

Functions of Nonsuicidal Self-Injury: Comparing those With and Without a History of
Physical Intimate Partner Violence

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ABSTRACT

This study examined the relationship between physical intimate partner violence (IPV) victimization and nonsuicidal self-injury (NSSI). This study also compared the reported functions of NSSI among those who reported a history of physical IPV and those who did not. A total of 310 undergraduate college students (61% female; 39% male) were administered the Inventory of Statements About Self-Injury (ISAS), as well as a modified version of the Severity of Violence Against Women and Men Scales (SVAW/MS). When considering the entire sample, 24% reported a history of NSSI, 53% reported a history of physical IPV, and 16% reported a history of both NSSI and physical IPV. Results indicated that individuals who reported a history of physical IPV were more likely to report a history of NSSI than their nonabused counterparts. Results indicated no significant difference in reported functions of NSSI among those with and without a reported history of physical IPV.

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CHAPTER 1

INTRODUCTION

Nonsuicidal self-injury (NSSI) refers to intentional harm to one's own body that occurs without suicidal intent (Nock, 2009). Self-injury can include a variety of behaviors, such as cutting, scratching, burning, punching, and head banging (Heath, Toste, Nedecheva, & Charlebois, 2008). Although past research on NSSI has focused primarily on clinical samples (e.g., Briere & Gil, 1998), more recent studies have identified similar rates of NSSI among nonclinical samples as well, particularly among college students (e.g., Buser & Hackney, 2012) and adolescents (e.g., Baetens, Claes, Muehlenkamp, Grietens, & Onghena, 2012). Further, it has been suggested that rates of NSSI have actually been increasing (Nock, 2009). In addition to prevalence, it is important to investigate NSSI because this type of behavior can result in negative outcomes, such as accidental death (e.g., Nafisi & Stanley, 2007).

Nonsuicidal self-injury is often used as a way of coping with other problems (Evans, Hawton, & Rodham, 2005), such as emotion dysregulation (e.g., Heath et al., 2008) and self-hatred (e.g., Laye-Gindhu & Schonert-Reichl, 2005). Various studies have investigated the functions (i.e., factors that strengthen and support self-injurious behavior) of NSSI (Klonsky, 2007). Some of the most commonly reported functions of NSSI include affect regulation, self-punishment, antidissociation/feeling-generation, interpersonal influence, interpersonal boundaries, antisuicide (Klonsky, 2007), and peer/social influence (Nock & Prinstein, 2004). Research suggests that a variety of risk factors and correlates are associated with NSSI, including psychological problems (e.g., Baetens et al., 2012) and a history of abuse (e.g., Akyuz, Sar, Kugu, & Doğan, 2005).

Intimate partner violence is a more specific form of abuse that has been linked to NSSI (e.g., Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010). Although studies have linked the general classification of intimate partner violence to self-injury (e.g., Levesque et al., 2010), no published studies have investigated the link between self-injury and intimate partner violence that is solely physical in nature.

Intimate partner violence (IPV) refers to physical, sexual, and/or psychological abuse committed within an intimate partnership (Centers for Disease Control and Prevention [CDC], 2012). Intimate partner violence, particularly physical IPV, is prevalent among adolescents (Simon, Miller, Gorman-Smith, Orpinas, & Sullivan, 2010) and college students (e.g., Amar & Gennaro, 2005). Research suggests that there is a positive correlation between rates of physical IPV victimization and the development of psychological problems, such as negative affect, low self-esteem (e.g., Clements, Ogle, & Sabourin, 2005), dissociation (e.g., Callahan, Tolman, & Saunders, 2003), and suicidal ideation (e.g., Ackard, Neumark-Sztainer, & Hannan, 2003). Many of these symptoms have been identified as reasons for NSSI among those who self-injure (e.g., Low, Jones, MacLeod, Power, & Duggan, 2000; Nock & Prinstein, 2004). Although research suggests a link between the broader category of IPV (i.e., a combination of physical, sexual, and psychological abuse within intimate partnerships) and NSSI (e.g., Levesque et al., 2010), no published studies have investigated the reported functions of self-injury among individuals with a history of physical intimate partner violence victimization.

The primary focus of this study was to examine the relationship between physical intimate partner violence and nonsuicidal self-injury. Additionally, this study examined which functions of NSSI were associated with physical intimate partner violence.

Definitions and Terms for Nonsuicidal Self-Injury

The terms and definitions used to describe nonsuicidal self-injury (NSSI) vary significantly. Three components, however, have been used consistently throughout the literature to define NSSI: the behavior is intentional, causes harm to one's body, and is present despite the absence of suicidal intent (e.g., Andover, Schatten, Crossman, & Donovan, 2011; Bakken & Gunter, 2012; Nock, 2009). Put simply, "NSSI is the direct, deliberate destruction of one's own body tissue in the absence of intent to die" (Nock, 2009, p. 78).

Many terms have been used to describe nonsuicidal self-injury. These terms include, but are not limited to, nonsuicidal self-injury (Andover & Gibb, 2010; M. Z. Brown, Comtois, & Linehan, 2002), self-harm (Darke, Torok, Kaye, & Ross, 2010), deliberate self-harm (Chapman, Specht, & Cellucci, 2005; Gratz & Roemer, 2008), self-inflicted injury (M. Z. Brown, Linehan, Comtois, Murray, & Chapman, 2009), nonsuicidal self-harm (Laye-Gindhu & Schonert-Reichl, 2005), self-mutilation (Suyemoto, 1998), and self-injury (Bakken & Gunter, 2012; Gollust, Eisenberg, & Golberstein, 2008). Adding to this confusion, the term "self-injurious behavior" (SIB) has been most frequently used to describe repetitive, self-harming behaviors present in individuals with developmental or intellectual disabilities (Matson & Turygin, 2012). This term, however, also has been used to describe NSSI (Andover et al., 2011).

Just as there are many terms used to describe NSSI, similar variations are present in how NSSI is measured and defined. A number of researchers simply state the definition of NSSI in a question format. For example, Laye-Gindhu and Schonert-Reichl (2005) asked participants "have you ever done anything on purpose to injure, hurt, or

harm yourself or your body but you weren't trying to kill yourself?" (p. 449). Other studies have taken a different approach to defining NSSI by providing a list of specific self-harming behaviors (e.g., Baetens et al., 2012; Hoff & Muehlenkamp, 2009; Sansone, Chu, & Wiederman, 2007). For example, Baetens et al. (2012) asked participants if they had ever performed the following behaviors on purpose: head banging, skin abrading, hitting, cutting, or burning.

Another way in which the definitions of NSSI may vary across studies is in the specified time frame. The time frame for NSSI tends to vary for each study. For example, Hoff and Muehlenkamp (2009) investigated lifetime prevalence of NSSI. Other researchers use a more restrictive time frame (e.g., Bakken & Gunter, 2012; Gollust et al., 2008). For example, Bakken and Gunter (2012) inquired about participants' NSSI behaviors in the past 12 months. In examining more recent episodes of NSSI, Gollust et al. (2008) inquired about participants' self-harm within the past 4 weeks. Despite the discrepancies in the time frames and terminology used to define NSSI, there is consensus among researchers that nonsuicidal self-injury must be intentional, must cause harm to one's body, and must occur in the absence of suicidal intent. The ongoing effort to develop a consistent description of NSSI-related behaviors is evidenced in the recent attempt to legitimize NSSI as its own disorder in the psychiatric community.

It has been proposed that nonsuicidal self-injury be included in the upcoming *Diagnostic and Statistical Manual of Mental Disorder (DSM-5)* as a disorder in and of itself (American Psychiatric Association, 2012). The proposed diagnostic criteria for this disorder includes intentional harm to one's body in the absence of suicidal intent. The method used for self-injury cannot be socially acceptable (e.g., culturally sanctioned

rituals) or common (e.g., biting nails as a nervous habit). This behavior must persist for 5 or more days and must have occurred within the past year. Additionally, the self-injury must be associated with at least two of the following: A preceding psychological event (e.g., depression) that prompted the immediate onset of the behavior, an intense urge to engage in the behavior, incessant thoughts of engaging in the behavior, and/or the expectation of some form of relief from an undesirable state of mind. The proposal to define such behavior as a mental disorder may be in response to reports of high prevalence of NSSI among both clinical and community samples.

Prevalence of Nonsuicidal Self-Injury

There is a substantial amount of research regarding the prevalence of nonsuicidal self-injury across various populations. Rates of NSSI are particularly high among psychiatric patients (i.e., Andover & Gibb, 2010; M. Z. Brown et al., 2009; Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010). Andover and Gibb (2010) found that 45% of psychiatric inpatients reported engaging in self-injury without the intent to die. Research suggests that the rates of NSSI among psychiatric inpatients may vary by diagnosis. For example, M. Z. Brown et al. (2009) found that 82% of female inpatients with borderline personality disorder reported a history of NSSI. In contrast, Claes et al. (2010) identified NSSI in 43.5 % of psychiatric inpatients with diagnosed eating disorders.

NSSI is common also among nonclinical samples, such as in adolescents (Baetens et al., 2012; Ross & Heath, 2002). Research regarding the prevalence of nonsuicidal self-injury among adolescents, however, has yielded mixed results. For example, in a study of lifetime prevalence of NSSI among community adolescents, Laye-Gindhu and

Schonert-Reichl (2005) and Ross and Heath (2002) found similar rates of 15% and 14%, respectively. In contrast, Baetens et al. (2012) found that 35% of adolescents had engaged in some form of self-injury. The sample in this study, however, was made up of primarily female adolescents (81%). The sex of participants was more evenly distributed in the studies conducted by Laye-Gindhu and Schonert-Reichl (2005) and Ross and Heath (2002). It is possible that the discrepancies in prevalence of NSSI among adolescent samples are due to differences in sample characteristics.

Similar to nonclinical samples of adolescents, studies have found that NSSI is common among nonclinical samples of college students (e.g., Buser & Hackney, 2012). Rates of NSSI among college students range from as low as 7% (Gollust et al., 2008) to as high as 58% (Buser & Hackney, 2012). These discrepancies may be the result of differences in the conceptualization of NSSI, as well as in the definitional time frame specified (e.g., having engaged in self-injury in the past 6 months versus in the past 12 months) across these studies. For example, Gollust et al. (2008) found that 7% of college students had engaged in some form of NSSI in the past 4 weeks. In contrast, Buser and Hackney (2012) found that 58% of college students reported some form of NSSI (e.g., cutting skin, hitting self, pulling hair out) during the past 12 months. In two separate studies, approximately 23% of college students reported a lifetime history of some form of self-injury without the intent to die (Bresin & Gordon, 2011; Hoff & Muehlenkamp, 2009). Despite the variation among reported rates of NSSI, the literature suggests that self-injury is relatively common among both clinical and nonclinical samples.

Methods of Nonsuicidal Self-Injury

Numerous methods of nonsuicidal self-injury have been reported across the literature. Many studies have identified cutting as the most common method of NSSI among both clinical (e.g., Andover & Gibb, 2010; Claes et al., 2010) and nonclinical samples (e.g., Bresin & Gordon, 2011; Heath et al., 2008; Hoff & Muehlenkamp, 2009; Laye-Gindhu & Schonert-Reichl, 2005). Cutting appears to be particularly high in clinical samples. For example, Andover and Gibb (2010) found that 49% of psychiatric inpatients with a history of NSSI reported using cutting as a primary method of self-injury.

Consistent with clinical studies, research suggests that cutting is prevalent among nonclinical samples, such as in adolescents and college students. For example, Laye-Gindhu and Schonert-Reichl (2005) found that 43% of adolescents with a history of NSSI reported cutting-type behaviors. Similarly, Bresin and Gordon (2011) found that 50% of college students with a history of NSSI reported cutting.

Although a large majority of the research on nonsuicidal self-injury has found that cutting is among the most common methods of NSSI among nonclinical populations (e.g., Bresin & Gordon, 2011; Laye-Gindhu & Schonert-Reichl, 2005), some studies have shown the opposite (e.g., Baetens et al., 2012; Buser & Hackney, 2012). For example, Buser and Hackney (2012) found that biting (37%) and scraping skin (26%) were the most commonly reported forms of self-injury among college students. In the same study, 8.5% of participants reported cutting or carving their skin. It is possible, however, that the high rate of self-reported biting was due to a lack of clarity in the definition of that particular type of NSSI. In a study with Flemish adolescents, Baetens et al. (2012) found

that head banging (21%) and skin abrading (16%) were the most frequently reported methods of self-injury. In this study, approximately 12% of participants reported cutting as a preferred method of self-injury. It is possible that the discrepancies between this study and other studies regarding methods of NSSI are primarily due to differences in sample characteristics (e.g., the study was conducted in Belgium).

In addition to cutting, various other methods of NSSI have been reported among college students and adolescents. These methods include wound picking/wound interference (e.g., Gollust et al., 2008; Victor, Glenn, & Klonsky, 2012), scraping/rubbing skin (e.g., Giletta, Scholte, Engels, Ciairano, & Prinstein, 2012; Victor et al., 2012), punching/hitting self (e.g., Baetens et al., 2012; Heath et al., 2008), burning skin (Baetens et al., 2012), scratching (Bresin & Gordon, 2011; Gollust et al., 2008; Victor et al., 2012), inserting objects under skin/nails (e.g., Giletta et al., 2012; Hoff & Muehlenkamp, 2009), and head banging (Gollust et al., 2008; Heath et al., 2008; Victor et al., 2012). Numerous methods of NSSI have been reported throughout the literature, but it appears that cutting is the most common among both clinical and nonclinical samples. Although a large number of studies have focused on the prevalence of various methods of self-injury, perhaps even more important are the reasons for which individuals engage in such behavior.

Functions of Nonsuicidal Self-Injury

Klonsky (2007) defines “functions” of NSSI as “motivating and reinforcing variables” (p. 228) that maintain self-injury. A substantial amount of research (e.g., Klonsky, 2007; Knowles & Townsend, 2012; Laye-Gindhu & Schonert-Reichl, 2005) has focused on these motivating factors and several models have been proposed to help

understand the underlying functions of NSSI behaviors. In what appears to be the most frequently cited model of NSSI, Nock and Prinstein (2004) explain the functions of NSSI in terms of automatic and social reinforcement. Specifically, Nock and Prinstein (2004) propose that NSSI is maintained through automatic-negative reinforcement, automatic positive-reinforcement, social-negative reinforcement, and/or social-positive reinforcement.

A substantial amount of research has evidenced support for this model. For example, in a meta-analysis examining the functions of NSSI, Klonsky (2007) identified seven functions of self-injury that have been reported most frequently throughout the literature. These functions include affect regulation, antidissociation/feeling-generation, self-punishment, interpersonal influence, interpersonal boundaries, antisuicide and sensation seeking. In addition to the seven functions identified by Klonsky (2007), some studies have identified peer/social influence (e.g., Heath, Ross, Toste, Charlebois, & Nedecheva, 2009; Prinstein et al., 2010) as a reported function of NSSI. Each of these functions can be understood in terms of three of the four types of reinforcements proposed by Nock and Prinstein (2004). Specifically, each of the aforementioned functions is related to one of the following types of reinforcement proposed by Nock and Prinstein (2004): automatic-negative reinforcement, automatic-positive reinforcement, or social-positive reinforcement.

Automatic-Negative Reinforcement

Automatic-negative reinforcement involves engaging in NSSI in order “to achieve a reduction in tension or other negative affective state” (Nock & Prinstein, 2004, p. 886), such as to alleviate negative feelings. One function of NSSI that is related to this type of

reinforcement is affect regulation. The affect regulation function of nonsuicidal self-injury has commonly been described as the use of self-injury as a strategy “to alleviate acute negative affect or aversive affective arousal” (Klonsky, 2007, p. 229).

Furthermore, research suggests that affect regulation is the most commonly reported function of NSSI among both clinical (e.g., M. Z. Brown et al., 2002; Nock & Prinstein, 2004) and nonclinical (Laye-Gindhu & Schonert-Reichl, 2005; Scoliers et al., 2009) samples. For example, Nock and Prinstein (2004) found that 53% of adolescent psychiatric inpatients reported engaging in NSSI in order “to stop bad feelings” (p. 888). Similarly, in a study of adolescents from Australia, Belgium, England, Hungary, Ireland, the Netherlands, and Norway, Scoliers et al. (2009) found that 67% of those who had engaged in NSSI reported doing so in order “to get relief from a terrible state of mind” (p. 604). The majority of research regarding the affect regulation function of NSSI has relied on retrospective analyses. Arney, Crowther, and Miller (2011), however, found support for the affect regulation function of NSSI by measuring the affective states of college students before and after an incident of self-injury. Specifically, participants who reported self-injury experienced negative affect prior to engaging in NSSI and experienced relief from that negative affect after engaging in NSSI. A similar concept that has been supported in the literature is experiential avoidance.

Related to affect regulation, Chapman, Gratz, and Brown (2006) proposed experiential avoidance as a function of NSSI. The experiential avoidance model of NSSI involves “behaviors that function to avoid or escape from unwanted emotional experiences” (Chapman et al., 2006, p. 375). Experiential avoidance has been identified as a function of NSSI in some studies (e.g., Claes et al., 2010). For example, in a study

of psychiatric inpatients with diagnosed eating disorders, Claes et al. (2010) found that experiential avoidance was the most commonly reported motivation for self-harm among those who reported burning (100%), cutting (77%), or severe scratching (69%) as their primary method of self-injury. Specifically, participants reported engaging in NSSI in order “to avoid or suppress negative feelings” (p. 388).

Another function that can be classified as automatic-negative reinforcement is the antisuicide functions of NSSI. This function involves using self-injury as “a suicide replacement, a compromise between life and death drives” (Suyemoto, 1998, p. 537) and has been supported in a number of studies (e.g., Claes et al., 2010; Laye-Gindhu & Schonert-Reichl, 2005). Though not examined by Nock and Prinstein (2004), the antisuicide function of NSSI may be thought of as a form of automatic-negative reinforcement because it involves engaging in self-injury in order to temporarily stop or subdue the urge to commit suicide. For example, in a study of community adolescents, Laye-Gindhu and Schonert-Reichl (2005) found that 41% reported “it stopped me from killing myself” (p. 452). Claes et al. (2010) found similar results in a sample of female psychiatric inpatients with diagnosed eating disorders. Specifically, a substantial number of participants reported that their self-injurious behavior functioned “to avoid or suppress suicidal thoughts” (p. 388). The percent of participants endorsing antisuicide as a motivating force behind their self-injurious behavior was broken down by primary method of self-injury: bruising (19%), scratching (31%) cutting (46%), and burning (80%).

Automatic-Positive Reinforcement

Automatic-positive reinforcement of NSSI is described by Nock and Prinstein (2004) as self-injury that functions “to create a desirable physiological state” (p. 886), such as to feel something or to punish oneself. One function of NSSI that involves this type of reinforcement is self-punishment. Self-punishment has been consistently cited throughout the literature as a common function of nonsuicidal self-injury among both clinical (e.g., Claes et al., 2010) and nonclinical (e.g., Laye-Gindhu & Schonert-Reichl, 2005; Scoliers et al., 2009) samples. For example, in a study of psychiatric inpatients with diagnosed eating disorders, Claes et al. (2010) found that self-punishment was the most commonly reported reason for engaging in self-injury among those who reported bruising as their primary method of self-harm. Similarly, in a community sample of adolescents, Laye-Gindhu and Schonert-Reichl (2005) found that a significant number of participants reported reasons for NSSI that were related to self-hatred. Specifically, 70% of participants reported engaging in NSSI because they did not like themselves, 64% reported doing so because they felt like a failure, and 63% reported doing so because they were angry with themselves. Slightly different rates of self-punishment as a reported function of NSSI were identified among an international sample of community adolescents. Scoliers et al. (2009) found that 38% of participants with a lifetime history of NSSI reported “I wanted to punish myself” (p. 604) as a motivating factor for their behavior. It is likely that the discrepancies between the aforementioned studies involving community adolescents are due to differences in the way that self-punishment was defined, as well as other sample characteristics (i.e., geographic location of the samples).

Another function of NSSI that is classified by Nock and Prinstein (2004) as automatic-positive reinforcement is antidissociation or feeling-generation. The antidissociation/feeling-generation function of NSSI involves engagement in self-injury as a way of coping with a dissociative state or as a means of generating some kind of feeling (Klonsky, 2007). A number of studies have found evidence to support this function of NSSI (e.g., Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004). For example, Nock and Prinstein (2004) found that 34% of adolescent psychiatric inpatients with a history of NSSI reported doing so in order “to feel something, even if it was pain” (p. 888). Similar results were found in a sample of community adolescents in which 41% of those who self-harmed reported that their behavior was motivated by wanting “to make myself feel something” (Laye-Gindhu & Schonert-Reichl, 2005, p. 452). A related concept proposed by Klonsky and Glenn (2009) is self-care, which involves the creation of a more tangible or physical injury that is seemingly easier to manage than emotional pain.

Though not examined by Nock and Prinstein (2004), the sensation-seeking function of NSSI may be thought of as automatic-positive reinforcement in that this function involves engaging in self-injury in order “to seek excitement and adventure” (Glenn & Klonsky, 2010, p. 68). Although less frequently cited than some of the aforementioned functions of self-injury (e.g., affect regulation), sensation seeking has received some support as a function of NSSI (e.g., Glenn & Klonsky, 2010). For example, in a study of college students, Glenn and Klonsky (2010) found that those who reported NSSI were more likely to report sensation seeking than those who did not report NSSI.

Social-Positive Reinforcement

Social-positive reinforcement involves engaging in NSSI in order to secure “attention from others” or “gain access to materials” (Nock & Prinstein, 2004, p. 886). Several proposed reasons for NSSI that are identified as social-positive reinforcement by Nock and Prinstein (2004) can be considered a function of NSSI that some researchers (e.g., Klonsky, 2007) refer to as interpersonal influence. The interpersonal influence function of NSSI involves engaging in self-harm in order “to seek help from or manipulate others” (Klonsky, 2007, p. 229). Examples of this function have been identified among both clinical (Nock & Prinstein, 2004) and nonclinical (e.g., Heath et al., 2009; Scoliers et al., 2009) samples. For example, in a study of adolescent psychiatric inpatients, Nock and Prinstein (2004) found that a substantial portion of participants with a history of NSSI reported motivations related to interpersonal influence. Specifically, the following motivations were reported: “to get other people to act differently or change” (12%; p. 888), “to try to get a reaction from someone, even if it’s negative” (15%; p. 888), “to get your parents to understand or notice you” (13%; p. 888), “to let others know how desperate you were” (14%; p. 888), and “to get attention” (14%; p. 888).

Interpersonal influence has been identified among nonclinical samples as well. For example, in a study of college students with a history of NSSI, Heath et al. (2009) found that 48% reported that the underlying motivation for their behavior was “to communicate hurting” (p. 183). Similarly, in an international study of community adolescents, Scoliers et al. (2009) found that a significant portion of those who reported a history of NSSI reported doing so for reasons related to interpersonal influence.

Specifically, 35% reported doing so because “I wanted to show how desperate I was feeling” (p. 604), 34% reported doing so because “I wanted to find out whether someone really loved me” (p. 604), and 22% reported doing so because “I wanted to get attention” (p. 604). Similarly, some studies have reported revenge as a function of NSSI (e.g., Knowles & Townsend, 2012; Laye-Gindhu & Schonert-Reichl, 2005). Revenge may be related to the interpersonal influence function of NSSI in that the underlying intent is to elicit some response from others. For example, Laye-Gindhu and Schonert-Reichl (2005) reported that 21% of adolescents with a history of NSSI reported engaging in self-harming behavior because “I wanted to get back at someone” (p. 452).

In a review of the literature, Klonsky (2007) noted that some studies have identified an interpersonal boundaries function of NSSI. This function involves self-injury that “is an attempt to create a distinction between self and others” (Suyemoto, 1998, p. 537). This function of NSSI has received some support in the literature (e.g., Briere & Gil, 1998). For example, Briere and Gil (1998) found that 71% of participants reported engaging in NSSI in order to feel a sense of self-control, and 26% reported doing so in order to feel “ownership of body” (p. 615). As a related concept, Klonsky and Glenn (2009) proposed toughness as a function of NSSI (i.e., proving that I can handle pain). Claes et al. (2010) found that 40% of participants with a history of NSSI who reported that burning was their primary method of self-injury reported doing so in order “to show myself how strong I am” (p. 388).

The peer/social influence function of NSSI is related to social-positive reinforcement in that it involves self-harming behavior that is primarily related to peer socialization (Prinstein et al., 2010). Studies of clinical samples have found evidence for

this function of NSSI (e.g., Nock & Prinstein, 2004; Prinstein et al., 2010). For example, in a study of adolescent psychiatric inpatients, Nock and Prinstein (2004) found that, of those with a history of NSSI, 6% reported doing so “to be like someone you respect” (p. 888), and 7% reported doing so “to feel more a part of a group” (p. 888). Findings from studies of nonclinical samples also found some support for this function of NSSI (e.g., Heath et al., 2009; Laye-Gindhu & Schonert-Reichl, 2005; Prinstein et al., 2010). For example, in a study of community adolescents, Laye-Gindhu and Schonert-Reichl (2005) found that 4% of those with a history of NSSI reported that the motivation for their behavior was that “it helped me join a group” (p. 452). In a study investigating social influence on NSSI, Heath et al. (2009) found that 65% of college students with a history of NSSI endorsed some type of social motivation, including “to not feel like an outsider” (p. 183). This category, however, also included motivations such as “to get attention”. Therefore, an exact percentage of participants who reported engaging in NSSI “to not feel like an outsider” is unknown. In this same study, 44% of participants with a history of NSSI reported that their behavior was socially learned. Although the support is less evident than that provided for other functions of NSSI (e.g., affect regulation), the literature does offer some support for the idea that NSSI behavior may be partially motivated by social and peer influence.

Summary of NSSI Functions

As the literature suggests, various functions of NSSI have been reported by those who self-injure. Affect regulation (e.g., reducing overwhelming emotions) appears to be the most frequently reported function of NSSI among both clinical (e.g., Nock & Prinstein, 2004) and nonclinical (e.g., Scoliers et al., 2009) samples. Similarly, self-

punishment, antidissociation/feeling-generation, interpersonal influence, interpersonal boundaries, antisuicide (Klonsky, 2007), and peer/social influence (Nock & Prinstein, 2004) have been frequently reported throughout the literature on NSSI.

Each of these functions can be classified as one of three types of reinforcement (i.e., automatic-negative reinforcement, automatic-positive reinforcement, and social-positive reinforcement) proposed by Nock and Prinstein (2004). Affect regulation, experiential avoidance, and antisuicide are all functions that can be categorized as automatic-negative reinforcement, which involves self-injury that is motivated by reduction of a negative affective state. Self-punishment, antidissociation/feeling-generation, and sensation seeking can all be classified as automatic-positive reinforcement, which involves self-injury motivated by generation of a desirable physiological state. Interpersonal influence, interpersonal boundaries, and peer/social influence can be classified as social-positive reinforcement, which involves self-injury that is motivated by eliciting some response from others.

In most studies examining various functions of NSSI, participants were able to endorse more than one reason for their self-injuring behavior (e.g., Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004). Studies suggest that those who self-injure frequently report more than one reason for their behavior (e.g., Klonsky, 2011). For example, Klonsky (2011) found that 67% of adults who reported self-injury endorsed more than one function of NSSI. Therefore, it is important to understand that the rates reported for each function are relative to the other functions that were reported by the same participants in the same study.

Self-injury is often precipitated by or associated with some other factor. In this regard, NSSI serves the function of regulating some thought process or behavior that is associated with that factor. In addition to investigating the reasons for NSSI, it is important to understand what puts someone at risk for engaging in this type of behavior.

Risk Factors and Correlates of NSSI

A substantial amount of literature on NSSI has focused on the risk factors and correlates of self-injury (e.g., Akyuz et al., 2005; Bakken & Gunter, 2012; Gratz, Conrad, & Roemer, 2002; Levesque et al., 2010). A substantial amount of this research has examined the psychological correlates of self-injury. According to various studies, NSSI is associated with a number of psychological disorders, such as borderline personality disorder (Chapman et al., 2005; Kerr & Muehlenkamp, 2010), eating disorders (Bakken & Gunter, 2012; Gollust et al., 2008; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008), anxiety (Baetens et al., 2012; Gollust et al., 2008), depression (Giletta et al., 2012; Gollust et al., 2008), dissociation (Gratz et al., 2002; Low et al., 2000), and drug abuse (Bakken & Gunter, 2012; Giletta et al., 2012; Hilt et al., 2008). Emotional distress, including feelings of sadness and hopelessness, has been linked to self-injury in both adolescents (e.g., Bakken & Gunter, 2012; Laye-Gindhu & Schonert-Reichl, 2005) and college students (e.g., S. A. Brown, Williams, & Collins, 2007). Other factors associated with self-harm include low self-esteem (Laye-Gindhu & Schonert-Reichl, 2005) and anger that is directed toward the self (Low et al., 2000).

In addition to psychological factors associated with self-injury, trauma-related factors, such as a history of abuse or victimization, also appear to be associated with self-injury (e.g., Akyuz et al., 2005; Levesque et al., 2010). Specifically, researchers have

found a link between various forms of self-injury and childhood abuse, including sexual (e.g., Akyuz et al., 2005; Gratz, 2006; Gratz et al., 2002; Whitlock, Muehlenkamp, & Eckenrode, 2008), emotional (e.g., Akyuz et al., 2005; Buser & Hackney, 2012; Gratz et al., 2002; Whitlock et al., 2008), and physical abuse (e.g., Akyuz et al., 2005). Similarly, sexual assault (e.g., Bakken & Gunter, 2012) and physical assault (e.g., Darke et al., 2010) victimization have been linked to self-injury as well. In addition to childhood abuse and adult assault victimization, research suggests that victims of intimate partner violence are at an increased risk for self-injury (Levesque et al., 2010).

Definitions of Intimate Partner Violence

According to the Centers for Disease Control and Prevention (CDC, 2012) intimate partner violence (IPV) refers to violence that is physical, sexual, and/or psychological in nature and that is inflicted on an individual by a previous or current partner. For the purpose of this study, however, the review of the literature will focus on research specifically evaluating physical intimate partner violence. The way in which physical intimate partner violence is defined varies across the literature. Many studies define physical IPV by providing a specific definition of physical IPV. For example, in a study conducted by Howard, Wang, and Yan (2007), participants were asked, “During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?” (p. 314). Some studies offer an even more specific definition of physical IPV by providing participants with a list of physically aggressive acts from which they are able to indicate which behaviors (if any) have been perpetrated against them in current or past dating relationships (e.g., Lehrer, Lehrer, & Zhao, 2010; Simon et al., 2010). These acts range from less severe (e.g., scratched) to more severe (e.g., assaulted

with a gun or knife). Other studies rely on participants' self-reports of physical IPV by asking participants to indicate whether or not they believe that they have been physically abused in a dating relationship (e.g., Miller, 2011).

Studies that rely on participants' self-identification may yield less accurate results than studies that measure abuse differently because participants tend not to define the acts that are perpetrated against them as physical abuse (e.g., Miller, 2011; Perry & Fromuth, 2005). For example, in a sample of male and female college students, Miller (2011) found that only 14% of participants who had been physically abused in a dating relationship actually identified their partner's behavior as physically abusive. This disparity in perception is often due to the way that the abuse is defined. For example, if a study asks participants to indicate whether or not they have been physically abused by marking "yes" or "no", then a problem could arise if the participant's concept of what constitutes physical abuse is different than that of the researcher's. It is especially important to understand the differences among the ways in which physical IPV is measured and defined because these inconsistencies may lead to discrepancies in the reported prevalence of physical IPV.

Prevalence of Intimate Partner Violence

Physical intimate partner violence is prevalent among both college students (Perry & Fromuth, 2005) and adolescents (Simon et al., 2010). Reported rates of IPV among college students range from as low as 14% (Miller, 2011) to as high as 42% (Perry & Fromuth, 2005). For example, in a mixed-sex study of college students, Miller (2011) found that participants reported rates of physical IPV victimization of 14%. In contrast, Perry and Fromuth (2005) found a reported rate of physical IPV victimization of 42%

among male participants in a mixed-sex couples study of college students. The variation in the rates of physical intimate partner violence among college students may be due to sex differences in the sample and to differences in the way that IPV was measured and defined.

Rates of physical intimate partner violence among adolescents are inconsistent and range from as low as 10% (Howard et al., 2007) to as high as 42% (Simon et al., 2010). For example, Howard et al. (2007) found that 10% of female adolescents experienced some form of physical dating violence within the last 12 months. In contrast, in a mixed-sex study of U.S. adolescents, Simon et al. (2010) found that 42% of participants reported having been a victim of physical dating violence in the past 3 months. The discrepancy between the rates of physical dating violence among adolescents in these studies may be due to sex differences in the sample.

A significant amount of research has focused primarily on female victims of physical intimate partner violence (e.g., Howard et al., 2007; Kaukinen, Gover, & Hartman, 2012; Montero et al., 2011). The tendency for studies on physical IPV victimization to exclude men may lead to inaccurate conclusions about the prevalence of physical IPV in general. Contrary to popular belief (Esquivel-Santoveña & Dixon, 2012), research suggests that women are not always more likely to report physical IPV victimization when compared to men (e.g., Perry & Fromuth, 2005; Simon et al., 2010). For example, Perry and Fromuth (2005) found that 42% of male college students and 30% of female college students reported experiencing physical IPV. It is important to accurately understand the prevalence of physical IPV among specific populations in order to appropriately address the consequences stemming from this particular type of abuse.

Correlates of Physical Intimate Partner Violence

Research suggests that victims of physical intimate partner violence experience a wide range of psychological problems associated with their abuse, including negative affect, dissociation (e.g., Callahan et al., 2003), suicidal ideation (e.g., Ackard et al., 2003), and low self-esteem (e.g., Clements et al., 2005). Clements et al. (2005) theorize that involvement in abusive dating relationships may serve to increase negative affective states (e.g., depression, anxiety, hopelessness) and decrease positive affective states (e.g., optimism, life satisfaction). Numerous studies have identified a positive correlation between physical IPV and symptoms associated with a negative affective state (e.g., Clements et al., 2005; Howard et al., 2007). For example, in a study of both male and female college students, Clements et al. (2005) found that participants who reported higher levels of physical abuse in dating relationships within the past month also had higher levels of dysphoria and hopelessness. Similarly, Howard et al. (2007) found that adolescent girls who reported physical victimization in dating relationships within the past year were more likely to report feelings of sadness and hopelessness than their nonabused counterparts. Research also supports the idea that involvement in an abusive dating relationship is associated with decreased positive affective states (e.g., Clements et al., 2005; Zlotnick, Johnson, & Kohn, 2006). For instance, Zlotnick et al. (2006) found that women who reported experiencing physical IPV during the past year also reported lower levels of life satisfaction. Similarly, Clements et al. (2005) found that college students' recent reports (i.e., within the past 3 months) of physical abuse in dating relationships were negatively correlated with levels of optimism.

A number of studies have found evidence to support a link between low self-esteem and physical IPV victimization (e.g., Ackard & Neumark-Sztainer, 2002; Clements et al., 2005; Zlotnick et al., 2006). In one study, Clements et al. (2005) found a significant negative correlation between self-esteem and reported levels of violence in dating relationships within the past month. Similarly, Zlotnick et al. (2006) found that women who reported higher levels of physical IPV in dating relationships during the past year were more likely to report lower levels of self-esteem than their nonabused counterparts.

Dissociation (e.g., detachment or feeling numb) is another psychological correlate of physical IPV that has been commonly reported throughout the literature (e.g., Callahan et al., 2003). For example, Callahan et al. (2003) found that adolescent girls who reported dating violence victimization (i.e., physical assault and sexual coercion) were more likely to report higher levels of dissociation than their nonabused counterparts. Similarly, in a study of women in Ireland, Dorahy, Lewis, and Wolfe (2007) found that female victims of domestic violence reported higher levels of dissociation than their nonabused counterparts. These studies suggest that there is a significant relationship between dissociation and physical IPV victimization.

Another psychological correlate of physical IPV is suicidal ideation. The relationship between physical IPV victimization and suicidal ideation has been examined in a number of studies (Ackard et al., 2003; Chan, Straus, Brownridge, Tiwari, & Leung, 2008). Chan et al. (2008) found a significant positive correlation between suicidal ideation and physical dating violence victimization among male and female college students. Similarly, Ackard et al. (2003) found that 54% of female adolescents and 57%

of male adolescents who reported physical dating violence victimization also reported suicidal thoughts.

As the literature suggests, victims of physical intimate partner violence may display a variety of psychological correlates associated with their abuse. Specifically, increased negative affect, dissociation (Callahan et al., 2003), suicidal ideation (Ackard et al., 2003), and low self-esteem (Clements et al., 2005) have all been reported among victims of physical IPV and to a higher degree than their nonabused counterparts. These psychological correlates may have important implications for the development of self-injuring behavior among victims of physical IPV.

Intimate Partner Violence and Nonsuicidal Self-Injury

Although no studies to date have investigated the correlation between NSSI and intimate partner violence that is solely physical in nature, research suggests that there is a positive correlation between intimate partner violence in general (i.e., physical, sexual, verbal, and/or emotional) and self-injury (Boyle & Todd, 2003; Levesque et al., 2010; Murray, Wester, & Paladino, 2008; Sansone et al., 2007). For example, in a study of adult patients at a UK emergency room, Boyle and Todd (2003) found that women who reported a history of NSSI were 75 times more likely to report having been physically or verbally abused by their partners than women who do not have a history of NSSI. Similarly, Levesque et al. (2010) found a significant positive correlation between intimate partner violence (i.e., physical, psychological, and sexual) and NSSI among both male and female young adults. This relationship also has been observed among clinical samples (e.g., Sansone et al., 2007). For example, Sansone et al. (2007) found a significant positive correlation between intimate partner violence (i.e., threats and acts of

domestic violence) and self-inflicted bodily harm among female psychiatric inpatients.

In addition to the correlation between IPV in general and self-injury, there may be similar links between the functions of NSSI and the psychological correlates of physical IPV.

The psychological correlates reported by victims of physical IPV may have important implications for the development of self-injuring behavior. Specifically, the psychological correlates of IPV may correspond directly with the functions of self-injury reported by those with a history of IPV and NSSI. For example, research suggests that victims of physical dating violence report feelings of sadness and hopelessness more often than their nonabused counterparts (e.g., Howard et al., 2007), suggesting that affect dysregulation may be a common correlate of physical IPV victimization. Similarly, individuals with a history of NSSI often report engaging in self-injury in order “to stop bad feelings” (Nock & Prinstein, 2004, p. 888) or “to get relief from a terrible state of mind” (Scoliers et al., 2009, p. 603). Studies such as these (e.g., Nock & Prinstein, 2004; Scoliers et al., 2009) suggest that affect regulation is a commonly reported function among those who self-injure. It is possible, then, that individuals with a history of physical IPV who also self-injure do so in order to regulate thought processes that were associated with the abuse. For example, an individual with a history of physical IPV victimization may develop problems with affect regulation as a consequence of the abuse and may then utilize self-injury as a way of regulating negative affect. This connection highlights the need for further investigation of the relationship between physical IPV and the proposed functions of NSSI.

Summary and Hypotheses

Nonsuicidal self-injury (NSSI) refers to intentional harm to one's body without suicidal intent (Nock, 2009). Research suggests that adolescents (Baetens et al., 2012) and college students (Buser & Hackney, 2012) are at a particularly high risk for NSSI. Around 14% (Ross & Heath, 2002) to 35% (Baetens et al., 2012) of adolescents report a history of NSSI. The rates of NSSI among college students vary from around 7% (Gollust et al., 2008) to 58% (Buser & Hackney, 2012). Individuals with a history of NSSI report a variety of methods of self-injury. Cutting appears to be the most common method of self-injury among both clinical (e.g., Andover & Gibb, 2010) and nonclinical (e.g., Laye-Gindhu & Schonert-Reichl, 2005) samples.

One reason why it is particularly important to understand this type of behavior is that it may lead to harmful consequences, such as accidental death (Nafisi & Stanley, 2007). It also is important to understand that NSSI is often associated with other problems in an individual's life, such as depression (e.g., Knowles & Townsend, 2012) or self-hatred (i.e., Laye-Gindhu & Schonert-Reichl, 2005). Various researchers have sought to explain the reasons why individuals engage in self-injury. These reported reasons for NSSI are frequently categorized as functions (i.e., motivating and reinforcing factors) of NSSI (Nock & Prinstein, 2004). Affect regulation (i.e., relief from an undesirable state of mind) appears to be the most frequently reported function of NSSI (e.g., Scoliers et al., 2009). Other functions of NSSI that have been consistently cited throughout the literature include self-punishment, antidissociation/feeling-generation, interpersonal influence, interpersonal boundaries, antisuicide (Klonsky, 2007), and peer/social influence (Nock & Prinstein, 2004).

Research suggests that a variety of risk factors and correlates are associated with NSSI, such as psychological problems (e.g., Chapman et al., 2005) and a history of abuse or victimization (e.g., Levesque et al., 2010). One form of abuse that is positively correlated with NSSI is intimate partner violence (e.g., Levesque et al., 2010; Sansone et al., 2007). Intimate partner violence refers to physical, sexual, and/or psychological abuse that is committed within an intimate partnership (CDC, 2012). IPV has been reported more often by those with a history of NSSI than those without a history of NSSI among both clinical (e.g., Sansone et al., 2007) and nonclinical (Levesque et al., 2010) samples. Intimate partner violence, particularly physical intimate partner violence, is frequently reported among adolescents (e.g., Simon et al., 2010) and college students (e.g., Perry & Fromuth, 2005). Rates of IPV range from 10% (Howard et al., 2007) to 42% (Simon et al., 2010) among adolescents and from 14% (Miller, 2011) to 42% (Perry & Fromuth, 2005) among college students.

Although studies have identified a link between intimate partner violence in general and NSSI (e.g., Sansone et al., 2007), no published study has examined the relationship between NSSI and intimate partner violence that is strictly physical in nature. An examination of the literature on self-injury and physical IPV suggests a possible correlation between these two factors. In addition to the correlation identified between NSSI and IPV in general (i.e., physical, sexual, emotional, verbal, and/or psychological), it appears that victims of physical intimate partner violence often report psychological correlates of the abuse, such as negative affect, dissociation (e.g., Callahan et al., 2003), low self-esteem (e.g., Clements et al., 2005), and suicidal ideation (Ackard et al., 2003), that correspond with several specific functions of NSSI reported by individuals who self-

injure. It is possible that, for individuals with a history of both physical IPV and NSSI, the specific factors that motivate and maintain their self-injury are related to their abuse. For example, individuals with a history of both physical IPV victimization and NSSI may be using self-injury as a way of coping with the psychological symptoms associated with their victimization. Individuals who do not have a history of physical IPV may report different reasons for their self-injuring behavior. Currently, no study has investigated the link between physical IPV and reported functions of NSSI. Specifically, no published study has examined whether or not individuals who have experienced physical IPV report different functions for NSSI than individuals who have not experienced physical IPV.

The purpose of the current study was to explore the relationship between physical intimate partner violence and nonsuicidal self-injury. Additionally, the association of physical IPV victimization and the reported functions of NSSI was examined. Due to previous research linking NSSI to intimate partner violence in general (e.g., physical, sexual, and emotional; Levesque et al., 2010), it was hypothesized that NSSI would be significantly correlated with physical intimate partner violence. Additionally, based on a review of literature highlighting similarities between specific functions of NSSI and reported psychological correlates of physical IPV, it was hypothesized that the following functions of NSSI would be reported more often by victims of physical IPV than by their nonabused counterparts who self-harm: affect regulation, self-punishment, antidissociation/feeling-generation, and antisuicide. Conversely, it was expected that individuals who reported self-harm, but did not report a history of physical IPV, would endorse different reasons for NSSI, such as functions related to interpersonal boundaries,

self-care, sensation-seeking, peer-bonding, interpersonal influence, toughness, marking distress, revenge, and autonomy.

The following hypotheses were presented:

- 1) Individuals reporting a history of NSSI would be more likely to report a history of physical intimate partner violence than individuals who did not report a history of NSSI.
- 2) Individuals in the NSSI group who also reported a history of physical intimate partner violence would endorse reasons for self-injury related to affect regulation, self-punishment, antidissociation/feeling-generation, and antisuicide more often than those in the NSSI group who reported no history of physical intimate partner violence.
- 3) Individuals who did not report a history of IPV would endorse reasons for self-injury related to interpersonal boundaries, self-care, sensation-seeking, peer-bonding, interpersonal influence, toughness, marking distress, revenge, and autonomy more often than individuals who reported a history of physical IPV.

CHAPTER II

METHOD

Participants

As part of a larger study, 310 undergraduate college students were recruited from a psychology research pool at a public university in the southeastern region of the United States. Demographic information for the entire sample was analyzed. Sixty-one percent of participants (190) identified as female, and 39% (120) of participants identified as male. In terms of race, 30% of participants self-identified as African American, 57% self-identified as Caucasian, and 12% self-identified as a race other than Caucasian or African American. The majority (87%) of participants was between the ages of 18 to 21 years, 8% were between the ages of 22 to 25 years, and 5% were 26 years of age or older. Prior to conducting analyses, the current study received approval from the Middle Tennessee State University Institutional Review Board (See Appendix A). Further, participants were given research credits as compensation for their participation.

Measures

Demographic information. In order to ensure anonymity, participants were asked to provide a limited amount of demographic information with regard to their sex (i.e., male, female), race (i.e., African American, Caucasian, Other), and age (i.e., 18-21, 22-25, 26-29, 30-33, over 33).

The Inventory of Statements About Self-Injury (ISAS). The Inventory of Statements about Self-Injury (ISAS; Klonsky & Glenn, 2009) is a self-report measure that assesses various aspects of nonsuicidal self-injury (NSSI). The ISAS is broken up into two sections related to the frequency and the functions of NSSI. Section one of the

ISAS is made up of seven items, such as the age at which a participant first self-harmed. The current study, however, focused only on the question related to the presence and frequency of 12 intentional self-harm behaviors (i.e., cutting, severe scratching, biting, banging or hitting self, burning, interfering with wound healing, carving, rubbing skin against rough surface, pinching, sticking self with needles, pulling hair, and swallowing dangerous substances). Although this question addresses the presence and frequency of self-harm, the current study focused only on whether or not participants indicated (*yes/no*) that they had engaged in at least one of the 12 self-harm behaviors within the past year in the absence of suicidal intent. For the purpose of the current study, participants who indicated the presence of any of the aforementioned self-harm behaviors in the absence of suicidal intent within the past year were classified in the NSSI group. Participants who did not indicate the presence of any of the 12 self-harm behaviors in the absence of suicidal intent within the past year were classified in the non-NSSI group.

According to a study conducted by Klonsky and Olino (2008), the 12 NSSI behaviors assessed on the ISAS have excellent internal consistency ($\alpha = .84$). Similarly, construct validity of the ISAS was demonstrated by correlating the total NSSI score with the suicide/self-harm item on the McLean Screening Instrument for Borderline Personality Disorder. According to Glenn and Klonsky (2011), section one of the ISAS has good one-year test-retest reliability, with a median correlation of .68.

The second section of the ISAS consists of 39 items that assess 13 functions (i.e., affect regulation, interpersonal boundaries, self-punishment, self-care, antidissociation/feeling-generation, antisuicide, sensation-seeking, peer-bonding, interpersonal influence, toughness, marking distress, revenge, and autonomy) of NSSI.

Each function is represented by three questions regarding corresponding reasons (e.g., When I self-harm, I am... “calming myself down”) for self-harm. Participants rate each item on a scale of 0 to 2 (0 = *Not relevant*, 1 = *Somewhat relevant*, 2 = *Very relevant*). Based on results from an exploratory factor analysis, Klonsky and Glenn (2009) described the ISAS factors as having excellent internal consistency. The functions on the ISAS were grouped into two factors: Interpersonal boundaries, which had a coefficient alpha of .88, and intrapersonal boundaries, which had a coefficient alpha of .80. Similarly, the functions on the ISAS were correlated with corresponding clinical scales (i.e., Depression Anxiety Stress Scales, The McLean Screening Instrument for Borderline Personality Disorder, and Youth Risk Behaviors Survey), demonstrating the construct validity of the ISAS. Glenn and Klonsky (2011) also demonstrated one-year test-retest reliability in which the median correlation was .59.

The internal consistency of the 13 functions on the ISAS was calculated for the current study. Internal consistency reliability was determined using Cronbach’s coefficient alpha (α). When examining only the participants who reported a history of NSSI and indicated that their answers on the functions section referred to their own self-harm, alpha coefficients for the 13 functions of NSSI ranged from a low of .50 for Self-Care to a high of .90 for Revenge, with a median of .77. See Table 1.

The Severity of Violence Against Women/Men Scales (SVAW/MS).

The Severity of Violence Against Women Scales (SVAWS; Marshall, 1992a) consists of 46 items addressing violence committed or threatened by a partner. The

Table 1

Internal Consistency for Each of the 13 Functions of Nonsuicidal Self-Injury

Functions of NSSI	Cronbach's Coefficient Alpha
	NSSI Group
Affect regulation	.74
Interpersonal boundaries	.74
Self-punishment	.81
Self-care	.50
Antidissociation/Feeling-generation	.58
Anti-suicide	.82
Sensation-seeking	.69
Peer bonding	.82
Interpersonal influence	.81
Toughness	.79
Marking distress	.77
Revenge	.90
Autonomy	.61

Note. Each function is represented by three items of the *ISAS*. *NSSI* = Nonsuicidal Self-Injury. *N* = 49.

SVAWS consists of three subscales related to physical violence, sexual aggression, and threats of violence. Although participants in the current study were administered questions on the physical acts of violence and sexual aggression subscales of the SVAWS, the current study focused only on participants' responses to questions related to the physical acts of violence subscale. The physical acts of violence subscale of the SVAWS is comprised of 21 items related to acts of physical violence (e.g., "How often has your partner"... "pushed or shoved you", "punched you", "kicked you") committed by a participant's partner within the past 12 months. Participants' responses are based on a 4-point scale (1 = *never*, 2 = *once*, 3 = *a few times*, 4 = *many times*). According to a compendium published by the National Center for Injury Prevention and Control of the Centers for Disease Control and Prevention, the coefficient alpha for the acts of violence subscale of the SVAWS is .95 (Thompson, Basile, Hertz, & Sitterle, 2006). This compendium also cited evidence for the construct validity of the SVAWS.

A similar version of the SVAWS was created to address the severity and frequency of violence committed against men by their partners (Marshall, 1992b). This scale consists of the same 46 items that are presented on the SVAWS, though there is no symbolic violence subscale, and some of the items are interpreted slightly differently. For example, kicking your partner is considered to be a mild act of violence for the SVAWS, but it is considered to be a severe act of violence on the SVAMS. Further, on the original SVAMS, the physical acts of violence subscale consists of 20 items (Marshall, 1992b), whereas the physical acts of violence subscale on the SVAWS consists of 21 items (Marshall, 1992a). The version of the SVAMS that was used for the current study, however, was modified so that the items on the physical acts of violence

subscale were the same 21 items presented on the SVAWS. Internal consistency of the SVAWS was calculated for the current study. The alpha coefficient for the 21 items on the SVAWS for the overall sample was .91, indicating excellent internal consistency.

For the purpose of this study, history of physical violence was treated as a dichotomous variable (yes/no). Specifically, participants who indicated that an act of physical violence had been committed against them at least once by a partner within the past year were classified as having a history of physical intimate partner violence.

Procedure

Informed consent (See Appendix B) was obtained from each participant prior to participation. In groups, participants completed an anonymous survey that was constructed using a variety of measures including: Inventory of Statements About Self-Injury (ISAS; Klonsky & Glenn, 2009), Severity of Violence Against Women and Men Scales (SVAW/MS; Marshall, 1992a; Marshall, 1992b), the Multi-Dimensional Measure of Emotional Abuse (MMEA; Murphy & Hoover, 1999), the Experiences in Close Relationships Scale-Short Form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007), and the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). After completing the survey, each participant received a debriefing form (See Appendix C) and contact information for local mental health services.

CHAPTER III

RESULTS

Descriptive Statistics

A total of 75 (24%) participants reported engaging in at least one of the 12 self-harm behaviors within the past year in the absence of suicidal intent. A total of 163 participants (53%) reported having been the victim of physical intimate partner violence within the last 12 months.

Chi-square tests of independence were conducted to examine possible differences among the study variables with regard to sex. A significance level of .05 was used for these analyses. These analyses found no significant sex differences with regard to NSSI, $\chi^2(1, N = 310) = .07, p = .79$. Among male participants, 25% reported a history of NSSI within the past 12 months. Similarly, among female participants, 24% reported a history of NSSI in the past 12 months. Further, no sex differences were found with regard to physical intimate partner violence, $\chi^2(1, N = 310) = 1.31, p = .25$. Among male participants, 57% reported a history of physical intimate partner violence victimization. Similarly, among female participants, 50% reported a history of physical IPV.

Hypothesis Testing

Due to the exploratory nature of the current study, all hypotheses were tested at an alpha level of .05. The first hypothesis was analyzed using a chi-square test in order to determine if a history of physical IPV was related to a history of NSSI. Both physical IPV and history of NSSI were treated as dichotomous variables (yes/no), and the entire sample of participants was used in this analysis. The results of the chi-square test indicated that there was a significant relationship between nonsuicidal self-injury and

physical intimate partner violence victimization, $\chi^2(1, N = 310) = 7.87, p = .01$. When considering individuals with a reported history of physical IPV victimization, 31% reported a history of NSSI. When considering individuals who did not report a history of physical IPV victimization, 17% reported a history of NSSI.

The second and third hypotheses examined the reported functions of NSSI among individuals who reported a history of physical IPV and those who did not. These hypotheses focused on the section of the ISAS that examined participants' reported functions of NSSI. In order to ensure that participants spent an approximately equal amount of time on the surveys, participants were required to complete the functions section of the ISAS regardless of whether or not they reported a history of self-harm. Participants were asked to indicate whether or not their answers on the functions section of the ISAS referred to "myself" or "someone else". Although 75 participants reported a history of NSSI, only 49 participants indicated that the functions referred to their own reasons for self-harm. Therefore, the analyses for the second and third hypotheses included only the participants who reported a history of self-harm and indicated that their responses on the functions section of the ISAS referred to "myself".

The second hypothesis predicted that individuals who reported both a history of NSSI and physical intimate partner violence would endorse affect regulation, self-punishment, antidissociation/feeling-generation, and antisuicide functions of self-harm more often than those in the NSSI group who reported no history of physical intimate partner violence. The third hypothesis predicted that individuals who did not report a history of physical IPV would endorse reasons for self-injury related to interpersonal boundaries, self-care, sensation-seeking, peer-bonding, interpersonal influence,

toughness, marking distress, revenge, and autonomy more often than individuals who reported a history of physical IPV. Independent sample *t*-tests were used to examine the relationship between functions of NSSI and a history of physical IPV. Specifically, the means for each of the 13 functions of NSSI were compared between individuals who reported experiencing physical IPV and those who did not. Due to the unequal sample size between those who reported physical IPV and those who did not, the Satterthwaite method was used to determine the *t* value. Results from these analyses indicated that there was no significant difference in reported functions of NSSI between individuals who reported a history of physical intimate partner violence victimization and those who did not. Comparison effect sizes, in standard deviation units, observed in the present study ranged from .01 (small effect) for self-punishment to -.52 (medium effect) for autonomy (See Table 2).

Table 2

Comparison of NSSI Functions Among Those With and Without a History of Physical Intimate Partner Violence

NSSI Functions	No Physical IPV (<i>n</i> = 15)		Physical IPV (<i>n</i> = 34)		<i>df</i>	<i>t</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Affect regulation	3.40	2.03	3.60	2.01	26.68	.39	-.10
Interpersonal boundaries	1.13	1.92	1.15	1.42	21.01	.02	-.01
Self-punishment	2.73	2.31	2.71	2.08	24.47	.04	.01
Self-care	1.20	1.86	0.82	1.03	17.90	.74	.25
Antidissociation /feeling-generation	.93	1.22	1.53	1.73	37.25	1.38	-.40
Anti-suicide	1.27	1.94	1.62	1.79	24.98	.60	-.19
Sensation-seeking	1.13	1.68	1.12	1.51	24.42	.03	.01
Peer-bonding	.93	1.94	.47	1.11	18.14	.86	.29
Interpersonal influence	1.07	2.09	1.50	1.58	21.41	.72	-.23
Toughness	1.53	1.81	1.35	1.79	26.63	.32	.10
Marking distress	1.60	1.84	2.09	1.85	26.92	.85	-.27
Revenge	.47	1.25	1.29	1.98	40.95	1.77	-.50
Autonomy	.60	1.18	1.26	1.33	30.06	1.74	-.52

Note. NSSI = nonsuicidal self-injury. IPV = intimate partner violence. *d* = Cohen's *d*.

**p* < .05

CHAPTER IV

DISCUSSION

Previous research suggests a high prevalence of NSSI (e.g., Buser & Hackney, 2012) and physical intimate partner violence (Perry & Fromuth, 2005) among college students. This is particularly important because of consequences posed by self-harming behavior, such as accidental death (Nafisi & Stanley, 2007). This study examined the relationship between nonsuicidal self-injury and physical intimate partner violence among a sample of college students. The rates of NSSI and physical IPV reported in the current study are similar to those seen throughout the literature. Almost one-fourth (24%) of the entire sample reported a history of NSSI within the last 12 months. Although this is generally consistent with the wide range of reported rates of NSSI among college studies across the literature (e.g., Bresin & Gordon, 2011; Buser & Hackney, 2012; Gollust et al., 2008), it is slightly less than rates found in other studies examining college students' self-harm specifically within the past 12 months (e.g., Buser & Hackney, 2012). For example, Buser and Hackney (2012) found that 58% of college students reported NSSI within the past 12 months. This discrepancy may be due to differences in the way that NSSI was measured among these studies. For example, Buser and Hackney (2012) measured NSSI using the Functional Assessment of Self-Mutilation (FASM). In contrast, the current study measured NSSI using the Inventory of Statements About Self-Harm (ISAS).

Over one-half (53%) of the entire sample reported having been a victim of physical IPV within the past 12 months. These rates exceed those reported in the literature (e.g., Perry & Fromuth, 2005). For example, among a mixed-sex sample of

college students, Perry and Fromuth (2005) reported a rate of physical IPV of 42% among male participants and 30% among female participants. It is important to note that the two acts of physical intimate partner violence that were most often endorsed were “How often has your partner pushed or shoved you” and “How often has your partner grabbed you suddenly or forcefully”. Due to the fact that intent was not clearly specified in the questions regarding physical IPV, it is possible that not all participants had a clear understanding of the definition of physical IPV. For example, some participants may have indicated “yes” to some of the physical IPV behaviors in instances that may have been better defined as “playing around”. The high prevalence of physical IPV highlights the need for future research concerning the development and treatment of these types of behaviors among college students. Further, high rates of physical IPV and nonsuicidal self-injury among college students raise questions concerning the relationship between these two variables.

Support was found for the hypothesis that predicted a significant relationship between nonsuicidal self-injury and physical IPV. Although no published study has examined the relationship between NSSI and IPV that is specifically physical in nature, the results of this analysis are consistent with other studies that have linked NSSI to IPV in general (e.g., Levesque et al., 2010). For example, Levesque et al. (2010) found a statistically significant relationship between NSSI and intimate partner violence among young adults. Although results from the analyses support the prediction of the first hypothesis concerning the relationship between physical IPV and NSSI, there is no support for the hypotheses concerning the relationship between functions of NSSI and history of physical IPV victimization.

Contrary to what the literature suggests, the hypotheses, concerning the functions of NSSI among those who reported a history of physical IPV and those who did not, were not supported. The results of these analyses suggest that reasons for self-harm are similar among those who reported a history of physical IPV and those who did not. It is possible that limited statistical power played a role in the lack of statistically significant findings in the current study. Specifically, the total sample of 310 participants was not used for the analyses examining the relationship between physical IPV and the functions of self-harm. The modest sample size ($N = 49$) used in the analyses comparing the functions of NSSI for those with and without a reported history of physical IPV victimization may have made it difficult to detect a difference in the statistical comparisons. Comparison effect sizes observed in the present study ranged from .01 to -.52.

Several limitations of this study are worth mentioning, specifically those concerning the sample characteristics and measures. The results of the study may not be entirely representative of all college students due to the use of a convenience sample recruited from a psychology research pool. The college students who participate in the psychology research pool may not be representative of college students as a whole. Further, although no sex differences were observed for physical IPV or NSSI, the majority of the sample was female (61%).

Limitations concerning the measures used in the study also should be taken into consideration. The time frame involved in the definitions of both NSSI and physical IPV may have excluded participants who would have otherwise reported a lifetime history of these behaviors. Specifically, nonsuicidal self-injury and physical intimate partner

violence victimization were only defined as such if the behavior had occurred within the past 12 months.

Another limitation regarding the measures used in the current study involved the use of participants' self-reports for some of the study variables. Specifically, measures used for both NSSI and physical IPV were based on participants' self-reports. This could pose a problem if the way in which the participants defined these behaviors differed from the way in which the researcher defined these behaviors. For example, there was a discrepancy between the way in which participants' defined their self-harm behaviors and the way in which the researcher in the current study defined self-harm. Specifically, only 49 out of the 75 participants who reported engaging in one of the 12 self-harm behaviors within the past 12 months actually defined their behavior as self-harm. This may be important when considering the measure of physical IPV as well. The measure of physical IPV used in the current study did not specify a requirement of intent for the listed physical IPV behaviors. This may have lead to a discrepancy in the way in which the definition of physical IPV was interpreted between the researcher and the participants.

Despite its limitations, the results of this study may have important implications for understanding the development and prevention of self-harming behavior. It likely would be beneficial to further explore the relationship between NSSI and physical intimate partner violence. The significant relationship between these two variables may be particularly important for NSSI prevention. For example, it may be beneficial to discuss the possible consequences of self-harm with individuals seeking help for physical intimate partner violence victimization. Future research would benefit from a larger

sample size that is more evenly distributed with regard to sex, as well as more clearly defined study variables.

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APPENDICES

APPENDIX A

Middle Tennessee State University Institutional Review Board Approval Letter

January 27, 2013



Megan Williams, Dr. Mary Ellen Fromuth
Department of Psychology
Mrw4r@mtmail.mtsu.edu, MaryEllen.Fromuth@mtsu.edu

Protocol Title: "Functions of nonsuicidal self-injury: Comparing those with and without a history of physical intimate partner violence."

Protocol Number: 13-188

Dear Investigator(s),

The exemption is pursuant to 45 CFR 46.101(b) (4). This is because the research being conducted involves the use of an existing data set whereas the original data collected contains no personal identifiable information.

You will need to submit an end-of-project report to the Compliance Office upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the three (3) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your study expires on **January 27, 2016**.

Any change to the protocol must be submitted to the IRB before implementing this change.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project. Once your research is completed, please send us a copy of the final report questionnaire to the Office of Compliance.** This form can be located at www.mtsu.edu/irb on the forms page.

Also, all research materials must be retained by the PI or **faculty advisor (if the PI is a student)** for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Andrew W. Jones

Compliance Office
615-494-8918
Compliance@mtsu.edu

APPENDIX B**Middle Tennessee State University Institutional Review Board Informed Consent****Document for Research Form**

MTSU
IRB Approved
Date: 10/21/2011

Principal Investigator: Megan R. Williams, Katy W. Owen and Angel J. Simmons
Study Title: Relationships among intimate partner violence, personality traits, and self-harm

Institution: Middle Tennessee State University

Name of participant: _____

Age: _____

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact Emily Born at the Office of Compliance at (615) 494-8918.

1. Purpose of the study:

You are being asked to participate in a research study because little is known about how intimate partner violence is related to self harm.

2. Description of procedures to be followed and approximate duration of the study:

You will be asked to fill out an anonymous survey. The survey asks about various personality traits, experiences with self-harm, and experiences with

intimate partner violence (both physical and emotional). The study is expected to take approximately 45 minutes.

3. Expected costs:

There is no cost to you.

4. Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

Some participants who experienced self-harm and/or intimate partner violence may experience some discomfort. This survey may bring back uncomfortable memories.

5. Unforeseeable risks:

None

6. Compensation in case of study-related injury:

MTSU will not provide compensation in the case of study related injury.

7. Anticipated benefits from this study:

- a) The potential benefits to science and humankind that may result from this study are increased knowledge about self-harm and intimate partner violence.
- b) The potential benefits to you from this study are learning more about the research process and the type of research which psychologists perform.

8. Alternative treatments available:

Not applicable.

9. Compensation for participation:

You will receive two research credits for your participation.

10. Circumstances under which the Principal Investigator may withdraw you from study participation:

Not applicable.

11. What happens if you choose to withdraw from study participation:

Although we hope that you will decide to participate, we want to stress that you are under no obligation to do so. You should feel free not to fill out the survey. In fact, if you decide at any point while filling out the survey that you no longer wish to participate, you may stop wherever you are. Although we hope you complete the entire survey, if there are any particular questions which you want to skip, you may do so. You will still receive credit for participating in the study. If you decide not to participate, you may do so very discreetly by just turning in your survey at the end of the period with everyone else.

12. Contact Information.

If you should have any questions about this research study or possibly injury, please feel free to contact Megan R. Williams at mrw4r@mtmail.mtsu.edu, Katy W. Owen at kdw2t@mtmail.mtsu.edu or Angel Simmons at ajsimmons07@aol.com, or our Faculty Advisor, Mary Ellen Fromuth at 898-2548.

13. Confidentiality.

All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law.

14. STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

I have read this informed consent document for this study and understand my rights as a research participant. Further, I understand that information I provide is only intended for research purposes and is not intended to establish a patient/psychologist relationship between me and the researchers/university or to be used for diagnostic purposes. A list of referral counseling services will be provided to me. Should I become distressed at any time while participating in this study and feel the need that I need psychiatric/medical or other emotional assistance, I will contact one of the referral counseling services.

 Date

 Signature of volunteer

Consent obtained by:

 Date

 Signature

 Printed Name and Title

APPENDIX C

Participant Debriefing Form

Please keep for your own use.

The purpose of this study is to explore the characteristics of nonsuicidal self-harm such as cutting. This study also examines factors that may be related to nonsuicidal self-harm, specifically intimate partner violence, attachment, and coping strategies. If you are experiencing any discomfort regarding these issues and would like to talk to someone about these feelings, professional counseling is available by contacting any of the following:

On campus: Counseling Services, ext. 2670

Off campus: The Guidance Center, (615) 895-6051 (fee-based)

If you would like more information about this study, or your rights as a participant, please feel free to contact Megan R. Williams (mrw4r@mtmail.mtsu.edu), Katy W. Owen (kdw2t@mtmail.mtsu.edu), Angel J. Simmons, or our advisor Mary Ellen Fromuth, PhD (mfromuth@mtsu.edu). Unfortunately, because of the length of the study, it will not be possible to immediately provide you with the results. Arrangements, however, can be made to provide you with the results when they become available.

Thank you for your time and patience in helping us with this project.

Megan R. Williams
Mrw4r@mtmail.mtsu.edu

Katy W. Owen
kdw2t@mtmail.mtsu.edu

Angel J. Simmons