awareness subscale; DERS-S = Strategies subscale; DERS-C = Clarity subscale. η² = eta-squared.  
<sup>a</sup>n = 33.  
<sup>b</sup>n = 72.  
<sup>c</sup>n = 34.  
*p < .05.  
**p < .01.  
***p < .001.
than the scores for transient ($M = 2.35, SD = 0.92$) and persistent ($M = 2.64, SD = 0.90$) DSH histories. Conversely, the Impulse subscale mean score for absent DSH history ($M = 1.89, SD = 0.92$) was lower than the score for persistent DSH history ($M = 2.60, SD = 0.91$) only. The Clarity subscale mean score for absent DSH history ($M = 2.12, SD = 0.62$) was also lower than the score for persistent DSH history only ($M = 2.68, SD = 0.99$). As higher scores on the DERS indicate more difficulty in that particular facet of affect regulation, it is apparent that individuals with absent DSH history, on average, have the least difficulty with affect regulation. This series of ANOVAs also indicates that in some areas of affect regulation (Impulses and Clarity), those individuals with transient DSH histories have less difficulty than individuals with persistent DSH histories.

Although transient DSH history was not completely distinct from the other histories in terms of ability to regulate affect, the first hypothesis was partially supported.

### 3.3.2 Association between coping styles and DSH history.

The second hypothesis stated that individuals with a transient DSH history would be identifiable as a distinct group as they would tend to utilize different coping styles than the individuals with either a persistent or absent DSH history. This hypothesis was tested using an ANOVA in order to examine the relationship between DSH histories and coping styles (as measured by the CSI). There were no differences among DSH histories within the CSI - Social support subscale, $F(2, 136) = 0.36, p = .698, \eta^2 = .007$; however, there was a statistically significant difference in the CSI - Problem solving subscale, $F(2, 136) = 8.22, p < .001, \eta^2 = .108$, and CSI - Avoidance subscale, $F(2, 136) = 7.30, p < .001, \eta^2 = .097$. There were medium effects for both types of coping strategies. See Table 7 for CSI mean scores as a function of DSH history.
Post-hoc comparisons using Tukey HSD test indicated that individuals with absent DSH history ($M = 17.00$, $SD = 4.05$) had a lower score on the Problem solving subscale than did individuals with persistent DSH history ($M = 21.56$, $SD = 5.41$), and transient DSH history ($M = 20.01$, $SD = 4.69$). Individuals with absent DSH history ($M = 21.94$, $SD = 4.09$) had higher scores on the Avoidance subscale than those individuals with either persistent DSH history ($M = 18.06$, $SD = 4.64$) or transient DSH history ($M = 19.51$, $SD = 4.06$). Individuals with persistent and transient DSH histories were more likely to use a Problem-solving coping strategy, whereas individuals with absent DSH history were more likely to use an Avoidance coping strategy. Although individuals with a transient DSH history were distinguishable from individuals with absent DSH history in terms of coping styles, they do not report coping styles that were unique from those used by individuals with a persistent DSH history, providing only partial support for this hypothesis.

3.3.3 Association between motivations and DSH history. The second hypothesis also stated that individuals with a transient history of DSH would be identifiable as a distinct group, as they would have different DSH motivations than individuals with either a persistent or absent DSH history. This part of the hypothesis was tested using a chi-square test for independence in order to examine the relationship between the different DSH histories and motivations to self-harm (as measured by the ISAS). This test indicated no statistically significant association between DSH history and either interpersonal ($n = 10$) or intrapersonal ($n = 51$) motivations to self-harm, $\chi^2 (1, n = 61) = 0.60$, $p = 0.440$, $\phi = .099$. However, an independent $t$-test indicated that there was a statistically significant difference in mean number of DSH incidents, $t (59) = 2.07$,
\( p = .042, \eta^2 = .064 \), among individuals with intrapersonal motivations \((M = 10.20, SD = 8.18)\) and interpersonal motivations \((M = 21.10, SD = 16.13)\). With a moderate effect, individuals engaging in DSH with interpersonal motivations tend to engage in a higher mean number of DSH behaviours than individuals with intrapersonal motivations.

This discrepancy between the chi-square test (examining categorical differences), and the t-test (examining continuous mean score differences) could be a function of the difficulty that arises in trying to categorize DSH histories. However, the transient DSH history as currently defined and categorized did not have unique DSH motivations, and as such, the second hypothesis was not supported.

### 3.3.4 Association between attachment orientation and DSH history.

The third hypothesis stated that higher secure attachment scores would be associated with absent or transient DSH history, and higher insecure attachment (anxious and avoidant) scores would be associated with a persistent DSH history. This hypothesis was tested using a one-way analysis of variance (ANOVA). Using the ANOVA, differences between DSH histories were examined in terms of attachment orientations (as measured by the RAAS). There was a statistically significant difference between groups (absent, transient, and persistent DSH history) in both anxious attachment orientation, \( F (2, 136) = 4.63, p = .011, \eta^2 = .075 \), and avoidant attachment orientation, \( F (2, 136) = 5.53, p = .005, \eta^2 = .064 \). This indicates a medium effect for both types of attachment orientation. There was no statistically significant difference for secure attachment orientation, \( F (2, 136) = 2.22, p = .113 \). See Table 7 for RAAS mean scores as a function of DSH history.

Post-hoc comparisons using Tukey HSD test further elucidated the group differences. For avoidant attachment orientation, the mean score for absent DSH history
transient DSH history ($M = 16.99$, $SD = 4.82$) was also higher than persistent DSH history. Individuals with either absent or transient DSH history tend to have higher scores on avoidant attachment than those individuals with a persistent DSH history. For anxious attachment orientation, the mean score for absent DSH history ($M = 16.76$, $SD = 5.00$) was lower than both persistent DSH history ($M = 21.00$, $SD = 5.79$) and transient DSH history ($M = 19.78$, $SD = 6.40$). Individuals with absent DSH history tend to have lower scores on anxious attachment orientation than individuals with either transient or persistent DSH histories.

Contrary to the hypothesis, no specific DSH history was found to have higher secure attachment scores. Furthermore, individuals with either transient or persistent DSH histories scored higher on a form of insecure attachment (anxious attachment orientation) than individuals with absent DSH history. Although it was hypothesized that individuals with transient DSH would be more similar to those with absent DSH history, their scores were more similar to individuals with persistent DSH.

A series of one-way within-group ANOVAs were conducted to compare DSH histories on Secure, Avoidant, and Anxious attachment orientation scores. There was a significant effect for attachment orientation scores among individuals with a persistent DSH history, Wilks’ $\lambda = .58$, $F (2, 32) = 11.59$, $p < .001$. Pairwise comparisons indicated that the scores for Avoidant attachment ($M = 14.15$, $SD = 0.90$) were statistically significantly lower than scores for both Secure attachment ($M = 18.41$, $SD = 0.91$) and Anxious attachment ($M = 21.00$, $SD = 0.99$). There was also a significant effect for attachment orientation scores among individuals with a transient DSH history, Wilks’ $\lambda =
Pairwise comparisons indicated that the scores for Avoidant attachment ($M = 16.99, SD = 0.57$) were statistically significantly lower than scores for Secure attachment ($M = 19.36, SD = 0.57$). The pairwise comparisons indicating that Anxious attachment ($M = 19.78, SD = 0.75$) was higher than Avoidant attachment ($M = 16.99, SD = 0.57$) was approaching statistical significance. A significant effect for attachment scores among individuals with an absent DSH history was also found, Wilks’ $\lambda = .64, F (2, 31) = 8.75, p = .001$. Pairwise comparisons indicated that the scores for Secure attachment ($M = 20.94, SD = 0.85$) were statistically significantly higher than scores for both Avoidant attachment ($M = 17.97, SD = 0.89$) and Anxious attachment ($M = 16.76, SD = 0.87$). Therefore, in alignment with the hypothesis, individuals with an absent DSH history tend to have higher secure attachment scores and individuals with a present DSH history tend to have higher insecure attachment scores.

### 3.3.5 Association between attachment orientation and DSH motivations.

The fourth hypothesis stated that individuals who engaged in DSH for interpersonal motivations would receive higher scores on anxious attachment orientation, whereas individuals who engaged in DSH for intrapersonal motivations would receive higher scores on avoidant attachment orientation. After selecting only those individuals with a present history of DSH the fourth hypothesis was tested using a series of independent $t$-tests. In this way, the relationship between motivations to self-harm (as measured by the ISAS) and attachment orientation (as measured by the RAAS) could be examined (see Table 8).

There were no statistically significant differences in scores for secure attachment between interpersonal motivations ($n = 11$) and intrapersonal motivations ($n = 51$) to
engage in DSH, \( t(62) = 0.36, p = .716, \eta^2 = .002 \). There were statistically significant differences in scores for avoidant attachment orientation, \( t(62) = 3.10, p = .003, \eta^2 = .061 \), among individuals with intrapersonal motivations (\( M = 14.23, SD = 4.31 \)) versus interpersonal motivations (\( M = 18.64, SD = 4.20 \)). Therefore, those individuals with interpersonal motivations for engaging in DSH had higher scores on avoidant attachment, and the magnitude of the differences in scores was moderate. There were also statistically significant differences in scores for anxious attachment, \( t(62) = 2.69, p = .009, \eta^2 = .105 \), among individuals with interpersonal motivations (\( M = 16.36, SD = 5.73 \)) versus intrapersonal motivations (\( M = 21.64, SD = 5.97 \)). Individuals with intrapersonal motivations for engaging in DSH had higher scores on anxious attachment, and the magnitude of the differences in scores was moderate. This finding was contrary to the

<table>
<thead>
<tr>
<th>Attachment Orientation</th>
<th>Motivations to Engage in DSH</th>
<th></th>
<th>( t ) (41)</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interpersonal(^a)</td>
<td>Intrapersonal(^b)</td>
<td>( t ) (41)</td>
<td>( p )</td>
</tr>
<tr>
<td>RAAS-S</td>
<td>18.82 (4.56)</td>
<td>18.19 (5.37)</td>
<td>0.36</td>
<td>.716</td>
</tr>
<tr>
<td>( M (SD) )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAAS-V</td>
<td>18.64 (4.20)</td>
<td>14.23 (4.31)</td>
<td>3.10**</td>
<td>.003</td>
</tr>
<tr>
<td>( M (SD) )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAAS-X</td>
<td>16.36 (5.73)</td>
<td>21.64 (5.97)</td>
<td>2.69**</td>
<td>.009</td>
</tr>
</tbody>
</table>

\(^a\)\( n = 11 \). \(^b\)\( n = 54 \).

** \( p < .01 \).
hypothesis that stated that interpersonal motivations would be associated with anxious
attachment and intrapersonal motivations would be associated with avoidant attachment.

3.4 Predictors of DSH History Group Membership

A series of logistic regressions were conducted to determine whether social
factors or psychological factors were more predictive of the three DSH histories, and
which combination of these variables appeared to have the most predictive utility. First, a
series of logistic regressions were conducted using the categories of present \( n = 105 \) or
absent \( n = 34 \) DSH history in order to determine if there are differences between
individuals who do and do not engage in DSH. The second series of logistic regressions
were conducted using the categories of persistent \( n = 33 \) or transient \( n = 72 \) DSH
history in order to determine if there are differences between individuals with different
patterns and severity of DSH.

3.4.1 Present versus absent DSH history. Using present (transient and
persistent DSH history) or absent DSH, a social model (i.e., model examining predictive
utility of social factors) using three predictor variables (MOS-SSS total score, history of
any sexual abuse, and history of any physical abuse) was assessed. This model
containing the three predictors was statistically significant, \( \chi^2 (3, N = 139) = 21.40, p < 0.001 \), indicating that the model was able to distinguish between respondents who
reported and did not report a history of DSH. See Table 9 for the summary of the
correlations between predictors and Table 10 for the model. The model as a whole
explained between 14.3\% (Cox and Snell \( R^2 \)) and 21.3\% (Nagelkerke \( R^2 \)) of the variance
in DSH history and correctly classified 78.4\% of cases. Two of the three predictor
variables made a unique statistically significant contribution to the model (MOS-SSS

63
Table 9

Summary of Correlations between Social Predictors of DSH History across the Entire Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>MOS-SSS</th>
<th>Any Physical Abuse</th>
<th>Any Sexual Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOS-SSS</td>
<td>------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Any Physical Abuse</td>
<td>-.05</td>
<td>------</td>
<td>.30**</td>
</tr>
<tr>
<td>Any Sexual abuse</td>
<td>-.10</td>
<td>.30**</td>
<td>------</td>
</tr>
</tbody>
</table>

*Note.* N=139. Any sexual abuse = any history of either childhood or adulthood sexual abuse; Any physical abuse = any history of either childhood or adulthood physical abuse; MOS-SSS total = MOS – Social Support Survey total score.

**p < .01.
Table 10

**Social Predictors of Present or Absent DSH History**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$ (SE)</th>
<th>Wald Test</th>
<th>$p$</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.55 (1.44)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any sexual abuse</td>
<td>2.37 (1.05)</td>
<td>5.05*</td>
<td>.025</td>
<td>10.65</td>
<td>1.35</td>
</tr>
<tr>
<td>Any physical abuse</td>
<td>0.50 (0.54)</td>
<td>0.86</td>
<td>.355</td>
<td>1.66</td>
<td>0.57</td>
</tr>
<tr>
<td>MOS-SSS total</td>
<td>-0.05 (0.18)</td>
<td>7.45**</td>
<td>.006</td>
<td>0.95</td>
<td>0.92</td>
</tr>
</tbody>
</table>

*Note. $R^2 = .143$ (Cox & Snell), .213 (Nagelkerke). $\chi^2$ (3, $N = 139$) = 21.40, $p < 0.001$. Any sexual abuse = any history of either childhood or adulthood sexual abuse; Any physical abuse = any history of either childhood or adulthood physical abuse; MOS-SSS total = MOS – Social Support Survey total score. *$p < .05$. **$p < .01$. 
total score and history of any sexual abuse). The strongest social predictor of reporting a present DSH history was a history of sexual abuse, with an odds ratio of 10.65. This indicated that participants who had a history of either childhood or adulthood sexual abuse were over 10 times more likely to report a present history of DSH than those who did not report a history of sexual abuse. The odds ratio for MOS-SSS total score was 0.95, indicating that the higher the total score on this measure, the less likely a person is to have a history of DSH. For every additional score-unit on the MOS-SSS, the odds of a participant having a history of DSH decreases by a factor of 0.95.

A psychological model (i.e., model examining predictive utility of psychological factors) using seven predictor variables (DERS total score, CSI Social support subscale, CSI – Problem solving subscale, CSI – Avoidance subscale, RAAS – Secure subscale, RAAS – Avoidant subscale, and RAAS – Anxious subscale) was similarly assessed. The model containing seven predictors was statistically significant, $\chi^2(7, N = 139) = 23.67, p = .001$, indicating that this model was also able to distinguish between respondents with a present and absent history of DSH. See Table 11 for a summary of the correlations between predictors in the model and Table 12 for the summary of the model. The model as a whole explained between 15.7% (Cox and Snell $R^2$) and 23.3% (Nagelkerke $R^2$) of the variance in DSH history and correctly classified 78.4% of cases. Only one of the independent variables, CSI – Problem Solving subscale, made a unique statistically significant contribution to the model. The CSI – Problem Solving subscale was the strongest psychological predictor, with an odds ratio of 1.13. The odds ratio demonstrates minimal change in the likelihood of having a history of DSH on the basis of a one unit change on the CSI – Problem Solving subscale.
Table 11

*Summary of Correlations between Psychological Predictors of DSH History across the Entire Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>DERS total</th>
<th>CSI-SS</th>
<th>CSI-PS</th>
<th>CSI-A</th>
<th>RAAS-S</th>
<th>RAAS-V</th>
<th>RAAS-X</th>
</tr>
</thead>
<tbody>
<tr>
<td>DERS total</td>
<td>-----</td>
<td>.11</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>CSI-SS</td>
<td>.24**</td>
<td>.31**</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>CSI-PS</td>
<td>.24**</td>
<td>.31**</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>CSI-A</td>
<td>-.40**</td>
<td>-.04</td>
<td>-.13</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>RAAS-S</td>
<td>-.32**</td>
<td>-.36**</td>
<td>-.17*</td>
<td>.35**</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>RAAS-V</td>
<td>-.39**</td>
<td>-.38**</td>
<td>-.19*</td>
<td>.35**</td>
<td>.54**</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>RAAS-X</td>
<td>.42**</td>
<td>.02</td>
<td>.23**</td>
<td>-.37**</td>
<td>-.27**</td>
<td>-.53**</td>
<td>------</td>
</tr>
</tbody>
</table>

*Note. N=139. DERS total = Difficulties in Emotion Regulation Scale total score; CSI – SS loading = Coping Strategy Indicator – Social support factor loading; CSI – PS loading = Coping Strategy Indicator – Problem solving loading; CSI – A loading = Coping Strategy Indicator – Avoidance loading; RAAS – S loading = Revised Adult Attachment Scale – Secure loading; RAAS – V loading = Revised Adult Attachment Scale – Avoidant loading; RAAS – X loading = Revised Adult Attachment Scale – Anxious loading.  
*p < .05. **p < .01.*
Table 12

Psychological Predictors of Present or Absent DSH History

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$ (SE)</th>
<th>Wald Test</th>
<th>$p$</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.67 (2.68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS total</td>
<td>0.20 (0.12)</td>
<td>2.83</td>
<td>.092</td>
<td>1.02</td>
<td>0.99 - 1.04</td>
</tr>
<tr>
<td>CSI - SS</td>
<td>-0.01 (0.05)</td>
<td>0.42</td>
<td>.838</td>
<td>0.99</td>
<td>0.91 - 1.08</td>
</tr>
<tr>
<td>CSI - PS</td>
<td>0.12 (0.05)</td>
<td>6.13*</td>
<td>.013</td>
<td>1.13</td>
<td>1.03 - 1.25</td>
</tr>
<tr>
<td>CSI - A</td>
<td>-0.09 (0.06)</td>
<td>2.22</td>
<td>.136</td>
<td>0.92</td>
<td>0.82 - 1.03</td>
</tr>
<tr>
<td>RAAS - S</td>
<td>0.00 (0.06)</td>
<td>0.00</td>
<td>.952</td>
<td>1.00</td>
<td>0.90 - 1.12</td>
</tr>
<tr>
<td>RAAS - V</td>
<td>0.01 (0.06)</td>
<td>0.02</td>
<td>.887</td>
<td>1.01</td>
<td>0.94 - 1.13</td>
</tr>
<tr>
<td>RAAS - X</td>
<td>0.03 (0.05)</td>
<td>0.37</td>
<td>.544</td>
<td>1.03</td>
<td>0.94 - 1.12</td>
</tr>
</tbody>
</table>

3.4.2 Transient versus persistent DSH history. Using transient or persistent DSH, a social model (i.e., model examining predictive utility of social factors) using three independent variables (MOS-SSS total score, history of any sexual abuse, and history of any physical abuse) was assessed. The model containing these three predictors was not statistically significant, $\chi^2 (3, N = 106) = 7.04, p = .071$, indicating it is unable to distinguish between transient and persistent DSH histories (see Table 13). The model as a whole explained between 6.4% (Cox and Snell $R^2$) and 9.0% (Nagelkerke $R^2$) of the variance in DSH history, and correctly classified 67.0% of cases. Although the model was not statistically significant, one of the predictor variables, MOS-SSS total score, made a unique statistically significant contribution to the model. The odds ratio for MOS-SSS total score was 0.96, indicating that the higher the total score on this measure, the less likely a person is to have a history of persistent DSH. For every additional score-unit on the MOS-SSS, the odds of a participant having a history of persistent DSH decreases by a factor of 0.96.

A psychological model (i.e., model examining predictive utility of psychological factors) using seven predictor variables (DERS total score, CSI Social support subscale, CSI – Problem solving subscale, CSI – Avoidance subscale, RAAS – Secure subscale, RAAS – Avoidant subscale, and RAAS – Anxious subscale) was assessed (see Table 14). The model containing all predictors was not statistically significant, $\chi^2 (7, N = 106) = 11.53, p = .144$, indicating that this model was not able to distinguish between participants who reported transient versus persistent DSH histories. The model as a whole explained between 10.3% (Cox and Snell $R^2$) and 14.4% (Nagelkerke $R^2$) of the variance in DSH history, and correctly classified 70.8% of cases. Although the model was not statistically
Table 13

Social Predictors of Transient or Persistent DSH History

<table>
<thead>
<tr>
<th>Variable</th>
<th>β (SE)</th>
<th>Wald Test</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.98 (1.16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any sexual abuse</td>
<td>0.42 (0.50)</td>
<td>0.73</td>
<td>.394</td>
<td>1.53</td>
<td>0.58</td>
</tr>
<tr>
<td>Any physical abuse</td>
<td>-0.24 (0.50)</td>
<td>0.23</td>
<td>.064</td>
<td>0.79</td>
<td>0.30</td>
</tr>
<tr>
<td>MOS-SSS total</td>
<td>-0.04 (0.02)</td>
<td>5.89*</td>
<td>.015</td>
<td>0.96</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Note. $R^2 = .064$ (Cox & Snell), .090 (Nagelkerke). $\chi^2 (3, N = 139) = 7.04, p = .071$. Any sexual abuse = any history of either childhood or adulthood sexual abuse; Any physical abuse = any history of either childhood or adulthood physical abuse; MOS-SSS total = MOS – Social Support Survey total score.

*p < .05.
Table 14

*Psychological Predictors of Transient or Persistent DSH History*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta \ (SE)$</th>
<th>Wald Test</th>
<th>$p$</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.58 (2.67)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS total</td>
<td>0.07 (0.01)</td>
<td>0.42</td>
<td>.517</td>
<td>1.01</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.03</td>
</tr>
<tr>
<td>CSI - SS</td>
<td>-0.03 (0.05)</td>
<td>0.37</td>
<td>.543</td>
<td>0.97</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.06</td>
</tr>
<tr>
<td>CSI - PS</td>
<td>0.06 (0.05)</td>
<td>1.44</td>
<td>.230</td>
<td>1.06</td>
<td>0.96</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.17</td>
</tr>
<tr>
<td>CSI - A</td>
<td>-0.06 (0.06)</td>
<td>0.89</td>
<td>.345</td>
<td>0.95</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.06</td>
</tr>
<tr>
<td>RAAS - S</td>
<td>0.04 (0.05)</td>
<td>0.69</td>
<td>.407</td>
<td>1.05</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.16</td>
</tr>
<tr>
<td>RAAS - V</td>
<td>-0.15 (0.07)</td>
<td>5.03*</td>
<td>.025</td>
<td>0.86</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.98</td>
</tr>
<tr>
<td>RAAS - X</td>
<td>-0.05 (0.05)</td>
<td>1.33</td>
<td>.250</td>
<td>0.95</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.04</td>
</tr>
</tbody>
</table>

significant, one of the predictor variables, RAAS – Avoidance, made a unique 
statistically significant contribution to the model. RAAS – Avoidance had an odds ratio 
of 0.86, indicating that the higher the score on this measure, the less likely a person is to 
have a history of persistent DSH. For every additional score-unit on the RAAS- 
Avoidance subscale, the odds of a participant having a history of persistent DSH 
decreases by a factor of 0.86.

3.5 Predictors of DSH frequency

The frequency distribution constructed from participants’ responses regarding 
engagement in DSH was more indicative of a continuum of DSH than of the categories of 
absent, transient, and persistent DSH. The analyses conducted with related constructs and 
DSH histories also provided more support for the continuum view than for the categorical 
view of DSH. Although there were slight differences between transient DSH and other 
DSH histories, DSH appears to be best viewed as a continuum. Therefore, hierarchical 
multiple regression was used to assess the ability of social variables to predict frequency 
of DSH. Preliminary analyses were conducted to ensure no violation of the assumptions 
of normality, linearity, and multicollinearity. In the first step, history of adulthood 
physical assault and history of childhood physical abuse were entered. Multiple forms of 
abuse have been reported to result in a cumulative traumatic impact (Fischer, Stojek, & 
Hartzell, 2010; Follette, Polusny, Bechtle, & Naugle, 1996); therefore, all forms of 
physical abuse were entered first in order to control for this cumulative effect. This model 
was not statistically significant, $F (2, 138) = 1.68, p = .191$, and explained only 2.4% of 
the total variance in DSH frequency. In step 2, history of adulthood sexual assault and 
history of childhood sexual abuse were entered. This second step produced a statistically
significant model, \( F(4, 138) = 4.48, p = .002 \), and explained 11.2% of the variance in DSH frequency. In this second step, history of adulthood sexual assault was the only statistically significant predictor (\( \beta = .236, p = .006 \)); however, history of childhood sexual abuse approached statistical significance (\( \beta = .174, p = .055 \)). The addition of the second step added a statistically significant increase in variance from step 1, \( \Delta R^2(2, 134) = 7.14, p = .001 \). In step 3, the MOS-SSS total score was entered. Past incidents of abuse have been demonstrated to affect current perceived social support (Jonzon & Lindblad, 2004; Stroud, 1999); therefore, the measure of perceived social support was entered last in order to control for the effect of past physical and sexual trauma. In this way, the addition of the MOS-SSS gives a more accurate indication of the effect of perceived social support across traumatized and untraumatized participants. The third step also produced a statistically significant model, \( F(5, 138) = 4.72, p = .001 \), and explained 15.1% of the variance in DSH frequency. The addition of the third step added a statistically significant increase in variance from step 2, \( \Delta R^2(1, 133) = 5.13, p = .025 \). In the final model, only MOS-SSS total score and a history of adulthood sexual assault were statistically significant; however, a history of childhood abuse approached statistical significance. A history of adulthood sexual assault had the highest beta value (\( \beta = .217, p = .011 \)), with MOS-SSS total score (\( \beta = -.183, p = .025 \)), and history of childhood sexual abuse following (\( \beta = .169, p = .059 \)). See Table 15 for a summary of the correlations between predictors and Table 16 for the final model.

A subsequent hierarchical multiple regression was used to assess the ability of psychological variables to predict frequency of DSH. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and,
Table 15

Summary of Correlations between Social Predictors of DSH Frequency across the Entire Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>MOS-SSS</th>
<th>Adult-PA</th>
<th>Child-PA</th>
<th>Adult-SA</th>
<th>Child-SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOS-SSS</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult-PA</td>
<td>.05</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child-PA</td>
<td>-.07</td>
<td>.17*</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult-SA</td>
<td>-.09</td>
<td>.22**</td>
<td>.06</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Child-SA</td>
<td>-.06</td>
<td>.17*</td>
<td>.37**</td>
<td>.24**</td>
<td>------</td>
</tr>
</tbody>
</table>

Note. N=139. MOS-SSS total = MOS – Social Support Survey total score; Adult-PA = Adulthood physical assault; Child-PA = Childhood physical abuse; Adult-SA = Adulthood sexual assault; Child-SA = Childhood sexual abuse. *p < .05. **p < .01. ***p < .001.
Table 16

*Social Predictors of the Continuum of DSH*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$b$ (SE)</th>
<th>$\beta$</th>
<th>$p$</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>10.70 (1.34)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child – PA</td>
<td>6.13 (3.36)</td>
<td>0.16</td>
<td>.070</td>
<td>0.15</td>
</tr>
<tr>
<td>Adult – PA</td>
<td>-1.24 (3.02)</td>
<td>-0.35</td>
<td>.683</td>
<td>-0.01</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>9.37 (1.34)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child – PA</td>
<td>3.53 (3.43)</td>
<td>0.09</td>
<td>.306</td>
<td>0.15</td>
</tr>
<tr>
<td>Adult – PA</td>
<td>-3.75 (2.97)</td>
<td>-0.11</td>
<td>.209</td>
<td>-0.01</td>
</tr>
<tr>
<td>Child – SA</td>
<td>7.46 (3.85)</td>
<td>0.17</td>
<td>.055</td>
<td>0.24</td>
</tr>
<tr>
<td>Adult – SA</td>
<td>9.19 (3.32)</td>
<td>0.24**</td>
<td>.006</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Model (Final)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>23.30 (6.29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child – PA</td>
<td>3.04 (3.38)</td>
<td>0.08</td>
<td>.371</td>
<td>0.15</td>
</tr>
<tr>
<td>Adult – PA</td>
<td>-3.17 (2.94)</td>
<td>-0.09</td>
<td>.282</td>
<td>-0.01</td>
</tr>
<tr>
<td>Child – SA</td>
<td>7.23 (3.80)</td>
<td>0.17</td>
<td>.059</td>
<td>0.24</td>
</tr>
<tr>
<td>Adult – SA</td>
<td>8.48 (3.29)</td>
<td>0.22*</td>
<td>.011</td>
<td>0.26</td>
</tr>
<tr>
<td>MOS-SSS total</td>
<td>-0.18 (0.08)</td>
<td>-0.18*</td>
<td>.025</td>
<td>-0.22</td>
</tr>
</tbody>
</table>

*Note.* Model 1, $R^2 = .024$. Model 2, $R^2 = .112$. Model 3, $R^2 = .151$. Child – PA = Child physical abuse; Adult – PA = Adult physical assault; Child - SA = Child sexual abuse; Adult – SA = Adult sexual assault; MOS-SSS total = MOS Social Support Survey total score.

$N = 139$

*$p < .05$. **$p < .01$. 
multicollinearity. In the first step, the DERS total score was entered. The ability to regulate affect may influence the relationship between coping and DSH (Brown et al., 2007) and the relationship between attachment orientation and DSH (Cooper, Shaver, & Collins, 1998; Kimball & Diddams, 2007). Therefore, in an effort to account for the influence of affect regulation on coping styles and attachment orientation, this measure of affect regulation was entered into the model first. This model was statistically significant, $F(1, 138) = 17.05, p = .001$, and accounted for 11.1% of the variance in DSH frequency. At this step, DERS total score as the only predictor was statistically significant ($\beta = .333, p < .001$). In step 2, the CSI subscales (Social support, Problem solving, and Avoidance) were entered. This measure of coping styles was entered second, because coping styles have been demonstrated to mediate the impact of attachment orientation on DSH (Lopez, Mauricio, Gormley, Simko, & Berger, 2001). This second step produced a statistically significant model, $F(4, 138) = 7.22, p = .001$, and explained 17.7% of the variance in DSH frequency. DERS total score was still a statistically significant predictor ($\beta = .173, p = .016$), as was CSI – Avoidance ($\beta = -.224, p = .010$). The addition of the second step added increased significant variance from step 1, $\Delta R^2 (3, 134) = 3.62, p = .015$. In step 3, the RAAS subscales (Secure, Avoidant, and Anxious), producing a statistically significant model, $F(7, 138) = 4.36, p = .001$, which explained 18.9% of the variance in DSH frequency. The change from step 2 to step 3 was not statistically significant, $\Delta R^2 (3, 131) = 0.63, p = .600$. In the final model, only the CSI – Avoidance subscale ($\beta = -.188, p = .042$) was statistically significant; however, the DERS total score ($\beta = .173, p = .067$) was approaching significance. See Table 11 for a summary of the correlations between predictors and Table 17 for the final model.
Table 17

*Psychological Predictors of the Continuum of DSH*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$\beta$ $(SE)$</th>
<th>Beta</th>
<th>$p$</th>
<th>Zero order correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-6.31 (4.42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS total</td>
<td>0.20 (0.05)</td>
<td>0.33***</td>
<td>.001</td>
<td>0.33</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>8.85 (9.34)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS total</td>
<td>0.13 (0.05)</td>
<td>0.21*</td>
<td>.016</td>
<td>0.33</td>
</tr>
<tr>
<td>CSI - SS</td>
<td>-0.18 (0.20)</td>
<td>-0.07</td>
<td>.373</td>
<td>0.08</td>
</tr>
<tr>
<td>CSI - PS</td>
<td>0.44 (0.23)</td>
<td>0.16</td>
<td>.063</td>
<td>0.22</td>
</tr>
<tr>
<td>CSI - A</td>
<td>-0.70 (0.27)</td>
<td>-0.22**</td>
<td>.010</td>
<td>-0.33</td>
</tr>
<tr>
<td><strong>Model (Final)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>14.45 (13.46)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS total</td>
<td>0.10 (0.06)</td>
<td>0.17</td>
<td>.067</td>
<td>0.33</td>
</tr>
<tr>
<td>CSI - SS</td>
<td>-0.26 (0.22)</td>
<td>-0.11</td>
<td>.242</td>
<td>0.01</td>
</tr>
<tr>
<td>CSI - PS</td>
<td>0.42 (0.24)</td>
<td>0.15</td>
<td>.078</td>
<td>0.22</td>
</tr>
<tr>
<td>CSI - A</td>
<td>-0.59 (0.29)</td>
<td>-0.19*</td>
<td>.042</td>
<td>-0.33</td>
</tr>
<tr>
<td>RAAS - S</td>
<td>-0.05 (0.27)</td>
<td>-0.20</td>
<td>.842</td>
<td>-0.19</td>
</tr>
<tr>
<td>RAAS - V</td>
<td>-0.26 (0.30)</td>
<td>-0.10</td>
<td>.400</td>
<td>-0.25</td>
</tr>
<tr>
<td>RAAS - X</td>
<td>-0.09 (0.23)</td>
<td>0.04</td>
<td>.695</td>
<td>0.27</td>
</tr>
</tbody>
</table>

*Note.* Model 1, $R^2 = .111$. Model 2, $R^2 = .177$. Model 3, $R^2 = .189$. DERS total = Difficulties with Emotion Regulation Scale total score; CSI – SS = Coping Strategy Indicator – Social Support subscale; CSI – PS = Coping Strategy Indicator – Problem Solving subscale; CSI – A = Coping Strategy Indicator – Avoidance subscale; RAAS – S = Revised Adult Attachment Scale – Secure subscale; RAAS – V = Revised Adult Attachment Scale – Avoidant subscale; RAAS – X = Revised Adult Attachment Scale – Anxious subscale.

*p < .05. **p < .01. ***p < .001.*
3.6 DSH Cessation

3.6.1 Reasons for cessation. Fifty-four participants responded to the question: “Have you, at one time intentionally engaged in deliberate self-harm, but do not engage any longer? If so, what was your primary reason for wanting to stop self-harming?” Some of the same individuals also responded to the question: “List any additional reasons for wanting to stop self-harming.” Both questions produced the same themes with no differences between primary and other reasons; therefore, the responses were combined. The result was a total of 90 responses from 54 individuals regarding reasons for DSH cessation. Two of these responses did not answer either of the questions posed as they did not provide a reason or motivation for DSH cessation. These responses were excluded from the coding process.

Six themes for reasons for DSH cessation emerged from the responses: (1) realization of DSH stupidity/futility, (2) distress regarding scarring and negative attention, (3) change for interpersonal reasons, (4) receipt of help/support, (5) desire for wellness, and (6) development of alternate coping strategies. Each theme will be discussed separately in order of frequency. See Table 18 for frequency data regarding the themes for reasons for DSH cessation.

The most frequent theme that emerged was Realization of DSH stupidity/futility. Twenty-two (25%) of the responses fell into this category. Participants in the current sample frequently utilized the word “stupidity” in their responses, and did not appear to express a level of insight that would indicate a deeper realization of the maladaptive nature of DSH. For them, as for participants in a similar study (Young et al., 2007), the act of DSH was simply “stupid”. Therefore, this terminology was retained in order to best
reflect the participants’ view, with no derogatory intention. The notion of stupidity was expressed overtly, such as in the response: “Because I felt stupid doing it (DSH) and realized it was ridiculous”; however, feelings of stupidity were also expressed more subtly by mentioning that DSH was embarrassing, pointless, or childish. Futility was expressed by responses such as: “It stopped being a release, and started making me feel even worse every time I did it”, and “just did harm with no benefits”.

Distress regarding scarring and negative attention was the second most frequently coded theme, with 16 (18%) responses falling in this category. Scarring was mentioned explicitly 11 times (e.g., “The scars were embarrassing, and I was tired of making up excuses for the new ones”), and these scarring responses included disliking how the scars looked, having to explain the scars to others or having to hide the scars. Distress regarding negative attention included feeling harassed, judged, alienated, or estranged from others (e.g., “social pressure, it was weird, the fear of losing friends, family

Table 18

Reasons for DSH Cessation

<table>
<thead>
<tr>
<th>Themes</th>
<th>n (%)</th>
<th>Response Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realization of DSH stupidity/futility</td>
<td>22 (25.0)</td>
<td>“Because I felt stupid doing it (DSH) and realized it was ridiculous.”</td>
</tr>
<tr>
<td>Distress regarding scarring or negative attention</td>
<td>16 (18.0)</td>
<td>“The scars were embarrassing, and I was tired of making up excuses for the new ones.”</td>
</tr>
<tr>
<td>Change for interpersonal reasons</td>
<td>14 (15.9)</td>
<td>“My twin sister begged me to stop.”</td>
</tr>
<tr>
<td>Receipt of help/support</td>
<td>13 (14.8)</td>
<td>“Got treatment for depression.”</td>
</tr>
<tr>
<td>Desire for wellness</td>
<td>12 (13.6)</td>
<td>“It was not healthy for me, and I wanted to get better.”</td>
</tr>
<tr>
<td>Development of alternate coping strategies</td>
<td>11 (12.5)</td>
<td>“I began drinking and doing other drugs instead.”</td>
</tr>
</tbody>
</table>

N = 90
estrangement”). Embarrassment, either because of the scars or because others knew about the DSH was also expressed in these responses. Often responses included an indication of both scarring and receiving other negative attention.

The third theme (i.e., change for interpersonal reasons) was expressed in 14 (15.9%) responses. Various reasons were mentioned as reasons for DSH cessation including: avoiding parental disappointment or hurting family members, distress expressed by siblings, desire to be a better mother, and acquiescing to significant others’ threats. A variety of interpersonal relationships were mentioned as the catalyst for cessation including: parents, siblings, other family members, friends, significant others, and children. Examples of responses from this theme include: “I ended up pregnant when I was 15 and suddenly the health and well being of the baby became extremely important and I couldn’t do anything to myself that would have harmed the baby… I never did it again.”

Receipt of help/support comprised the reason for cessation in 13 (14.8%) responses. Both informal (e.g., friends and family members) and formal (e.g., counseling, psychiatric medication) sources of support were mentioned. Responses such as “I got better friends, felt supported, and didn’t feel the need to make myself feel pain” emphasize how important peer support is to the prevention and cessation of DSH. Receipt of psychiatric or psychological help in the form of medication, psychoeducation, counseling, and brain surgery were cited as reasons for cessation.

The fifth theme (i.e., desire for wellness) comprised 12 (13.6%) of the responses. Responses were coded as this theme if they included either: a) recognition that DSH was not healthy, or a good way to cope, or b) desire expressed to move on, get better, or be
healthy. A response such as: “I didn’t want to continue living the way that I was, so I needed to stop self destructive behaviour”, does not explicitly state a desire for wellness; however, this desire is implied through the recognition of the current unwell state and the necessity of ceasing DSH behaviours. Some responses such as: “…I want to do everything I can to keep myself happy and healthy. I’m sick of being hurt”, more explicitly state the desire for wellness.

The final theme (i.e., development of alternate coping strategies) included 11 (12.5%) responses. Although provided as reasons for ceasing DSH, the responses in this category can be better understood as causal mechanisms that resulted in DSH cessation. For example, some responses include “learned better coping mechanisms”, and “I began drinking and doing other drugs instead”. Therefore, the participants learned better coping mechanisms, or substituted other behaviours for DSH, which caused a cessation in DSH. Also of note, is that participants mentioned both positive (e.g., accepting their sexuality, developing spiritual beliefs) and negative (e.g., alcohol, nicotine, drugs, other destructive behaviours) alternate coping strategies.

3.6.2 Strategies for cessation. Thirty participants responded to the question: “Did you use a strategy to help stop this DSH behaviour? If so, please list.” Some participants provided multiple answers, resulting in 35 responses. These responses were then categorized into five themes: (1) positive coping behaviours, (2) seeking professional help, (3) negative coping behaviours, (4) seeking social support, and (5) rationalization/self-talk. See Table 19 for frequency data regarding the themes of strategies for DSH cessation.
Table 19

*Strategies for DSH Cessation*

<table>
<thead>
<tr>
<th>Themes</th>
<th>n (%)</th>
<th>Response Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive coping behaviours</td>
<td>10 (28.6)</td>
<td>“Breathing exercises.”</td>
</tr>
<tr>
<td>Seeking professional help</td>
<td>9 (25.7)</td>
<td>“Approached my family physician for help.”</td>
</tr>
<tr>
<td>Negative coping behaviours</td>
<td>6 (17.1)</td>
<td>“Pulling my hair out. (Not positive, but still it worked) and taking drugs.”</td>
</tr>
<tr>
<td>Seeking social support</td>
<td>6 (17.1)</td>
<td>“Talk to someone when I felt like doing harm to myself.”</td>
</tr>
<tr>
<td>Rationalization/self-talk</td>
<td>4 (11.5)</td>
<td>“Talked myself down from doing it if I ever felt like I would resort to self-harm.”</td>
</tr>
</tbody>
</table>

*N = 35*
The most frequent theme was the substitution of positive coping behaviours, mentioned in 10 (28.6%) responses. Creative coping behaviours such as journaling or poetry were mentioned numerous times. Other types of positive coping responses include: “I would go for a walk, play with my animals – anything to take my mind off the impulse” and “breathing exercises”.

Seeking professional help, mentioned in nine (25.7%) responses, was another common theme. Any reference to help of any kind received from formal, professional services was coded under this theme. Examples of responses include: “Approached my family physician for help”, and “Receiving help through counseling therapy - stopping behaviour, talking about it and learning about coping and relaxation techniques”. In contrast to the substitution or use of more positive coping behaviours to help cease DSH, some participants mentioned negative coping behaviours. This theme was mentioned in six (17.1%) responses. A number of participants indicated that they knew these behaviours were not optimal strategies (e.g., “Pulling my hair out – not positive, but still it worked. And taking drugs.”), or recognized the cessation of one DSH behaviour was achieved through the beginning of another (e.g., “Began vomiting up meals – transferred to another self-harming behaviour.”). Alternatively, some responses did not include the recognition of their strategy as a negative one (e.g., “Ingested small amounts of cannabis when the urges became too strong”).

Seeking social support was also mentioned in six (17.1%) responses. This theme emphasizes the importance of having someone to talk to, and the key role that family and friends can play in the cessation of DSH. Examples of responses include: “Started to open up to my family” and “I talked to my friend’s Dad about what I was doing, and
talking about the situation helped me to calm down, and realize what I was doing was wrong”.

The final theme, Rationalization/self-talk, was only mentioned in four (11.5%) responses. These responses were distinct from the other themes in that they involved an intrapersonal approach in the absence of any help-seeking or behaviour-substitution. “Talked myself down from doing it if I ever felt like I would resort to self-harm” is an example of a response coded under this theme.

**3.6.3 Barriers to cessation.** Participants also responded to a question which queried whether they had encountered any barriers preventing them from stopping DSH behaviours, and if so, to list these barriers. Thirty participants responded; however, two of the participants provided multiple answers resulting in 32 responses. These responses were categorized into four themes: (1) mental illness or distress, (2) interpersonal issues (3) ease, addictive properties, and functionality of DSH, and (4) stress. See Table 20 for frequency data regarding themes for barriers to DSH cessation.

The most frequently reported barrier to DSH cessation had a total of eleven (34.4%) responses and fell under the code of mental illness or distress. Responses were coded under this theme if there was mention of mental illness), or mental distress of some kind acting as a barrier to DSH cessation. Depression was the most commonly reported mental illness. Emotions such as anger, self-hate, helplessness, guilt, and self-blame were listed and described as barriers. Although some responses listed “mental illness” as a barrier, other responses alluded to mental illness (e.g., “When I had bad eating days it was hard for me to not ‘discipline’ myself by cutting) as making cessation difficult.

Another theme (i.e., interpersonal issues) occurred in nine (28.1%) of responses.
Table 20

**Barriers to DSH Cessation**

<table>
<thead>
<tr>
<th>Themes</th>
<th>n (%)</th>
<th>Response Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental illness or distress</td>
<td>11 (34.4)</td>
<td>“Anger, self-hate, feelings of helplessness.”</td>
</tr>
<tr>
<td>Interpersonal issues</td>
<td>9 (28.1)</td>
<td>“Friend group which continued to participate in self-harm.”</td>
</tr>
<tr>
<td>Ease, addictive properties, and functionality of DSH</td>
<td>8 (25.0)</td>
<td>“Able to do it in private, easy to hide.”</td>
</tr>
<tr>
<td>Stress</td>
<td>4 (12.5)</td>
<td>“Stressful events I didn’t understand or did not know how to deal with.”</td>
</tr>
</tbody>
</table>

*N = 32*
This code was used upon any mention of interpersonal relationships causing a barrier to DSH cessation. Family was mentioned in the context of constant fighting, being overwhelming, or causing pain. Abuse and infidelity within intimate relationships were referenced as interpersonal barriers. Examples of peer relationships acting as barriers include: “Friend group which continued to participate in self-harm”, and “Peer pressure from my friends. Saying that I couldn’t hang out with them if I wasn’t doing it (DSH)”.

Eight (25.0%) responses mentioned the ease, addictive properties, and functionality of DSH as a barrier. These responses involved mention of intrinsic properties of DSH making cessation difficult. Examples of responses in this code include: “Sometimes you just need to hurt. Not having another option can make you feel cornered, without a way out. The more readily available tools for pain seem more attractive”, and “Able to do it in private, easy to hide”.

Four (12.5%) responses fell under the theme of stress. All responses with this code mentioned stress specifically. Examples of responses in this theme include: “Stressful living”, and “Just stress; when I get pushed over the edge the need to cut myself comes back”.

4.0 Discussion

The current study sought to explain the differences between individuals with a persistent, transient, or absent DSH history in terms of their attachment orientation, motivations to self-harm, coping styles, and ability to effectively engage in affect regulation. Potentially predictive constructs and their association with present or absent DSH history, transient or persistent DSH history, and the DSH frequency continuum were also examined. The process of DSH cessation including motivations, barriers, and
strategies, was explored in a sub-sample of individuals who had at one time engaged in DSH, but have since managed to cease this behaviour. The specific purposes included: (1) examination of the relationship between attachment orientation and likelihood of persistent, transient, or absent DSH; (2) determination of whether motivations for engaging in self-harm, coping styles and affect regulation differ according to the individuals’ type of self-harm history; (3) investigation of which constructs (attachment orientation, coping styles, affect regulation, or motivations) are most predictive of a particular self-harm history; and (4) development of a better understanding of the offset of DSH behavior, and how individuals managed to cease this behavior.

In order to address said purposes, a series of validated self-report measures querying DSH behaviors and frequency, attachment orientation, coping styles, affect regulation, and underlying DSH motivations, as well as a series of open-ended questions querying the process of DSH cessation were administered to a pre-screened sample of 139 young adults. Specific study findings and associated findings from extant research are discussed in the order in which the purposes were addressed. Strengths and limitations of the current study and any possible impacts on the results follow. Future research directions and clinical implications based on the current findings are discussed.

4.1 Prevalence of DSH

Of the 721 students that were pre-screened and deemed eligible for participation in the study, a total of 263 students (36.5%) endorsed some degree of DSH behavior. As the estimated lifetime prevalence of DSH in university students is between 12% and 38% (Gratz et al., 2002; Polk & Liss, 2007; Whitlock et al., 2006), the current findings are at the upper end of previously estimated prevalence rates. Of the 105 students who endorsed
a history of DSH and participated in the full study, a total of 30 students (28.6%) also endorsed current DSH behaviour. These prevalence rates suggest that 36.5% of the pre-screened students were engaging in DSH at an earlier age, while only 4.2% are still currently engaging. These figures are in alignment with past assertions that DSH behavior is not stable across the lifespan, and DSH rates begin to decline after adolescence (Klonsky & Muehlenkamp, 2007; Nock, 2009).

There were no sex differences found in terms of DSH histories, DSH frequency, or number of different DSH behaviours in which participants engaged. These findings corroborate recent literature indicating that despite traditional biases, females do not engage in DSH more than males (e.g., Gratz et al., 2002; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008). However, in line with past research, males and females did differ on the types of DSH behaviours in which they engaged. Females were more likely to report cutting their wrists, arms or other areas of their body, or carving words into their skin, whereas males were more likely to report burning themselves with lighters or matches.

4.2 Mental Health Contact

More than half of participants (56.2%) with a DSH history reported having had contact with mental health professionals; however, this means that 43.8% of these individuals with a DSH history have not had contact with a mental health professional. It is unknown whether the mental health contacts were associated with DSH or other concerns. A study conducted by Whitlock et al. (2006) indicated that 26% of college students who engaged in DSH indicated that no one knew about their DSH behaviour, and only 21% of students had disclosed this behaviour to a mental health professional. The current findings corroborate Whitlock et al.’s (2006) assertion that individuals who
engage in DSH are not likely to seek help, and subsequently do not come to the attention of professionals.

Participants were asked whether they had received a psychiatric diagnosis from a mental health professional. Of the individuals who had been in contact with mental health professionals, 21.9% of individuals with a DSH history and 9.1% of individuals with absent DSH history had received a diagnosis. In line with precedent literature (Deliberto & Nock, 2008; Gollust et al., 2008), depression, anxiety, or a combination of these disorder categories comprised the majority (73.1%) of diagnoses received by individuals with a DSH history.

4.3 Trauma and Abuse History

Five different types of trauma and four different types of past abuse were queried. There were no differences between individuals with a present or absent history of DSH for all trauma types with the exception of MVAs. Individuals with a present DSH history (26.7%) were much more likely than individuals with an absent DSH history (2.9%) to report having been involved in a serious MVA. This association may be due to higher levels of impulsivity often observed in individuals that engage in DSH (Chapman et al., 2006; Nixon et al., 2008), as well as higher levels of impulsivity being implicated in unsafe driving and MVAs (Dahlen, Martin, Ragan, & Kuhlman, 2005; Dumais et al., 2005). As this finding was not the focus of the current research, little else is known in terms of sequence of events (i.e., did engaging in DSH come before or after the involvement in MVAs), repercussions of the MVAs (e.g., serious injury, depression, death of loved ones, self-blame), or whether the MVA was the fault of the participant or other drivers.
Rates of childhood sexual abuse in DSH samples have been estimated to be between 20% and 36% (Gratz et al., 2002; Warm & Fox, 2003; Whitlock et al., 2008). Rates of childhood physical abuse of between 12% and 33% (Gratz et al., 2002; Warm & Fox, 2003; Whitlock et al., 2008) are similarly high. The current study determined a rate of childhood physical abuse (16.2%) that was within the previously reported range; however the rate of childhood sexual abuse (14.3%) was low compared to past estimates. Rates of sexual assault (19.0%) and physical assault (20.0%) in adulthood were slightly higher.

The extant literature provides a forum for the debate of the importance of both childhood physical and sexual abuse as factors leading up to the development of DSH. Multiple studies have found childhood sexual abuse to play a central role in the development of DSH (Briere & Gil, 1998; Muehlenkamp, Kerr, Bradley, & Larsen, 2010), with some indication that individuals engaging in repetitive DSH were more likely to report both emotional and sexual childhood abuse (Whitlock et al., 2008). Nevertheless, a recent meta-analysis examining childhood sexual abuse and DSH found only a modest relationship, and the authors assert that these findings do not support a link between early experiences of sexual abuse and later DSH (Klonsky & Moyer, 2008). In turn, there is some debate as to the importance of childhood physical abuse in the development of DSH as well (Gratz et al., 2002). Other studies have emphasized the importance of childhood physical abuse in DSH (Gratz et al., 2002), and some researchers have found that childhood physical abuse differentiates transient from persistent patterns of DSH (Muehlenkamp et al., 2010). The current findings are more aligned with the latter position, in that there were no statistically significant differences in
childhood history of sexual or physical abuse between individuals with present or absent DSH history. Although individuals that engaged in DSH had higher rates of both types of childhood abuse, these were not statistically significant differences. Taken as a whole, the extant research does indicate the importance of a validating family environment, with the presence of positive communication and absence of feelings of violation (Webb, 2002). Childhood physical and sexual abuse likely contribute to these overarching feelings of either validation or violation, and therefore an indirect link to DSH is probable. Similarly, the experiences of childhood abuse likely contribute to the development of DSH in the current study, albeit not in a direct enough way to garner statistical significance.

The link between both adulthood sexual or physical assault and DSH is thus far under-explored. Briere and Gil (1998) included adult sexual and physical trauma in their study of DSH; however, these variables were not found to be associated with engagement in DSH. Another study indicated that individuals with a history of childhood sexual assault were more likely to engage in DSH and were more likely to report recent adulthood sexual assaults (Gladstone, Parker, Mitchell, Malhi, Wilhelm, & Austin, 2004); however, a direct link between adulthood sexual assault and DSH was not explored. To date, no research has explicitly examined associations between either adulthood sexual or physical assault and the engagement in DSH. The current study indicates that while there are no differences in rates of adulthood physical assault, there are statistically significant differences between present and absent DSH histories in terms of adulthood sexual assault rates. The potential importance of sexual assault in adulthood represents an undeveloped area of DSH research.

4.4 Frequency of the Types of DSH Behaviours
Across studies, the most frequently reported DSH behaviour is skin cutting (Briere & Gil, 1998; Gratz et al., 2002; Muehlenkamp et al., 2010), generally followed by self-hitting and self-scratching (Laye-Gindhu & Schonert-Reichl, 2005). The current findings corroborate that the most frequent DSH is skin cutting; however, the next most frequently reported DSH behaviours were sticking sharp objects into one’s skin and carving words into one’s skin. Past studies have found self-hitting, scratching and skin-carving to be relatively common as well (Briere & Gil, 1998; Laye-Gindhu & Schonert-Reichl, 2005). The current sample of individuals who engage in DSH seem to be comparable to other samples in terms of rare or unendorsed types of DSH behaviours. In the current sample, no participants endorsed rubbing sandpaper on one’s body, dripping acid on one’s skin, using bleach or other cleaners to scrub one’s skin, or breaking one’s own bones. These same four behaviours were the least endorsed among the sample used to validate the DSHI (Gratz, 2001). Sex differences in the current sample were somewhat comparable to those found in past research. Just as in the original study validating the DSHI (Gratz, 2001), females were found to be more likely than males to carve words into their skin. The other sex differences found, namely that females also tend to be more likely to cut their wrists, arms, or other body parts, while males are more likely to burn themselves with cigarettes or lighters, have not been found previously.

4.5 Frequency Distribution

In this sample of university students, the frequency of DSH incidents did not demonstrate the anticipated results. Unexpectedly, there was no bimodal frequency distribution which would have suggested two groups (transient and persistent). Instead, the frequency of DSH incidents seemed to suggest that engaging in DSH is better viewed
on a continuum. Although there was a positive skew to the distribution, with more individuals reporting fewer incidents (i.e., 1-5), there were still many individuals reporting incidents across the range. Of the individuals endorsing any history of DSH, 68.6% were categorized as transient and 31.4% were categorized as persistent (defined as any individual endorsing 20+ incidents of any given DSH behaviour).

It is difficult to compare these results to past research as few researchers have distinguished transient from persistent self-harming, and when distinguished, the definitions vary widely. Brunner et al. (2007) categorized Grade 9 students into occasional and repetitive groups; however, occasional DSH was defined as 1-3 times a year, and repetitive DSH was defined as more than 4 times a year. The current study is examining (for the most part) lifetime DSH as most participants have ceased their DSH behaviour, whereas the Grade 9 students are reporting current DSH incidents for a much smaller segment of their lives. When considering only the Grade 9 students who endorsed DSH, 73.3% were categorized as occasional and 26.7% were categorized as repetitive. Although these percentages are similar to that of the current study, the population and the category definitions cannot be directly compared.

Past research conducted with a university sample found much lower rates of DSH frequency. Whitlock et al. (2006) reported that 25.4% of their sample had a lifetime frequency of only one incident of DSH. Of the current sample, only 6.6% reported having engaged in DSH only once. Whitlock et al. (2006) also reported that only 24.9% of the sample had engaged in DSH more than 10 times, whereas 55.7% of the current sample reported more than 10 DSH incidents. While a Canadian sample of self-harming university students endorsed a more similar rate (8.7%) of single-incident DSH, this
study also found a much lower percentage (17.3%) of students reporting more than 10 DSH incidents (Heath et al., 2008). This past Canadian study found no relationship between DSH frequency and childhood trauma; therefore, this sample may have had a less traumatic abuse history, resulting in a lower proportion of participants with 10 or more DSH incidents. Although the current study provides additional information concerning DSH rates in a university sample, it does not fully clarify the contention within the literature regarding DSH frequency.

4.6 Attachment Orientation and DSH History

The first hypothesis stated that secure attachment would be associated with absent or transient DSH history and insecure attachment (anxious and avoidant) would be associated with a persistent DSH history. Secure attachment scores were not more associated with any particular DSH history. Therefore, individuals who engage in DSH transiently, persistently, or not at all, are equally as likely to report secure attachment orientation. However, upon closer examination of the mean attachment scores within groups, it was readily apparent that particular DSH histories had higher scores on particular attachment orientations. Of the three attachment orientations, individuals with absent DSH scored highest on secure attachment orientation. Both transient and persistent DSH groups scored highest on anxious attachment orientation. When examining between-group differences, secure attachment does not appear to be related to any particular DSH history; however, within-group differences indicate that secure attachment tends to be the attachment orientation with the highest score among individuals with absent DSH. The general credence that secure attachment acts as a protective factor against various forms of psychopathology (such as DSH), and is
associated with higher psychosocial functioning (Stepp et al., 2008; Ward et al., 2006) was indirectly supported in the current study.

Both transient and persistent DSH histories had higher scores on anxious attachment orientation than did absent DSH history. Adolescents at high risk of suicide have been found to be more likely to exhibit an anxious attachment orientation than either avoidant or secure orientation when compared to individuals at a low risk for suicide and to controls (Wright, Briggs, & Behringer, 2005). This finding is replicated in the current study. Individuals with a persistent DSH history had higher (although not statistically significantly) scores on anxious attachment orientation than individuals with a transient history. As anxious attachment is more often and more directly associated with unpredictable relationships, fear of abandonment, and discontentment with current relationships (Mikulincer & Shaver, 2007; Stepp et al., 2008), the association between DSH and anxious attachment further implicates the importance of social factors and familial relationships in the development of DSH.

Individuals with either absent or transient DSH histories had higher scores on avoidant attachment than individuals with a persistent DSH history. Although this finding does not distinguish transient DSH history from absent DSH history, it does demonstrate a difference between individuals who engage transiently versus persistently in DSH. There is some indication in the literature that the relationship between avoidant attachment and parasuicidal behaviours is mediated by interpersonal problems (Stepp et al., 2008). This mediating factor was not accounted for in the current analyses and may account for this finding.

4.7 Attachment Orientation and Motivations to Engage in DSH
The second hypothesis stated that individuals who engaged in DSH for interpersonal (socially reinforcing) motivations would receive higher scores on anxious attachment orientation, whereas individuals who engaged in DSH for intrapersonal (self reinforcing) motivations would receive higher scores on avoidant attachment orientation. Past research on attachment theory (Ben Ari & Hirschberg, 2009; Gormley & McNiel, 2010; Vogel & Wei, 2005) has indicated that individuals with anxious attachment orientation are unsure whether someone will respond in their time of need, are highly invested in others, and have a stronger connection to others than to themselves. This would imply that engagement in DSH would involve socially-reinforcing or interpersonal motives. Individuals with avoidant attachment orientation are convinced that no one will respond to them in their time of need, prefer to be disengaged from others, and have a stronger connection to themselves than to others. This would imply that engagement in DSH would involve self-reinforcing or intrapersonal motivations. Contrary to these past indications, individuals with intrapersonal motivations for DSH had higher scores on anxious attachment and individuals with interpersonal motivations for DSH had higher scores on avoidant attachment.

There are a few possible explanations for these unexpected findings. The ISAS – Section II, used to assess the underlying motivations for engaging in DSH, is comprised of 13 sections which then map onto one of the two factors (i.e., interpersonal or interpersonal). Upon closer examination of these functions, potential explanations for the current study’s unexpected findings arise.

First, individuals with avoidant attachment tend to be reticent to acknowledge their distress or even deny misery completely, while individuals with anxious attachment
tend to pay more attention to their distress and to exaggerate their misery to garner attention from others (Collins, 1996; Vogel & Wei, 2005). Thus, for individuals with avoidant attachment, endorsing items on the ISAS – Section II related to internal distress, such as affect regulation, anti-suicide, or self-punishment, would be evaded. Therefore, it is a possibility that the responses made regarding motivations to self-harm by individuals with avoidant attachment were more a function of their denial of distress than their search for social attention. For individuals with anxious attachment, the opposite could occur and they would be more likely to endorse the items related to internal distress. Similarly, the responses made by individuals with anxious attachment could be more a function of their distress exaggeration than their internal reasons for self-harm.

Secondly, past research (Pilkonis, 1988; Stepp et al., 2008) has indicated three facets of avoidant attachment (defensive separation, emotional detachment, and rigid control); these facets may be of particular importance within a DSH sample. Defensive separation refers to the tendency to maintain strong personal boundaries and to place personal emphasis on defining oneself as separate/different from others. Emotional detachment refers to a disregard for the emotions or emotional connection with others. Rigid control refers to the denial or lack of consideration for internal or emotional problems. Some of the functions of the ISAS – Section II that fall under interpersonal motivations include revenge, autonomy, and interpersonal boundaries. Although the interpersonal factor of the ISAS – Section II is considered socially reinforcing, the functions that contribute can be negatively as well as positively socially reinforcing. Therefore, any interaction (negative or positive) with others that provides motivation to engage in DSH is considered interpersonal. It becomes apparent that facets of avoidant
attachment such as defensive separation, emotional detachment, and rigid control could influence an individual to endorse interpersonal motivations to engage in DSH such as revenge, seeking autonomy from others, or maintaining interpersonal boundaries.

Finally, anxious attachment has been associated with the tendency to prioritize others, to fear abandonment, and to direct anger inwards because of these priorities and fears (Gormley & McNiel, 2010). These tendencies may influence individuals with anxious attachment orientation to endorse functions such as self-punishment on the ISAS – Section II. Rather than risk abandonment by directing anger outwards, these individuals may resort to DSH with self-punishing motivations. If this is the case, individuals with anxious attachment orientation would obtain higher scores on intrapersonal motivations.

As this is a novel area of research, these findings (and potential explanations) should be interpreted with caution. Further investigation into the relationship between attachment orientation and motivations to engage in DSH is needed.

4.8 Coping Styles and DSH

The third hypothesis stated that individuals with a transient DSH history would be identifiable as a distinct group, as individuals with this particular history would utilize different coping styles than individuals with either a persistent or absent history. Individuals with persistent and transient DSH histories were found to be more likely to use a Problem-solving coping strategy, whereas individuals with absent DSH history are more likely to use an Avoidance coping strategy. Although individuals with a transient DSH history are distinguishable from individuals with Absent DSH history in terms of coping styles, they do not report coping styles that are unique from those used by individuals with a persistent DSH history. This finding emphasizes the similarity between
individuals who have engaged at all in DSH and the individuals who have engaged chronically.

In the past, individuals with a history of DSH have been found to utilize coping strategies that have a greater focus on avoidance (such as behavioural disengagement or substance abuse), and a lesser focus on problem-solving (Brown et al., 2007; Evans et al., 2005). The findings that problem-solving coping styles are more likely to be implemented by individuals with a present DSH history, and avoidance coping styles are more likely to be implemented among those with an absent DSH history, are contrary to the precedent literature. That said, although the aforementioned results were statistically significant, clinical meaningfulness is yet to be determined or understood. The fact that all three DSH histories reported high utilization of all three types of coping styles assessed is also of note. In subsequent analyses, coping styles were not found to be predictive of persistent, transient, or absent DSH. In combination, these results indicate that coping styles may not be of much utility when considering DSH histories.

Furthermore, there may be an interpretational confound in these results. Generally, within the literature DSH is considered an avoidant coping strategy in and of itself (Chapman et al., 2006). Because DSH is most often performed in order to avoid, escape, manage, or regulate emotion, the act of DSH is negatively reinforced. Issues that cause distressing emotional experiences are dealt with by avoiding or distracting from these internal experiences by engaging in DSH. Nevertheless, DSH is doubtfully viewed as avoidance by those individuals engaging in these behaviours. For them, DSH is a legitimate and useful coping mechanism. Whereas researches conceptualize DSH as avoidance, individuals with a history of DSH often conceptualize it as the opposite, as
doing something (Briere & Gil, 1999; Polk & Liss, 2009). Some qualitative responses from past studies demonstrate that often DSH is considered an active method of coping: “It was a coping mechanism”, “All other avenues I had tried, failed”, “When I feel my life spinning out of control and I can’t take it anymore this is something that I can do” (Polk & Liss, 2009, pp. 236-237). Qualitative responses from the current study referring to DSH as a “tool”, “solution”, “method of discipline”, or “way to gain control” also indicate individuals’ belief that DSH is not a form of avoidance. Dialectical behaviour therapy models also suggest that DSH behaviours arise as a strategy to manage overwhelming affect, and are thus seen by self-harming individuals as the solution and not the problem (Feigenbaum, 2010).

Questions such as: “How often have you tried different way to solve problems until you found one that worked?” (see CSI, question 11) that are meant to query problem-solving coping styles may be endorsed by individuals who feel that their engagement in DSH is a “solution”, and thus qualifies as a problem-solving activity. Conceptual disparities between researchers and individuals who engage in DSH may lead to discrepancies in the literature, such as the one observed between the current study and past research.

4.9 Motivations to Engage in DSH and DSH History

The second hypothesis also stated that individuals with a transient DSH history would be identifiable as a distinct group, as individuals with this particular history would report different motivations to engage in DSH than individuals with a persistent history. The results from the current study suggested no association between DSH history and motivation to self-harm in that a similar proportion of individuals with interpersonal and
intrapersonal motivations could be found in both transient and persistent DSH history groups. Therefore, this hypothesis was not supported as those with a transient DSH history did not emerge as a distinct group. However, the mean number of DSH incidents (as opposed to group memberships based on DSH frequency) was related to underlying motivations. Individuals engaging in DSH with interpersonal motivations tend to engage in a higher mean number of DSH behaviours than individuals with intrapersonal motivations. This discrepancy between the results when examining categorical differences and the results when examining continuous score differences could be a function of the difficulty that arises in attempts to categorize DSH histories.

4.10 Affect Regulation and DSH History

The first hypothesis stated that individuals with an absent history of DSH would display the highest ability to regulate affect (as demonstrated by a lower DERS score), followed by those with a transient history, while those individuals with a persistent history of DSH would display the lowest affect-regulation ability. The current findings provide support for this hypothesis. Difficulty with affect regulation among individuals with a history of DSH is well-supported in the current literature (Gratz, 2007; Klonsky, 2009), as is the notion that individuals most often engage in DSH in an attempt to regulate emotions (Polk & Liss, 2009; Scoliers et al., 2009).

Individuals with absent DSH history had the least difficulty with global affect regulation, as well as with all affect regulation dimensions. For the most part, there were no statistically significant differences between individuals with transient and persistent DSH histories in terms of affect regulation. Individuals with a persistent DSH history had reported more difficulty on only two dimensions of affect regulation: controlling
impulses and clarity of emotional responses. So although not distinct, it would appear that transient DSH is associated with a higher ability than those with persistent DSH to manage some areas of affect regulation.

The impulse control dimension is composed primarily of items reflecting difficulties remaining in control of one’s behaviour while experiencing negative emotions. The current finding is in concordance with past research. Individuals with a DSH history have been found to exhibit patterns of impulsive functioning that contribute to deficits in future-oriented problem solving (Herpertz et al., 1997) and individuals who repeatedly engage in DSH have been found to be more impulsive than those who have self-harmed once (Evans et al., 1996). The inability to control one’s impulses may lead to the automatic engagement in DSH without taking the time to consider other options or to consider the consequences.

The lack of emotional clarity dimension is composed of items reflecting the extent to which individuals are clear about the emotions they are experiencing. Emotional intelligence, in large part involving perception and understanding of emotions, has been closely linked to the ability to engage in positive coping skills within a DSH sample (Mikoljczak, Petrides, & Hurry, 2009). Indeed, it has been suggested that emotional intelligence, and thus emotional clarity, may act as a protective factor against DSH. Therefore, the current finding that emotional clarity may distinguish between individuals with transient and persistent DSH is also in accordance with the extant literature.

4.11 Predictors of DSH History Group Membership

Certain constructs (i.e., attachment orientation, coping styles, affect regulation, social support, and history of abuse) were examined in order to better understand which
were more predictive of a particular self-harm history. Social and psychological factors were examined separately for present versus absent DSH histories, as well as transient versus persistent DSH histories. Said results and associated interpretation are discussed below.

4.11.1 Social predictors of present versus absent DSH history. Perceived social support, physical abuse, and sexual abuse were the social factors examined for predictive potential. The social model explained between 14.3% and 21.3% of the difference between individuals with a present and absent DSH history. The strongest social predictor of reporting a present history of DSH was a history of sexual abuse (in childhood or adulthood). In fact, participants with a history of either type of sexual abuse were over 10 times more likely to report a present history of DSH than those with no history of abuse. Perceived social support was also a statistically significant predictor of DSH history.

There is some controversy within the DSH literature concerning the contribution of sexual abuse to later DSH behaviours. A recent meta-analysis indicated only a modest relationship between childhood sexual abuse and DSH, and sexual abuse was suggested to be only a proxy risk factor (Klonsky & Moyer, 2008). The current findings strongly side with past evidence indicating the profound importance of abuse history (Asgeirsdottir, Sigfurdottir, Gudjonsson, & Sigurdsson, 2011; Gratz et al., 2002).

Lack of perceived social support was also found to be a statistically significant predictor of a present DSH history. In the current study, social support was conceptualized as involving emotional support (provision of positive affect, empathetic understanding, and the encouragement of expressions of feelings), informational support
(provision of advice or guidance), tangible support (provision of assistance or material aid), positive social interaction (the availability of others with whom to engage in enjoyable activities), and affectionate support (expression of love and affection).

In the context of DSH, social support is generally examined in terms of negative family environment or negative peer relationships (i.e., a lack of social support), and not in terms of positive relational supports. Negative family environments involving physical or sexual abuse (Gratz, 2006), neglect (Zoroglu et al., 2003), or invalidation of emotions (Linehan, 1993) have all been implicated as risk factors of DSH. Negative peer relationships involving bullying (Hay & Meldrum, 2010), victimization (Jutengren, Kerr, & Statin, 2011), or having close ties to others who engage in DSH (Nixon et al., 2008) have also been implicated as increasing the risk of engaging in DSH.

Few studies have examined the possibility of positive social support acting as a protective factor against DSH. Kaminski et al. (2010) examined the comparative strength of different domains of social connectedness (i.e., quality of relationships, degree of liking, sense of belonging, feeling close to others) on DSH and various suicidal behaviours. Family, peer, and school connectedness were associated with decreased odds of DSH, with family connectedness being the strongest predictor (Kaminski et al., 2010). A relationship between the quality of social support and social network and a higher likelihood to seek informal help for DSH has also been demonstrated (Wu, Stewart Huang, Prince, & Liu, 2011). Social support has been proposed to act as a buffering factor for the severity of DSH, as those with high quality social supports tend to help-seek prior to engaging in DSH (Wu et al., 2011).
The current results emphasize the potential risks and benefits that families, peers, and other social ties can have on DSH. The potential protective nature of positive social supports is important to consider. While many other contributing factors to the engagement in DSH (i.e., history of abuse, attachment orientation) are unalterable or have a low likelihood of being improved through treatment, social support can be improved upon. Focusing on the factors that a) can be changed, and b) have a considerable impact on likelihood of DSH should be an aim in DSH prevention and treatment. Further investigation of positive social ties and interactions among individuals that engage in DSH is warranted.

4.11.2 Psychological predictors of present versus absent DSH history. Three types of coping (problem-solving, social-support seeking, and avoidance), three attachment orientations (secure, avoidant, and anxious), and ability to regulate affect were the psychological factors assessed for predictive potential of present versus absent DSH history. This psychological model explained between 15.7% and 23.3% of the variance between individuals with a present or absent DSH history. There was only one factor, problem-solving coping, that uniquely contributed to the model.

As indicated previously, this measure of problem-solving coping produced unexpected results in that individuals with present DSH history report higher levels of this coping style. Although hypothesized to be a more adaptive form of coping and thus utilized more by those individuals with absent DSH history, the current results indicated otherwise. Albeit useful in distinguishing between present and absent DSH histories in this sample, this type of coping style may have been subject to the interpretational errors
previously outlined. Consideration should be given to the appropriateness of using the CSI with a DSH population in future research.

4.11.3 Social predictors of transient versus persistent DSH history. Again, perceived social support, physical abuse, and sexual abuse were the social factors examined. This social model was not statistically significant and could not distinguish between transient and persistent DSH histories. Only 6.3% to 9.0% of the variance between transient and persistent DSH histories was explained by the social model. The most predictive variables in distinguishing between present and absent histories (i.e., history of sexual abuse and perceived social support) were also observed in the prediction of transient versus persistent DSH history. Individuals with persistent DSH were one and a half times more likely to have a history of sexual abuse than individuals with a transient DSH history. Perceived social support was the only unique contributor to this model of social factors. Although the model was not able to distinguish between the finer distinctions of individuals with present DSH histories, the importance of perceived social support and history of sexual abuse are evident. The results indicating that the social factors that were able to distinguish between present and absent DSH history are unable to distinguish between transient and persistent histories further refutes the hypothesis that transient DSH is a distinct group.

4.11.4 Psychological predictors of transient versus persistent DSH history. As before, three types of coping (problem-solving, social-support seeking, and avoidance), three attachment orientations (secure, avoidant, and anxious) and ability to regulate affect were the psychological factors assessed for their ability to differentiate between transient and persistent DSH histories. This psychological model did not distinguish between
transient and persistent DSH histories. Nevertheless, this model accounted for 10.3% to 14.4% of the variance between these DSH histories. The only predictor which uniquely contributed to the model was avoidant attachment orientation. The lower the avoidant attachment score, the more predictive of a persistent DSH history.

Although few in number, the past studies that differentiated between DSH histories provide further context for the current results. Klonsky and Olino (2008) determined that individuals with more psychological problems (i.e., impaired affect regulation, clinical symptomatology) had an increased likelihood to engage in more frequent and severe DSH behaviours. Brunner et al. (2007) demonstrated that social factors (e.g. school- and family-related variables) are important concomitants in the onset of occasional DSH, whereas these same factors were not predictive of repetitive DSH. Instead, psychological factors (e.g., eating disorder pathology, suicidality) were more predictive of repetitive DSH. Past findings were somewhat replicated; in the current study social factors were more predictive of present DSH (i.e., inclusion of individuals with both transient and persistent DSH histories) than of persistent DSH. It could be argued that psychological factors were better at predicting persistent DSH because the variance explained by the psychological model was greater than the variance explained by the social model, while the opposite was true in predicting present DSH.

4.12 Predictors of DSH frequency

Using the continuum of DSH incidents instead of DSH history group membership, social and psychological factors were again examined for their predictive utility. These results and associated interpretations are discussed below.
4.12.1 Social predictors of DSH frequency. Childhood physical abuse, adulthood physical assault, childhood sexual abuse, adulthood sexual assault, and perceived social support were the social factors assessed for predictive utility of DSH frequency. In the final model, that explained 15.1% of the variance, there was evidence that history of adulthood sexual assault was the most predictive of more DSH incidents. Perceived social support and childhood sexual abuse also appeared to have predictive utility.

The importance of childhood sexual assault as a risk factor for the development of DSH, and social support as a protective factor of DSH behaviours have been discussed previously. However, the finding that adulthood sexual assault is the most predictive social factor in the model was surprising. Although there are indications that individuals who have experienced childhood sexual abuse are more likely to engage in DSH and are also more likely to experience sexual abuse in adulthood (Gladstone et al., 2004), no direct examination of adult sexual trauma has been conducted. This novel consideration may have contributed to the magnitude of the relationship found between any sexual abuse (childhood and/or adulthood) and prediction of DSH history group membership.

To date, only one study has examined the effect of adulthood sexual abuse on DSH, and this examination was conducted peripherally. Coid et al. (2003) examined the relationship between a gamut of abusive experiences (i.e., childhood sexual abuse, childhood physical abuse, sexual activity before age 16, adulthood sexual assault, rape, domestic violence) and psychiatric morbidity among 1207 women ($M_{\text{age}} = 37.2$). It is of note that the current study considered sexual assault and rape in one category, while Coid et al (2003) made a categorical distinction. Childhood sexual abuse was found to have
fewer associations with mental health and substance abuse issues than adulthood sexual assault. Sexual assault in adulthood was chiefly associated with substance abuse, while rape was particularly associated with post-traumatic stress and parasuicide. Childhood sexual assault was unrelated to DSH; however, after adjusting for demographics and substance use, women with a history of adulthood sexual assault were 1.43 times more likely to engage in DSH, and women with a history of rape in adulthood were 2.30 times more likely to engage in DSH than women with no such trauma history.

Research conducted in other areas of self-destructive behaviours, such as eating pathology, has indicated similar results; sexual assault in adulthood may have a more severe impact on certain types of adjustment. Wonderlich et al. (2001) examined the relationship between sexual trauma in childhood, adulthood, or both, and self-destructive eating pathology among 97 women (M age = 38.1). The combination of adult sexual assault and child sexual abuse resulted in more self-destructive eating and behavioural impulsivity than in individuals with a history of child sexual abuse alone. Fischer et al. (2010) conducted a similar study with 589 undergraduate women (M age = 18.0) in which the effects of adult sexual assault on current eating pathology were examined while controlling for the effects of multiple forms of childhood abuse. These findings indicated that adult sexual abuse contributed unique variance to current eating pathology symptoms; however, childhood sexual and physical abuse did not.

Research comparing the effects of sexual abuse on children versus adolescence also provides insight into the current results. Feiring, Taska, and Lewis (1999) examined how age at the time of abuse was related to psychological distress from a developmental perspective. Adolescents (n = 73; mean age unavailable, ages 12-15) were found to show
more pervasive psychological distress than children \( n = 96; \) mean age unavailable, ages 8-11), reporting higher depressive symptoms, more negative reactions from others, lower self-worth, and lower perceived social support. Feiring et al. (1999) hypothesized that adolescents were at increased risk for psychological distress due to their age, and thus their developmental stage. The findings that adolescents compared to children perceive less social support and more negative reactions from others may be due to increased feelings of responsibility for the abuse. The degree of causal responsibility for the victim’s role in abuse has been found to increase with victim’s age (Collings & Payne, 1991). If adolescents perceive they were more at fault for the abuse they experienced, perhaps adults perceive an even higher degree of self-responsibility and feel more blamed by their social network. Past research has also suggested that adolescents compared to children view their self-attributes as more stable and as representing enduring characteristics (Harter, 1990). Trauma such as sexual abuse can have a detrimental effect on one’s sense of self, thus if sexual abuse occurs once these self-attributes are considered stable and enduring, more pervasive psychological distress may result (Feiring et al., 1999). Following the same logic, adulthood sexual assault may have even worse repercussions because one’s sense of self is further developed in adulthood.

4.12.2 Psychological predictors of DSH frequency. The ability to regulate affect, three types of coping (problem-solving, social-support seeking, and avoidance), and three attachment orientations (secure, avoidant, and anxious) were the psychological factors assessed for predictive utility of DSH frequency. Only one factor, avoidance coping style, was a significant predictor; however, the ability to regulate affect had a trend toward significance, indicating a probable association between emotion regulation
and DSH frequency as well. As previously mentioned, Brunner et al. (2007) demonstrated that psychological factors were more predictive of repetitive DSH than were social factors, and this seems to hold true in the current study. The psychological model explained more of the variance (18.9% compared to 15.1%) than did the social model.

Although few in number, the studies which have examined correlates of DSH frequency have found a gamut of psychological factors (i.e., depression, hopelessness, poor problem-solving, suicidality, disordered eating) to be related to higher DSH frequency (Hawton et al., 1999; Lloyd-Richardson et al., 2007; Whitlock, Muehlenkamp, & Eckenrode, 2008). Affect regulation is known to play a large role in the underlying functions of DSH (Klonsky, 2009) and motivations to engage in DSH (Polk & Liss, 2009). Time and time again impairments in affect regulation has been related to the engagement in DSH and have demonstrated an ability to differentiate between individuals who do and do not engage in DSH (De Klerk et al., 2011; Gratz, 2006; Linehan, 1993; Muehlenkamp et al., 2010); however, there is less of an indication that ability to regulate affect varies with DSH frequency. To the author’s knowledge, only one study has examined affect regulation and DSH frequency. Gratz (2006) found that certain facets of affect regulation were associated with higher DSH frequency within a self-harming population, and that these facets were different from those which distinguish between individuals who do and do not engage in DSH. Specifically, emotional inexpressivity (inability to outwardly display emotions) and the combination of greater maltreatment, greater inexpressivity, and lower positive affect intensity/reactivity were predictive of higher DSH frequency. The current findings indicated that affect regulation
is likely related to DSH frequency, and specifically the facets of controlling impulses and clarity of emotional responses.

Avoidance coping was found to be related to lower DSH frequency. This was an unexpected finding as generally avoidant coping strategies have been associated with the engagement in DSH (Evans et al., 2005). As mentioned previously, individuals who engage in DSH may be denying the use of avoidance coping because they consider DSH to be a problem-solving coping mechanism. Further research into the area of how individuals view DSH in terms of its coping functions could clarify this finding.

4.13 Reasons for Cessation

Six themes of DSH cessation reasons emerged from the current study: (1) realization of DSH stupidity/futility, (2) distress regarding scarring and negative attention, (3) change for interpersonal reasons, (4) receipt of help/support, (5) desire for wellness, and (6) development of alternate coping strategies. Although research regarding reasons for engaging in DSH has increased in recent years, researching the reasons for ceasing to engage in DSH is a relatively undeveloped area. Three studies have examined reasons for DSH cessation using different methods and populations. There are both similarities and differences between the current findings and these past three studies.

As previously mentioned, Deliberto and Nock (2008) asked 94 adolescents why they may or may not like to stop engaging in DSH, and the answers were then categorized into one of five themes: (1) it is unhealthy, (2) it attracts unwanted attention, (3) scarring, (4) it causes shame, and (5) it upsets family and friends. In the current study, the majority of responses (56.1%) were categorized as wanting to stop DSH because it is unhealthy, and this was considered an internal cessation reason. The other four themes
(43.9%) were considered external reasons for cessation. All five of the themes found by Deliberto and Nock (2008) were mentioned and included in the themes derived from the current findings. Similarly, Young et al. (2007) queried reasons for ceasing DSH, and categorized responses into one of four cessation themes. Realizing harm to self and family or “stupidity” was the most frequently reported theme and the second most frequent theme was that the DSH behaviour was only part of a temporary phase. The third theme involved coping, feeling better, or finding a purpose in life. The least common theme involved gaining professional or informal help. The current study did not include any responses that would have been categorized as stopping DSH because it was only a temporary phase; however, all other themes were observed in the current study.

Shaw (2006) determined 10 factors involved in the cessation of DSH through in-depth interviews with six young women. Factors specific to the act of DSH included: the desire/decision to stop self-harming (i.e., absence of ambivalence), meanings of DSH and problem identification (i.e., how a person views her self-injury, and whether she views it as problematic or helpful), and elimination or decrease in psychological catalysts to DSH. Factors pertaining to broader life issues included: self-initiative (i.e., self-talk, desire to care for self, development of insight), life commitments and engagements (i.e., if DSH is interfering with career goals or social activities), relational ties and support, and professional treatment. General factors involved in DSH cessation included: disclosure (i.e., the admission of engaging in DSH facilitates professional treatment and may act as a medium to make other disclosures), deterrents (e.g., fear that others will think she’s crazy) and momentum (i.e., once on the path, it is easier to refrain from DSH). Although the aim of this study was not to determine reasons for DSH cessation but rather factors
which influence DSH cessation, there was much overlap with the current findings. A difference of note is that current findings did not include any responses that mentioned ceasing DSH because one was influenced by the benefits of disclosure or momentum.

4.13.1 Realization of DSH stupidity/futility. In the current study the most frequently reported theme was realization of DSH stupidity/futility (i.e., 25.0%), corresponds to the most frequently reported theme in Deliberto and Nock’s (2008) study. Recognition of DSH as unhealthy and the realization that DSH is stupid or futile both involve an awareness of the negative personal effects of DSH. This same sentiment was captured in Young et al.’s (2007) most common theme, realized harm to self or family or stupidity. Little is known about what prompts these realizations, or how the stupidity, futility, or unhealthy aspects come to be recognized. There is an inverse relationship between DSH and age (Klonsky & Muehlenkamp, 2007; Nock, 2009); therefore, this type of realization could simply be a function of aging, and the development from adolescence to adulthood. Future research could investigate the path to realization, and whether or not there are any triggers or catalysts beyond aging to this change in mentality.

4.13.2 Distress regarding scarring and negative attention. The second most frequent theme in the current study, distress regarding scarring and negative attention, involves an awareness of the negative social effects of DSH. Three of Deliberto and Nock’s (2008) themes (unwanted attention, scarring, and shame) overlap with this current theme; however, in the adolescent sample these themes were collectively expressed in 41% of the responses, compared to 18% of the current study’s responses. This may reflect the increased influence of peer pressure in adolescence (Heilbron & Prinstein,
2008; Jutengren et al., 2011). Shaw (2006) also alluded to these negative social effects in the themes of deterrents and life commitments/engagements.

4.13.3 Change for interpersonal reasons. In the current study, change for interpersonal reasons was mentioned in 15.9% of the responses. This type of theme was found infrequently (4.9%) in the past among adolescents (Deliberto & Nock, 2008). Shaw (2006) captured this reason for cessation in the relational ties and support theme. Past and current findings included responses that mentioned parents, siblings, friends, romantic partners, and children.

4.13.4 Receipt of help/support. The receipt of help from professionals, family, or friends accounted for 14.8% of the responses in the current study. This was very similar to past findings in a young adult sample, with 12.3% of past participants endorsing either professional or informal help as the reason for DSH cessation (Young et al., 2007). Shaw (2006) also determined that professional treatment was a main factor in the cessation of DSH, and was so because of the empathic relationship with the professional, feelings of validation, and the pragmatic interventions learned.

4.13.5 Desire for wellness. Expressed wishes to be healthy, to make a positive change from the current state, and to find happiness accounted for 13.6% of the responses in the current study. This theme reworded could be considered equivalent to Deliberto and Nock’s (2008) theme of changing because DSH is an unhealthy behaviour. This theme had a marked absence of reasons why they wanted to get well (i.e., no mention of external reasons such as family, or internal reasons such as shame). It seemed that a simple desire to be in a better psychological state was motivation in and of itself for some individuals.
4.13.6 Development of alternate coping strategies. The least frequently reported reason for DSH cessation in the current study was the development of alternate coping strategies, both positive and negative. Young et al. (2007) included a similar theme; however it only included positive coping or improvements in one’s outlook. The transfer of self-destructive behaviour from DSH to eating pathology or substance abuse provides anecdotal evidence that these behaviours along with DSH serve similar functions.

4.14 Strategies for Cessation

Five themes of strategies for DSH cessation emerged from the current study: (1) positive coping behaviours, (2) seeking professional help, (3) negative coping behaviours, (4) seeking social support, and (5) rationalization/self-talk. Research involving strategies or facilitators to the cessation of DSH are relatively unexplored. Sinclair and Green (2005) conducted a qualitative interview study of 20 adults (mean age unavailable, ages 16-48) who had presented to the hospital after an episode of deliberate self-poisoning. The study was conducted two years post-incident, with no additional DSH incidents having occurred since. The majority of participants had a history of multiple DSH incidents, and acknowledged that the key motivation for their self-harm was for someone to hear and validate their distress, and not to die. Although self-poisoning was not included in the definition of DSH utilized for the current study, the underlying motivations for their self-poisoning coupled with their history of DSH renders this sample similar to that of the current study and thus allows for appropriate comparison.

Sinclair and Green (2005) derived three key narratives of resolution from this study. The first narrative was entitled resolution of adolescent chaos. The individuals who contributed to this narrative reported that gaining autonomy from a chaotic, abusive,
or invalidating family structure was key to their DSH cessation. The path to independent adulthood, involving physical separation from family, developing trusting relationships with professionals who helped them grow, and becoming a parent responsible for their own child, resulted in DSH resolution. The hospitalization and professional help received in response to their self-poisoning was experienced as frightening, and contributed to a perpetuated sense of invalidation and lack of control. The second narrative was entitled recognition of alcohol as a factor. These individuals reported that treatment for addiction, and subsequent abstinence was essential to their DSH cessation. This narrative also viewed their hospitalization and receipt of professional assistance as unhelpful; however, this was the case because help with their addiction was either not offered or not available. The third narrative was entitled seeing DSH as a consequence of illness. These individuals considered their DSH as a symptom of illness and a cry for help. Their DSH resolution was a result of having their mental illness addressed. They viewed their hospital admission as part of the process of recovery, and felt supported by the professional services offered.

4.14.1 Positive coping behaviours. In the current study, the most frequently (28.6%) reported strategy for DSH cessation involved positive coping behaviours. Writing, journaling, poetry, exercise, and spending time with pets were all mentioned explicitly. It has been suggested that individuals who engage in DSH have difficulty expressing their emotions (Gratz, 2006), and often do not feel able to disclose their engagement in DSH to others (Whitlock et al., 2006). Perhaps expressing their emotions through writing is beneficial as it helps hone their expressivity skills while protecting them from the invalidation, judgment, and stigma they fear. Emotional expression
through different writing forms has been implicated as a valuable exercise in emotion regulation (Baikie & Wilhelm, 2005; Chan & Horneffer, 2006). These past indications of therapeutic utility along with the current results indicate that emotional expression through writing may be a useful addition to the treatment of DSH.

4.14.2 Seeking professional help. More than a quarter of participants (25.6%) reported a strategy for DSH cessation that involved seeking or receiving professional help. Medication, psychoeducation, therapy, school counsellors, family physicians, and strategies learned from professionals were mentioned as part of this strategy. Sinclair and Green (2005) found that professional help was only effective if provided to individuals with underlying mental illness or if the individuals required and received help specific to their alcohol use. Shaw (2006) determined professional treatment to be an important factor involved in DSH cessation; however, the aspects deemed to be important differed from those mentioned in the current study. Shaw’s sample most frequently mentioned relational aspects of professional treatment (i.e. empathy, validation, a culturally appropriate way to respond to distress) whereas the current sample mentioned pragmatic interventions, or medication. Both current and past findings indicate that professional treatment can be an important component to DSH cessation; however, not all individuals engaging in DSH require the same treatment. Care should be taken in determining whether treatment should focus on psychopathology (i.e., alcohol or other substance abuse, mood disorders, anxiety disorders), a background of trauma and invalidation, or other issues.

4.14.3 Negative coping behaviours. The current findings suggested that for 17.1% of participants, substitution of negative coping behaviours such as drug or alcohol
abuse actually assisted in DSH cessation, whereas Sinclair and Green (2005) found the opposite. This disparity may reflect a difference in alcohol abuse severity, with the participants in the current study referring to a less severe alcohol problem. Other negative behaviours that were referenced include eating pathology, extreme exercise, and other types of self-injury such as pulling hair or holding ice cubes until the point of pain. Although these behaviours are not positive per say, they could be viewed as steps in the right direction as hair pulling is generally considered to be less severe (Lloyd-Richardson et al., 2007) and extreme exercise or holding ice cubes may be seen as more socially acceptable. Symptom substitution is common among self-destructive behaviors (Farber, 1997; Sansone & Sansone, 2007); therefore, when treating DSH care should be taken to determine whether the individual has transferred their self-harm to other negative behaviours or substance use.

4.14.4 Seeking social support. Another 17.1% of participants reported that seeking social support was the strategy they implemented to cease DSH. As the current findings indicated that perceived social support is a critical factor in DSH frequency and DSH group membership, seeking social support is likely an under-utilized strategy in this population. Developing social networks and learning how to effectively communicate one’s emotions and problems with others are likely important components of DSH treatment.

4.14.5 Rationalization/self-talk. The least frequently reported strategy (11.5%) involved rationalization or self-talk. The current study included responses that indicated individuals would talk themselves down from acts of DSH, utilize positive self-talk, focus on their worth as a person or think through the negative consequences of DSH.
Shaw (2006) noted similar strategies among her participants’ narratives. The factor she entitled self-initiative involved the development of insight, development of a belief in the inherent worth of the self, and utilization of self-talk strategies and inner dialogue. These types of self-talk strategies or simply taking the time to review one’s own worth and negative consequences of DSH could be important practical components of DSH treatment.

4.15 Barriers to Cessation

Four themes of barriers to DSH cessation emerged from the current study: (1) mental illness or distress, (2) interpersonal issues, (3) ease, addictive properties, and functionality of DSH, and (4) stress. Barriers encountered during attempts to cease DSH are also relatively unexplored. Although Shaw (2006) gave some indication that ambivalence about ceasing or not fully recognizing DSH behaviours as harmful are factors related to DSH cessation, there is very little knows about what barriers are encountered by those individuals fully motivated to cease DSH.

Fortune, Sinclair, and Hawton (2008) took a different approach by asking the question “what do you think could be done to help prevent young people from feeling that they would want to harm themselves?” Using self-report questionnaires to survey 2,954 adolescents (mean age unavailable, ages 15-16), these researchers uncovered 11 broad categories of possible ways to prevent DSH. Potential barriers to DSH cessation are revealed through indications of what requires prevention. Approximately 28% of adolescents suggested talking/listening through communication and support as a primary way to help prevent DSH. Adolescents emphasized the importance of family in preventing DSH, particularly that parents should be more educated about DSH, there
should be more communication and love, and family problems need to be resolved. The importance of family was reported more often by adolescents with no history of DSH. Adolescents with no history of DSH also reported extracurricular activities as potentially preventative more often than those individuals with a DSH history. Friendship/peer-interaction was also cited as important to prevention. Many adolescents also suggested that less school-related stress (i.e., exams, bullying) could help prevent DSH as well as having access to school counsellors and more DSH-educated teachers. Formal organizations (i.e., drop-in centres, public services, internet forums) were mentioned more often by those without a history of DSH; however, mental illness was mentioned almost exclusively by those with a history of DSH. Public education related to DSH and suicidality, and who best to contact in these cases, was mentioned disproportionately by those with no DSH history. Barriers to help seeking because of confidentiality and stigma, substance abuse, and the media were all mentioned. The last category involved the notion that DSH is difficult to prevent. This last category was reported twice as often by individuals with DSH.

4.15.1 Mental illness or distress. Most frequently (34.4%), individuals expressed having difficulty ceasing DSH because of their underlying mental disorder or distress. Depression was the most common mental disorder reported. This barrier was also reflected in Fortune et al.’s (2008) finding that adolescents with a history of DSH were more likely to cite mental illness as problematic to preventing DSH. Sinclair and Green (2005) found that those individuals who came to understand their DSH as a consequence of their underlying illness benefited most from professional services. Assessment of
individuals with DSH should be mindful of potential comorbid or underlying mental illness.

4.15.2 Interpersonal issues. Abusive or overwhelming family relationships, peer pressure from friends, or issues with significant others comprised the second most frequently reported (28.1%) theme for barriers to DSH cessation. Distressing and continual interpersonal issues seem to make it difficult for individuals to focus on themselves, their needs, and their health. It seems that a balance needs to be struck between dependence on the support of others (a strategy and motivator for cessation) and the enmeshment and invalidation which are frequently cited as barriers. Klonsky (2007) aggregated results from empirical literature on the functions of DSH; two of the aggregate functions, maintaining interpersonal boundaries and seeking interpersonal influence, corroborate the necessity of an interpersonal balance among individuals who engage in DSH. Individuals report engaging in DSH as a way to affirm the boundaries as the self and to assert one’s autonomy while removing themselves from certain people in their environment. Alternatively, DSH has also been reported as a way to influence or manipulate others in order to gain attention, affection, or affirmation. Achieving an appropriate interpersonal balance may be a useful treatment goal when working with a DSH population.

4.15.3 Ease, addictive properties, and functionality of DSH. The notion that DSH in and of itself was an easy and effective (yet addictive) way to cope was also reported by numerous individuals (25.0%) in the current study. This category is somewhat novel in terms of the past literature. The belief that no other options were available to provide relief was also included in this category. This belief could indicate a
need for coping development training. Other effective options need to be identified and disseminated in such a way that is easily accessible, understood, and meaningful to self-harming populations.

4.15.4 Stress. The explicit mention of stress and failure to deal with stress occurred in 12.5% of the current study’s responses. During times of stress, individuals often revert back to habitual, comfortable, or emotion-focused coping styles (Lazarus, 1993). For an individual trying to cease an addictive, effective, and ingrained behaviour during a time of stress, other viable options need to be known, practiced, and available. Stress is a common reason for engaging in DSH (Briere & Gill, 1998); however, treatment strategies and approaches more often focus on coping with negative affect than coping with stress (Gratz 2007; Kimball, 2009). This notion of inability to cope with stress further emphasizes the need for alternate positive coping strategies and stress reduction techniques.

4.16 Strengths, Limitations, and Future Directions

The current study is the first of its kind to explicitly investigate the utility and accuracy of conceptualizing DSH in terms of transient and persistent histories. Furthermore, various social factors, attachment orientation, coping styles, affect regulation, and motivations to engage in DSH were investigated as potential predictors of both DSH history and DSH frequency. This consideration and comparison of DSH as both categorical and continuous was a novel strength of the current study. Investigation of factors related to DSH frequency has been infrequent in the past literature and exploration of DSH history categories (and their potential differences) is rarer still. Social and psychological factors were examined separately in order to gain some insight into
their respective roles in DSH. Although often considered separately, these factors have rarely been compared in terms of contribution and influence in DSH engagement or frequency. Another unique feature of the current study was the integration of both quantitative and qualitative data. The information provided by the participants regarding DSH cessation not only contributed to an undeveloped facet of DSH research, but also proved valuable during the quantitative data interpretation.

Although this is a novel study, it was not without certain limitations. First, all responses were elicited using self-report measures. Self-report is a common method utilized in psychological research; however, potential over-reporting, under-reporting, memory errors and social desirability factors may occur. Many of the questionnaires utilized in the current study required the participants to answer retrospectively about certain behaviours or events. This retrospective component could further contribute to memory error confounds. Future research could address retrospective memory limitations by utilizing a sample of currently self-harming individuals. Secondly, the current study relied on a web-based data collection methodology, which is subject to limitations such as random responding, potential for multiple submissions by a single participant, and falsification of participant identity. Despite the limitations associated with web-based data collection, certain steps were taken to protect against the potential of random responding (e.g., reliability and outlier analyses conducted on each measure) and identity falsification (e.g., protocol in which participants are identified and register with the Psychology Department Participant Pool prior to participant in the study). Thirdly, the current sample was comprised entirely of undergraduate students. Although ranging from 18 to 35 years of age and comprised of a number of different ethnic backgrounds, this
sample may not generalize to other samples (e.g., older adults, inpatients, community). Future research could utilize diverse samples in order to improve generalizability.

Fourthly, the current sample was disproportionately female (i.e., 105 females versus 34 males); a likely consequence of sampling participants from predominantly female classes. Nevertheless, despite the gender disparity in the overall sample, there were no gender differences within the DSH history groups (a finding that is consistent with existing research). Finally, unequal groups (i.e., absent, transient and persistent DSH histories) were obtained from the current sample. A more equivalent sex ratio and more equal participant distribution among groups would be preferred for future research.

The current study provides preliminary results on which to base more in-depth future studies. The importance of perceived social support and sexual trauma in the engagement of DSH implicates the need for further investigation of these constructs. The relationship between perceived social support and DSH may be mediated by sexual trauma, and more complex relationships such as this should be investigated. The importance of adulthood sexual assault (over and above childhood sexual abuse) in the engagement of DSH should be replicated in future studies. Furthermore, individuals with a history of both childhood and adulthood sexual trauma may engage in a trauma-induced type of DSH, characterized by different psychological factors than those individuals with no trauma history or physical trauma history. The potential for a trauma-induced DSH category should be further investigated. The unexpected finding that individuals with less frequent DSH report higher levels of avoidance coping should also be replicated. The possibility that this finding stems from conceptual differences of DSH (i.e., as a problem-solving versus avoidance behaviour) should be further investigated. Research is also
needed to explore ways in which DSH treatments and interventions can utilize the strategies that individuals tend to naturally rely on while ceasing DSH, while limiting the barriers that are often encountered during the process.

DSH if often conceptualized as stemming from the presence of negative social experiences and psychological vulnerabilities or inabilities (i.e., risk factors), and therefore treatment endeavors to remedy these deficits (Gratz, 2007; Kimball, 2009). The current findings seem to indicate there is something more at play. Seemingly logical psychological factors did not play a major role in the current findings, and instead other factors such as perceived social support seemed more influential. As it appears that factors such as insecure attachment and emotion dysregulation are not definitive factors differentiating transient from persistent DSH histories, then perhaps the absence of positive social experiences and psychological strengths (i.e., protective factors) determines whether someone will engage in such self-destructive behaviour a few or countless times. Future research should consider resilience factors (i.e., trust, social support, self-worth, stable environments, confidence in help-seeking, and ability to find positive meaning in negative events) and the possibility that rather than resolving deficits, prevention and treatment should focus on amplifying strengths.

4.17 Scientific and Clinical Implications

The results of the current study offer empirical evidence for the conceptualization of DSH as a continuum rather than a series of categorical DSH histories. Major differences were found between individuals with absent and present DSH histories in terms of affect regulation, coping styles, and attachment orientation; however, the same was not true between transient and persistent DSH histories. Although there were few
differences between transient and persistent histories, there were far more similarities. There was more evidence supporting the idea that individuals who have self-harmed once struggle with the same psychological and social factors as the individuals who self harm multiple times. Specifically, those with few DSH incidents are more similar to individuals with extensive DSH histories, than to those with no DSH incidents. Intake and risk assessments can benefit from this information. These assessments should be conducted in such a way that any indication of DSH should be taken as seriously as reports of multiple DSH incidents.

Social factors, particularly perceived social support and past sexual trauma, appear to be the most robust predictors of present versus absent DSH history. As such, DSH prevention may benefit from having a social focus. Addressing past sexual trauma, fostering social skills such as trust and communication, and connecting individuals to supportive communities and programming may help prevent individuals from beginning to engage in DSH. These social factors were also implicated as predictive of DSH frequency; therefore, similar social factors should also be incorporated into DSH treatment. Although some psychological factors were implicated as potential predictors, further research is needed before these psychological factors can be considered implicated as best practice in DSH treatment or prevention.

Certain reasons, strategies, and barriers to DSH cessation were identified. The reasons generally reported by individuals as motivating them to cease DSH could be capitalized on during prevention and treatment. Psychoeducation could emphasize the stupidity/futility of DSH, and the permanence and social repercussions of scarring, as these are the two main reasons for cessation. Interventions could involve family and
friends, as these individuals are reported to play an important role (through their upset, pressure, and support) in cessation. The positive coping behaviour mentioned most often by participants involved expressing their feelings through written word; therefore, this is a method that should be incorporated into treatment. Expression of feelings through writing may be especially important as expressing emotions to others is so difficult for this population. Treatment of DSH could benefit from incorporating journaling, practicing emotional expression through writing, and other written components. Self-talk and self-worth exercises tend to be utilized within this population and thus also may be a beneficial addition to treatment. Many of these treatment components are recommended as part of a dialectical behavior therapy approach (Palmer, 2002); therefore the current study also provides indirect empirical support for the utilization of a dialectical behavior therapy framework in the treatment of DSH.

Many participants indicated that they were able to cease DSH by substituting another self-destructive behaviour. Caution should be taken to ensure that individuals are not simply exchanging one unhealthy behaviour for another over the course of treatment. Addressing underlying anxiety and mood disorders, alcohol issues, and stress management when treating DSH may be of particular importance as these were major barriers encountered during the process of cessation. Mental illness was the most frequently reported barrier to DSH cessation; care in assessing and addressing underlying mental illness may be key to clinical interventions. Stress management and the development of other coping options were also implicated as important in DSH cessation; therefore, these components should also be included in treatment.
Current findings and subsequent research can help to inform the alteration or innovation of DSH prevention and treatment. Further investigation of DSH as categories or a continuum, the respective influence of social and psychological factors, and common reasons, barriers, and strategies involved in DSH cessation are warranted.
References


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Difficulties with Emotion Regulation scale. *Journal of Psychopathology and Behavioural Assessment, 26*(1), 41-54. doi: 10.1023/B:JOBA.0000007455.08539.94


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Appendix A.

OFFICE OF RESEARCH SERVICES
MEMORANDUM

DATE: September 8, 2011
TO: Bethany L. Gelas
   Psychology Department
FROM: Dr. Bruce Plouffe
       Chair, Research Ethics Board
Re: Attachment Orientation, Affect Regulation, and Coping Styles in Young Adults with Persistent, Transient, or No History of Deliberate Self-Harm (File #10S1112)

Please be advised that the University of Regina Research Ethics Board has reviewed your proposal and found it to be:

☐ 1. APPROVED AS SUBMITTED. Only applicants with this designation have ethical approval to proceed with their research as described in their applications. For research lasting more than one year (Section 1F), ETHICAL APPROVAL MUST BE RENEWED BY SUBMITTING A BRIEF STATUS REPORT EVERY TWELVE MONTHS. Approval will be revoked unless a satisfactory status report is received. Any substantive changes in methodology or instrumentation must also be approved prior to their implementation.

☐ 2. ACCEPTABLE SUBJECT TO MINOR CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.

☐ 3. ACCEPTABLE SUBJECT TO CHANGES AND PRECAUTIONS (SEE ATTACHED). Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.

☐ 4. UNACCEPTABLE AS SUBMITTED. The proposal requires substantial additions or redesign. Please contact the Chair of the REB for advice on how the project proposal might be revised.

Dr. Bruce Plouffe

cc: Dr. Kristi D. Wright - Psychology

** supplementary memo should be forwarded to the Chair of the Research Ethics Board at the Office of Research Services (Research and Innovation Centre, Room 109) or by e-mail to research.ethics@uregina.ca

Phone: (306) 585-4775
Fax: (306) 585-4933
www.uregina.ca/research

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Appendix B.

Pre-Screen Consent Form

Project Title: Attachment Orientation, Affect Regulation, and Coping Styles in Young Adults with Persistent, Transient, or Absent History of Deliberate Self-Harm

Primary Investigator: Bethany L. Gelinas, B.A.
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University of Regina
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Phone: (306) 337-3339

Research Supervisor: Kristi D. Wright, Ph.D., R. D. Psych.
Department of Psychology
University of Regina
3737 Wascana Parkway
Regina SK S4S 0A2
Phone: (306) 58-4180

Introduction: You, a current psychology student of the University of Regina, are being pre-screened for eligibility to take part in an online study about the differences in individuals using adaptive and maladaptive coping strategies. After completion of the following questionnaire, you may be contacted by the Primary Investigator Bethany L. Gelinas, B.A., to participate in the full study through the psychology participant pool. Students recruited through the psychology participant pool will be given a 1% course credit for one hour of participation. The use of the research participant pool to recruit participants in return for course credit is a common practice in psychological research. Course credit obtained by students can be used to enhance grades in participating psychology courses.

Purpose: The primary purpose of the present study is to examine the differences in individuals’ ways of coping, and specifically the use of deliberate self-harm as a coping strategy.

Voluntary Participation: Participation in this study is entirely voluntary, so it is your decision whether or not to take part in this study. Before you make a decision it is important for you to understand what the research involves. This consent form will tell you about the study, the purpose of the research, what will happen during the study, and
the possible risks, and benefits. If you do decide to take part in this study, you will be asked to sign this consent form. Even after signing the informed consent form, you can choose to drop-out at any time, refuse to answer any questions, as well as request that the information collected not be used. Choosing not to participate will not result in any negative consequences (e.g., affecting grades or services provided by the university) for yourself.

**Who is conducting the study:** The Primary Investigator Bethany L. Gelinas, B.A. She is a Master’s student in Clinical psychology at the University of Regina, Department of Psychology. This project is part of a Master’s thesis required for partial fulfillment of the University of Regina’s Master’s program.

**Specific Procedures:** Before you agree to participate, we would like to provide you with information about the procedures involved in the study so that you can make an informed decision. You will be asked to read and complete an informed consent form. Following consent, you will be asked to complete a brief demographic questionnaire, as well as a questionnaire about deliberate self-harm. Total time is expected to be approximately 5 to 10 minutes.

**Benefits:** No direct benefit can be guaranteed; however, it is anticipated that the findings from this investigation will aid in a better understanding of what influences an individual’s choice in coping mechanisms. Although participants may not benefit directly from this study, it has the potential to greatly improve our understanding of both adaptive and maladaptive ways of coping.

**Risks:** There are no anticipated risks in terms of participating in this investigation.

**Confidentiality:** Any information gathered during the data collection process is strictly confidential and will be used for research purposes only by the University of Regina. All information collected will be made anonymous. The electronic file will not contain any identifying information. The consent forms (containing the participant name) will be kept separate from the participant responses. No participant names will be put on the questionnaires, the self-report offending form, or the demographic form. All of the information that we collect will be stored on a laptop/lab computer (requiring an access code) at the University of Regina in the primary investigator’s research lab for an indefinite amount of time.

**Contact Information:** If you have any questions, feedback or comments about the research study or the results of the research study, please feel free to contact the Primary Investigator, Bethany L. Gelinas at (306) 737-9022 (e-mail: gelinabe@uregina.ca) or the supervisor of the research project Dr. Kristi D. Wright at (306) 585-4180 (e-mail: kristi.wright@uregina.ca). A summary of study results will be available once all data have been collected and analyzed. This will likely take over a year. If you have any further questions regarding research findings, please feel free to contact us.
If you have any questions or concerns about your rights as a research participant, you may contact the Chair of the Research Ethics Board at (306) 585-4775 (email: research.ethics@uregina.ca).

**Participant Consent to Participate:**

Are you 18 years of age or older?

Yes  

No

Have you read and understood the information page?

Yes  

No

Do you freely and voluntarily consent to take part in the research?

Yes  

No

Do you understand that you are being pre-screened for eligibility for participation in a full study through the psychology participant pool?

Yes  

No

Completion of this online questionnaire implies consent to participate in this project.

If you have questions you may e-mail the primary investigator, Bethany Gelinas, at gelinabe@uregina.ca or, you may contact her supervisor, Dr. Kristi Wright, at kristi.wright@uregina.ca.

You may also contact the Chair of the Research Ethics Board at the University of Regina at (306) 585-4775 or by e-mail: research.ethics@uregina.ca
Appendix C.

Consent Form

Project Title: Attachment Orientation, Affect Regulation, and Coping Styles in Young Adults with Persistent, Transient, or Absent History of Deliberate Self-Harm

Primary Investigator: Bethany L. Gelinas, B.A.
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Phone: (306) 337-3339

Research Supervisor: Kristi D. Wright, Ph.D., R. D. Psych.
Department of Psychology
University of Regina
3737 Wascana Parkway
Regina SK S4S 0A2
Phone: (306) 58-4180

Introduction: You, a current psychology student of the University of Regina, are being invited to take part in an online study about the differences in individuals using adaptive and maladaptive coping strategies. Students recruited through the psychology participant pool will be given a 1% course credit for one hour of participation. The use of the research participant pool to recruit participants in return for course credit is a common practice in psychological research. Course credit obtained by students can be used to enhance grades in participating psychology courses.

Purpose: The primary purpose of the present study is to examine the differences in individuals’ ways of coping, and specifically the use of deliberate self-harm as a coping strategy.

Voluntary Participation: Participation in this study is entirely voluntary, so it is your decision whether or not to take part in this study. Before you make a decision it is important for you to understand what the research involves. This consent form will tell you about the study, the purpose of the research, what will happen during the study, and the possible risks, and benefits. If you do decide to take part in this study, you will be asked to sign this consent form. Even after signing the informed consent form, you can choose to drop-out at any time, refuse to answer any questions, as well as request that the information collected not be used. Choosing not to participate will not result in any negative consequences (e.g., affecting grades or services provided by the university) for yourself.
Who is conducting the study: The Primary Investigator Bethany L. Gelinas, B.A. She is a Master’s student in Clinical psychology at the University of Regina, Department of Psychology. This project is part of a Master’s thesis required for partial fulfillment of the University of Regina’s Master’s program.

Specific Procedures: Before you agree to participate, we would like to provide you with information about the procedures involved in the study so that you can make an informed decision. You will be asked to read and complete an informed consent form. Following consent, you will be asked to complete a demographic questionnaire, as well as 8 other questionnaires asking questions about coping strategies, deliberate-self harm, attachment orientation, emotion regulation, and social support. Total time is expected to be approximately 1 hour; however, it may take less time.

Benefits: No direct benefit can be guaranteed; however, it is anticipated that the findings from this investigation will aid in a better understanding of what influences an individual’s choice in coping mechanisms. Although participants may not benefit directly from this study, it has the potential to greatly improve our understanding of both adaptive and maladaptive ways of coping.

Risks: There are no anticipated risks in terms of participating in this investigation.

Confidentiality: Any information gathered during the data collection process is strictly confidential and will be used for research purposes only by the University of Regina. All information collected will be made anonymous. The electronic file will not contain any identifying information. The consent forms (containing the participant name) will be kept separate from the participant responses. No participant names will be put on the questionnaires, the self-report offending form, or the demographic form. All of the information that we collect will be stored on a lap top/lab computer (requiring an access code) at the University of Regina in the primary investigator’s research lab for an indefinite amount of time.

Use of Survey Monkey: It is also important for you to know that "Survey Monkey", a web-survey company that is located in the USA, is the host of this on-line research. This company is subject to U.S. laws; in particular, the US Patriot Act that allows authorities access to the records of internet service providers. Survey Monkey's servers record incoming IP addresses - including that of the computer that you use to access the survey. However, no connection is made between your data and your computer's IP address. If you choose to participate in the survey, you understand that your anonymous responses to the survey questions will be stored and accessed in the USA.

As An Internet-Based Study, What Are the Possible Breaches to Confidentiality and Security: As an Internet-based research study, there is a very small risk that participation may compromise your privacy. A description of these risks follows:
1. To prevent multiple submissions from the same source, this study will record your computer's Internet address, which is a special identification number assigned to your computer by your Internet Service Provider. This information will be stored in a file until the research is completed, at which point the file will be deleted. This information will not be used to identify individuals.

2. The electronic submission of your responses may, in rare instances, be intercepted by unauthorized third parties using sophisticated tools. The likelihood of this occurring is extremely rare and is a risk for anyone when using a computer generally.

3. When using a computer that is connected to the Internet to access websites, information about the websites that you visit will be stored in your Internet browser's history list and in its disk cache. This can be resolved by clearing the history list and disk cache. Note, however, that responses to the survey are only stored temporarily on your computer until you close your browser window. Therefore, after you submit your responses, your computer will automatically delete this information.

4. Given the manner in which this study is being conducted, all of the survey responses will be sent immediately to the survey software website. The survey software website then stores the responses in a private folder accessible only by the primary researchers. All responses will be downloaded weekly and kept in a secure location by the primary researcher until the conclusion of the study. The data stored on these disks cannot be associated with you or your Internet address.

Contact Information: If you have any questions, feedback or comments about the research study or the results of the research study, please feel free to contact the Primary Investigator, Bethany L. Gelinas at (306) 737-9022 (e-mail: gelinabe@uregina.ca) or the supervisor of the research project Dr. Kristi D. Wright at (306) 585-4180 (e-mail: kristi.wright@uregina.ca). A summary of study results will be available once all data have been collected and analyzed. This will likely take over a year. If you have any further questions regarding research findings, please feel free to contact us.

If you have any questions or concerns about your rights as a research participant, you may contact the Chair of the Research Ethics Board at (306) 585-4775 (email: research.ethics@uregina.ca).
Participant Consent to Participate:

Are you 18 years of age or older?
Yes
No

Have you read and understood the information page?
Yes
No

Do you freely and voluntarily consent to take part in the research?
Yes
No

Completion of this online questionnaire implies consent to participate in this project.

If you have questions you may e-mail the primary investigator, Bethany Gelinas, at gelinebe@uregina.ca or, you may contact her supervisor, Dr. Kristi Wright, at kristi.wright@uregina.ca.

You may also contact the Chair of the Research Ethics Board at the University of Regina at (306) 585-4775 or by e-mail: research.ethics@uregina.ca
Appendix D.

Demographic Questionnaire

1. What is your current age in years? _______

2. What is your sex? Male_____ / Female_____ 

3. What is your current relationship status? Single_____ / In a Relationship_____ 

4. What is your ethnic origin? 
   Aboriginal_____/ African_____ / Caribbean_____ / East Asian_____ / 
   South Asian_____ / West Asian_____ / European_____ / Latin, Central, or South 
   American_____ / Mediterranean_____ / Middle Eastern_____ / Pacific Islands_____ / 
   Multiple origins_____ / Other origin_____ 

5. Have you ever had past contact with a mental health professional (e.g., psychiatrist, psychologist, school counselor, social worker)?
   Yes / No 
   If yes, on how many separate occasions? _____ 

6. Have you ever been given a psychiatric diagnosis by a mental health professional? 
   Yes / No 
   If yes, what were the diagnoses given? ______ 

7. Have you ever experienced a natural disaster (e.g., flood, hurricane, earthquake, etc.)? 
   Yes / No 
   If yes: 
   How many times? _____ 
   Did you experience intense fear, helplessness, or horror when it happened? 
   Yes / No
Were you seriously injured?
Yes / No

8. Have you ever been involved in a motor vehicle accident for which you received medical attention, or that badly injured or killed someone?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

9. Have you ever been involved in another kind of accident where you or someone else was seriously hurt (e.g., plane crash, drowning or near drowning, machinery accident, explosion, etc)?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

10. Have you ever experienced the sudden and unexpected death of a loved one or close friend?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

11. Have you ever had a life threatening illness or injury?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

12. As an adult, have you ever been physically attacked or assaulted by a stranger or by someone you didn’t know very well?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

13. As a child, were you ever physically abused?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No

14. As an adult, have you ever been sexually assaulted?
Yes / No
If yes:
How many times? _____
Did you experience intense fear, helplessness, or horror when it happened?
Yes / No
15. As a child, were you ever sexually abused?

Yes / No

If yes:

How many times? _____

Did you experience intense fear, helplessness, or horror when it happened?

Yes / No
Appendix E.

Deliberate Self-Harm Offset Questionnaire

1. Have you, at one time intentionally engaged in deliberate self-harm (e.g., skin-cutting, skin-carving, self-burning, etc), but do not engage any longer?
   Yes / No
   If yes:

2. What was your primary reason for wanting to stop self-harming?

3. List any additional reasons for wanting to stop self-harming. _____

4. Did you use a strategy to help stop this behaviour?
   Yes / No
   If yes, please list:

5. Was there something that you encountered that prevented you from stopping this behaviour?
   Yes / No
   If yes, please list:
Appendix F.

Coping Strategy Index (CSI)

When troubled, how often have you:

1. Described your feelings to a friend
2. Rearranged things so your problem could be solved
3. Thought of many ideas before deciding what to do
4. Tried to distract yourself from the problem
5. Accepted sympathy and understanding from someone
6. Did all you could to keep others from seeing how bad things really were
7. Talked to people about the situation because talking about it made you feel better
8. Set some goals for yourself to deal with the situation
9. Weighed up your options carefully
10. Daydreamed about better times
11. Tried different ways to solve the problem until you found one that worked
12. Talked about fears and worries to a relative or friend
13. Spend more time than usual alone
14. Told people about the situation because talking about it helped you come up with solutions
15. Thought about what needed to be done to straighten things up
16. Turned your full attention to solving the problem
17. Formed a plan in your mind
18. Watched television more than usual
19. Went to someone, friend or professional to help you feel better
20. Stood firm and fought for what you wanted in the situation
21. Avoided being with people in general
22. Buried yourself in a hobby or sports activity to avoid the problem
23. Went to a friend to help you feel better about the problem
24. Went to a friend for advice about how to change the situation
25. Accepted sympathy and understanding from friends who had the same problem
26. Slept more than usual
27. Fantasized about how things could have been different
28. Identified with characters in movies or novels
29. Tried to solve the problem
30. Wished that people would just leave you alone
31. Accepted help from a friend or relative
32. Sought reassurance from those who knew you best
33. Tried to carefully plan a course of action rather than acting on impulse

1 = A lot, 2 = A little, 3 = Not at all
Appendix G.

Deliberate Self-Harm Inventory (DSHI)

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?

Yes / No

If yes:

a) How old were you when you first did this?

b) How many times have you done this?

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 behaviour ever resulted in hospitalization or injury severe enough to require medical treatment?

*Repeat questions a) through e) for all following questions.

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

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

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

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

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

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

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

9. Have you ever intentionally (i.e., on purpose) dripped acid onto your skin?
10. Have you ever intentionally (i.e., on purpose) used bleach, comet, or oven cleaner to scrub your skin?

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)?

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

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

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

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

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

17. Have you ever intentionally (i.e., on purpose) done anything else to hurt yourself that was not asked about in this questionnaire? If yes, what did you do to hurt yourself?
Appendix H.

Inventory of Statements About Self-Injury (ISAS) – Section II. Functions

This inventory was written to help us better understand the experience of non-suicidal self-harm. Below is a list of statements that may or may not be relevant to your experience of self-harm. Please identify the statements that are most relevant to you.

When I self-harm I am…

1. …calming myself down
2. … creating a boundary between myself and others
3. … punishing myself
4. … giving myself a way to care for myself (by attending to the wound)
5. … causing pain so I will stop feeling numb
6. … avoiding the impulse to attempt suicide
7. … doing something to generate excitement or exhilaration
8. … bonding with peers
9. … letting others know the extent of my emotional pain
10. … seeing if I can stand the pain
11. … creating a physical sign that I feel awful
12. … getting back at someone
13. … ensuring that I am self-sufficient
14. … releasing emotional pressure that has built up inside of me
15. … demonstrating that I am separate from other people
16. … expressing anger towards myself for being worthless or stupid
17. … creating a physical injury that is easier to care for than my emotional distress
18. … trying to feel something (as opposed to nothing) even if it is physical pain
19. … responding to suicidal thoughts without actually attempting suicide
20. … entertaining myself or others by doing something extreme
21. … fitting in with others
22. … seeking care of help from others
23. … demonstrating I am tough or strong
24. … proving to myself that my emotional pain is real
25. … getting revenge against others
26. … demonstrating that I do not need to rely on others for help
27. … reducing anxiety, frustration, anger, or other overwhelming emotions
28. … establishing a barrier between myself and others
29. … reacting to feeling unhappy with myself or disgusted with myself
30. … allowing myself to focus on treating the injury, which can be gratifying or satisfying
31. … making sure I am still alive when I don’t feel real
32. … putting a stop to suicidal thoughts
33. … pushing my limits in a manner akin to skydiving or other extreme activities
34. … creating a sign of friendship or kinship with friends or loves ones
35. … keeping a loved one from leaving or abandoning me
36. … proving I can take the physical pain
37. … signifying the emotional distress I am experiencing
38. … trying to hurt someone close to me
39. … establishing that I am autonomous/independent

0 = not relevant for you at all
1 = somewhat relevant for you
2 = very relevant for you
Appendix I.

Revised Adult Attachment Scale (RAAS)

The following questions concern how you generally feel in important close relationships in your life. Think about your past and present relationships with people who have been especially important to you, such as family members, romantic partners, and close friends. Respond to each statement in terms of how you generally feel in these relationships.

Please use the scale below by placing a number between 1 and 5 in the space provided to the right of each statement.

1---------------2---------------3---------------4---------------5

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Not at all characteristic of me</td>
<td>Very characteristic of me</td>
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</table>

1. I find it relatively easy to get close to people. _______
2. I find it difficult to allow myself to depend on others. _______
3. I often worry that other people don’t really love me. _______
4. I find that others are reluctant to get as close as I would like. _______
5. I am comfortable depending on others. _______
6. I don’t worry about people getting too close to me. _______
7. I find that people are never there when you need them. _______
8. I am somewhat uncomfortable being close to others. _______
9. I often worry that other people won’t want to stay with me. _______
10. When I show my feelings for others, I’m afraid they will not feel the same about me.

11. I often wonder whether other people really care about me.

12. I am comfortable developing close relationships with others.

13. I am uncomfortable when anyone gets too emotionally close to me.

14. I know that people will be there when I need them.

15. I want to get close to people, but I worry about being hurt.

16. I find it difficult to trust others completely.

17. People often want me to be emotionally close than I feel comfortable being.

18. I am not sure that I can always depend on people to be there when I need them.
Appendix J.

Center for Epidemiologic Studies Depression Scale (CES-D)

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

1. I was bothered by things that usually don’t bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get “going”.

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0 = Rarely or none of the time (less than 1 day)
1 = Some of a little of them (1-2 days)
2 = Occasionally or a moderate amount of time (3-4 days)
3 = Most or all of the time (5-7 days)
Appendix K.

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1. I am clear about my feelings.
2. I pay attention to how I feel.
3. I experience my emotions as overwhelming and out of control.
4. I have no idea how I am feeling.
5. I have difficulty making sense out of my feelings.
6. I am attentive to my feelings.
7. I know exactly how I am feeling.
8. I care about what I am feeling.
9. I am confused about how I feel.
10. When I’m upset, I acknowledge my emotions.
11. When I’m upset, I become angry with myself for feeling that way.
12. When I’m upset, I become embarrassed for feeling that way.
13. When I’m upset, I have difficulty getting work done.
14. When I’m upset, I become out of control.
15. When I’m upset, I believe that I will remain that way for a long time.
16. When I’m upset, I believe that I’ll end up feeling very depressed.
17. When I’m upset, I believe that my feelings are valid and important.
18. When I’m upset, I have difficulty focusing on other things.
19. When I’m upset, I feel out of control.
20. When I’m upset, I can still get things done.
21. When I’m upset, I feel ashamed with myself for feeling that way.
22. When I’m upset, I know that I can find a way to eventually feel better.
23. When I’m upset, I feel like I am weak.
24. When I’m upset, I feel like I can remain in control of my behaviours.
25. When I’m upset, I feel guilty for feeling that way.
26. When I’m upset, I have difficulty concentrating.
27. When I’m upset, I have difficulty controlling my behaviours.
28. When I’m upset, I believe that there is nothing I can do to make myself feel better.
29. When I’m upset, I become irritated with myself for feeling that way.
30. When I’m upset, I start to feel very bad for myself.
31. When I’m upset, I believe that wallowing in it is all I can do.
32. When I’m upset, I lose control over my behaviours.
33. When I’m upset, I have difficulty thinking about anything else.
34. When I’m upset, I take time to figure out what I’m really feeling.
35. When I’m upset, it takes me a long time to feel better.
36. When I’m upset, my emotions feel overwhelming.

1 = almost never (0-10%)
2 = sometimes (11-35%)
3= about half the time (36-65%)
4 = most of the time (99-90%)
5= almost always (91-100%)
Appendix L.

MOS Social Support Survey (MOS-SSS)

1. About how many close friends and close relative do you have (people you feel at ease with and can talk to about what is on your mind)?

   People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it?

2. Someone to help you if you were confined to bed.

3. Someone you can count on to listen to you when you need to talk.

4. Someone to give you good advice about a crisis.

5. Someone to take you to the doctor if you needed it.

6. Someone who shows you love and affection.

7. Someone to have a good time with.

8. Someone to give you information to help you understand a situation.

9. Someone to confide in or talk to about yourself or your problems.

10. Someone who hugs you.

11. Someone to get together with for relaxation.

12. Someone to prepare your meals if you were unable to do it yourself.

13. Someone whose advice you really want.

14. Someone to do things with to help you get your mind off things.

15. Someone to help with daily chores if you were sick.

16. Someone to share your most private worries and fears with.

17. Someone to turn to for suggestions about how to deal with a personal problem.

18. Someone to do something enjoyable with.


20. Someone to love and make you feel wanted.
1 = none of the time
2 = a little of the time
3 = some of the time
4 = most of the time
5 = all of the time
Appendix M.

Debriefing form

**Project Title:** Attachment Orientation, Affect Regulation, and Coping Styles in Young Adults with Persistent, Transient, or Absent History of Deliberate Self-Harm

Thank you for taking the time to participate in this study on the use of adaptive and maladaptive coping strategies, such as deliberate self-harm (DSH). This study constitutes the Master’s thesis of Bethany Gelinas and your contribution is appreciated.

The majority of individuals who engage in deliberate self-harm view these behaviours as a way of coping with emotion (Briere & Gil, 1998; Polk & Liss, 2009). Past research on DSH has revealed that that some individuals will engage in DSH persistently, over long periods of time, whereas other individuals engage transiently, over a short period of time. However, very few studies have examined the differences between individuals who transiently engage, and those who persistently engage in DSH. Oftentimes in the literature, individuals who have engaged in a single DSH behavior are grouped along with individuals who have a far more frequent and extensive history of DSH. According to the precedent literature, this is an inappropriate grouping system as there is evidence of important differences between individuals who engage persistently and transiently in DSH. These differences include attachment orientation, coping styles, emotion regulation, and other factors.

The researchers are seeking to investigate the relationships between attachment orientation, coping styles, emotion regulation and DSH, as well as to develop a better understanding of how individuals cease DSH behaviours in favour of more adaptive ways of coping. This study will contribute to the small body of literature examining the differences between transient and persistent DSH engagement. Any differences between individuals who engage transiently and those who engage persistently in DSH could have important implications for prevention and treatment of DSH. The strategies and experiences of those individuals who engaged transiently in DSH but were able to find other ways to cope could also be applied to enhance the treatment of individuals persistently using DSH as a way of coping.

Thank you for your participation. If you are interested in the results of this study please contact the primary investigator, Bethany Gelinas (gelinabe@uregina.ca), who will arrange for the information to be sent to you once the study is complete. Questions are welcomed, and any concerns that you may have are important and should be addressed.