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SUFFOLK UNIVERSITY

UNDERSTANDING NON-SUICIDAL SELF-INJURY

ON A CHILD INPATIENT UNIT:

A MIXED-METHODS STUDY

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCES

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

BY

KRISTEN L. BATEJAN

BOSTON, MASSACHUSETTS

SEPTEMBER 2015

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## ABSTRACT

Non-suicidal self-injury (NSSI) is the direct, deliberate destruction of body tissue without suicidal intent (Nock & Favazza, 2009). Age of onset, based primarily on retrospective reports, commonly occurs between twelve and fourteen years old (e.g., Jacobson & Gould, 2007). Recent efforts have examined NSSI among children directly (Barrocas et al., 2012; Esposito-Smythers et al., 2010).

The current study, a mixed-methods approach, examined NSSI among a sample of children treated on a psychiatric inpatient unit. Archival chart reviews assessed current/lifetime NSSI behaviors, demographic data, current/lifetime suicidal ideation and attempts, and self-reported clinical rating scales. Semi-structured interviews with self-injuring children assessed phenomenology (e.g., age of onset, discovery of NSSI, emotions/thoughts, triggers) and the functions of NSSI.

NSSI was highly prevalent in this sample; 63.9% ( $n = 78$ ; 47 boys, 31 girls) of inpatient children, age nine to twelve years old, had past or current NSSI documented in their medical charts. NSSI+ participants were found to report significantly higher depressive scores and significantly higher anger scores compared to NSSI- participants ( $ps < .05$ ). Similarly, among the interviewed children ( $n = 7$ ), they reported mostly internal (e.g., affect regulation) reasons for engaging in NSSI as well as bullying and family stressors triggering their NSSI behaviors.

These findings indicate that NSSI is evident among psychiatrically impaired children as young as nine years old. In addition, depression and anger may play a role in the onset or maintenance of NSSI behavior among youth. Findings show many similarities between children and adolescents engaging in NSSI. Recognizing that NSSI may occur much earlier than previously thought and understanding how psychiatric



distress (i.e., depression, anger) contributes to NSSI will inform better prevention and intervention treatments targeting NSSI. This study highlights that children are engaging in NSSI at much younger ages than previously thought, and are just as psychiatrically impaired as adolescents.

## CHAPTER ONE

### **Introduction**

Non-suicidal self-injury (NSSI) refers to the direct, deliberate destruction of one's own body tissue without any suicidal intent (Nock, 2010; Nock & Favazza, 2009).

Research has demonstrated clear differences between suicidal behaviors and NSSI in intent and the functions of the behaviors (e.g., Jacobson & Gould, 2007; Nock & Favazza, 2009). Few research studies have directly examined NSSI behaviors among children (except in children with autism spectrum disorders and other developmental disorders; see Minshawi et al., 2014; Richman, 2008), yet through retrospective reports from adolescents and adults, in both community and clinical settings, these behaviors are exigent during childhood. The typical reported age of onset for NSSI occurs between twelve and fourteen years old (Ferrara, Terrinoni, & Williams, 2012; Glenn & Klonsky, 2009; Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Swannell, Martin, Scott, Gibbons, & Gifford, 2008). In one study, adolescents reported the average age of onset to be 11.56 years, with the lowest age of starting NSSI to be three years old (Claes, Luyckx, & Bittebier, 2014). Another study documented reports of NSSI-onset as early as five years old (Muehlenkamp & Gutierrez, 2004).

The prior literature's reliance on retrospective reports from adolescents and adults hinders the understanding of childhood NSSI. It is imperative to study this behavior among children directly to understand the phenomenon as well as to determine factors that contribute to children's engagement in NSSI.

### **Prevalence**

From what is known in the current literature, NSSI occurs predominantly during adolescence and young adulthood, and is typically less prevalent among older adults

(Jacobson & Gould, 2007). While data suggest the study of NSSI has increased in the past few years (Washburn et al., 2012), it does appear in the last ten years that NSSI prevalence has remained consistent and stable among adolescent community populations (Muehlenkamp, Claes, Havertape, & Plener, 2012). NSSI behaviors are less frequent among general/community populations compared to clinical populations. Briere and Gil (1998) found that in a general sample of 927 adults, approximately 4% had endorsed lifetime NSSI, whereas observed rates of NSSI have been as high as 90% in an inpatient sample of adults diagnosed with borderline personality disorder (BPD; Zanarini et al., 2006). Among community-based adolescent samples, in the United States and internationally, observed lifetime NSSI prevalence ranges from 2.5% to 28% (Bakken & Gunter, 2012; Brausch & Gutierrez, 2010; Claes et al., 2014; Garrison et al., 1993; Giletta, Scholt, Engels, Ciairano, & Prinstein, 2012; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008; Klonsky, May, & Glenn, 2013; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Sornberger, Heath, Toste, & McLouth, 2012; Zoroglu et al., 2003) and can be as high as 46.5% when mild forms of self-injury are included (e.g., picked at wounds, pulled hair out; Lloyd-Richardson et al., 2007). In a Swedish adolescent community sample, 40% endorsed at least one episode of NSSI in the past six months (Bjarehed, Wangby-Lundh, & Lundh, 2012). Adolescent inpatient samples yield even higher percentages of lifetime NSSI, with observed prevalence estimates ranging from 13% to 82.4% (Boxer, 2010; DiClemente, Ponton, & Hartley, 1991; Jacobson, Muehlenkamp, Miller, & Turner, 2008; Nock & Prinstein, 2004; Rizzo et al., 2014; Wolff et al., 2013).

The considerable variability in prevalence estimates could be due, in part, to inconsistencies in the operationalization of NSSI behavior (e.g., wrist cutting vs. hair-pulling), methodological factors (e.g., single-item measures vs. more in-depth assessments), as well as underreporting of sensitive (and secretive) information (Nock & Banaji, 2007). Despite these limitations, it is clear that NSSI is a significant concern during adolescence, particularly among clinically impaired adolescent populations. Recent efforts have undertaken the task of determining prevalence rates of NSSI in preadolescent populations (Barrocas, Hankin, Young, & Abela, 2012; Esposito-Smythers et al., 2010; Preyde et al., 2012). Esposito-Smythers et al. (2010) examined NSSI in an inpatient sample of children and adolescents with a diagnosis of Bipolar Disorder. Similar rates of lifetime engagement of NSSI were found between children and adolescents, with approximately 34% of children reporting lifetime NSSI. Barrocas et al. (2012) examined NSSI in a community sample of school children and found 7.6% of third graders and 4% of sixth graders endorsed engaging in NSSI. Preyde et al. (2012) found that 36% of six to twelve year olds admitted to either intensive home-based services or residential treatment services had documented histories of self-harm. Of note, this study used a combination of non-suicidal self-injurious and suicidal behaviors; therefore, it is not possible to determine exact prevalence rates of NSSI alone in this age group. Thus, while NSSI remains a concern among adolescent populations, the behavior is recently recognized as occurring in younger children in both community and clinical settings.

The limited available evidence suggests that some children are actively engaging in NSSI behaviors; efforts focusing on accurately acquiring prevalence rates will allow

for a greater understanding of the behaviors as well as the correlates of NSSI. Such information may inform the development of prevention and intervention efforts targeting childhood NSSI. Toward this end, the current study will examine prevalence rates of NSSI in a New England child inpatient unit. These results will not necessarily be generalizable to other populations as this is a specific targeted sample. However, this initial research will inform future efforts examining NSSI among child populations in larger, more generalizable populations.

### **Demographic Factors**

**Age of onset.** The average age of onset of NSSI retrospectively reported by both community and clinical samples is typically between twelve and fourteen years old (Glenn & Klonsky, 2009; Jacobson & Gould, 2007; Kim et al., 2015; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Swannell et al., 2008). However, there have been reports of NSSI onset in children younger than twelve years old. One community sample study of adolescents reported the average of onset to be 11.56 years, with a range of three to sixteen years old (Claes et al., 2014). In another adolescent community sample, almost 25% reported starting NSSI in grade six or younger (Ross & Heath, 2002), while a different community sample of girls reported an average age of NSSI onset of 10.2 (Hilt, Cha, & Nolen-Hoeksema, 2008). Muehlenkamp and Gutierrez (2004) found accounts of NSSI onset as young as five years old among an adolescent community sample. In another instance, in a college population, Whitlock, Eckenrode, and Silverman (2006) found 5.1% of the sample of self-injuring college students reported starting NSSI before age ten, and about 25% reported starting between the ages of ten and fourteen. In an Australian epidemiological study, 2.4% of ten to seventeen year olds were found to have self-injured in the four weeks prior to the survey, 5.4% in the prior twelve months,

and 9.4% over their lifetime (Martin, Swannell, Harrison, Hazell, & Taylor, 2010). With these findings, however, it is difficult to ascertain the prevalence among the age group that spans from preadolescence to adolescence.

Similar findings have been observed in inpatient samples as well. Zanarini and colleagues (2006) found that 32.8% of adult inpatients with a history of NSSI reported starting NSSI at age twelve or younger. In another adult NSSI sample, Briere and Gil (1998) found the median age of onset across all methods of NSSI was seven years old, compared to fourteen years old for severe self-mutilation (e.g., cutting, burning). One adult sample showed that those engaging in NSSI before the age of twelve were more likely to have a later diagnosis of BPD (Herpertz, 1995).

There are, however, flaws in retrospectively studying the age of onset of NSSI in adult and adolescent populations, since individuals are subject to recall bias and their retrospective reports may be inaccurate. Recent efforts have begun to examine self-harming behavior among children directly. Sarkar and colleagues (2010) assessed self-harm among children (<12) and adolescents (>12) presenting in the emergency room (ER) over a six-year period. These researchers used the term ‘suicidal phenomena,’ which did not distinguish intent; therefore, suicidal and non-suicidal self-injuring children and adolescents were combined and analyzed as a single group. Of all those presenting to the ER for ‘suicidal phenomena,’ approximately 21% were children under the age of twelve. As mentioned earlier, NSSI was examined in an inpatient sample of children and adolescents diagnosed with Bipolar Disorder (Esposito-Smythers, et al., 2010). This study found that children who endorsed NSSI (34%) were at increased risk to meet criteria for having a diagnosis of Bipolar I or II, and to experience severe depressive

and manic symptoms, psychosis, comorbid separation anxiety disorder, and worse psychosocial functioning.

**Racial and ethnicity factors.** There have been a number of inconsistencies in examining racial and ethnic group differences in the prevalence of NSSI. Many studies, with both clinical and community samples, have found no significant racial/ethnic differences in the occurrence of NSSI (Hilt, Cha et al., 2008; Hilt, Nock et al., 2008; Jacobson et al., 2008). However, there have been some published studies suggesting that NSSI is a predominantly White phenomenon. Whitlock and colleagues (2006) found that Asian/Asian American college students reported significantly fewer repeat self-injurious episodes (adjusted OR: 0.7; 95% CI: 0.4-1.0) compared to White college students. Additionally, White adolescents were more likely to self-injure than adolescents identifying as African-American, Hispanic, and other ethnic identities (Muehlenkamp & Gutierrez, 2004; 2007). Similarly, in another study, White adolescents were more likely to engage in moderate to severe NSSI [ $\chi^2 (2, n = 600) = 12.16, p < 0.01$ ] compared to African American adolescents who were more likely to engage in minor NSSI (Lloyd-Richardson et al., 2007).

**Sex factors.** In addition to NSSI prevalence inconsistencies evident in racial and ethnic groups, there are inconsistencies in the literature regarding sex differences (Jacobson & Gould, 2007). Findings from a community sample of high school students showed that girls were more likely to endorse self-injury ideation, self-harm, and a higher frequency of self-injury incidents compared to boys (Laye-Gindhu & Schonert-Reichl, 2005). Results from other community samples have found that girls are significantly more likely to self-injure compared to boys (Bakken & Gunter, 2012; Bjarehed et al.,

2012; Ross & Heath, 2002; You, Lin, Fu, & Leung, 2013). Similar sex differences (i.e., greater NSSI among girls compared to boys) have been found in adolescents treated in pediatric emergency crisis services (Cloutier, Martin, Kennedy, Nixon, & Muehlenkamp, 2010), partial hospitalization programs (Nixon, Cloutier, & Aggarwal, 2002), an inpatient facility (Boxer, 2010), and in a sample of adolescent outpatients (Jacobson et al., 2008).

However, sex differences in NSSI engagement were not found in other studies of adolescent community samples (Garrison et al., 1993; Hilt, Nock et al., 2008; Muehlenkamp & Gutierrez, 2004, 2007; Tatnell, Kelada, Hasking, & Martin, 2014; Zoroglu et al., 2003), an adolescent inpatient sample (Nixon et al., 2002), and a child inpatient sample (Esposito-Smythers et al., 2010). Likewise, Briere and Gil (1998) found no sex differences in rates of self-injury in an adult community sample or in a clinical sample of self-injurers.

### **Psychiatric Correlates**

There is evidence to suggest that a history of trauma, specifically child maltreatment, increases the risk for NSSI (Jacobson & Gould, 2007; Kaess et al., 2013; Yates, 2009). Trauma (e.g., childhood sexual abuse, physical abuse, emotional abuse) has been suggested to increase the risk for future NSSI in both adult (Whitlock et al., 2006) and adolescent community samples (Zoroglu et al., 2003). Rates of NSSI in adult (Briere & Gil, 1998; van der Kolk, Perry, & Herman, 1991) and adolescent (Darche, 1990; DiClemente et al., 1991; Green, 1978; Nixon et al., 2002) clinical samples with histories of trauma tend to be higher. A meta-analysis showed that the type of sample was a significant moderator of the relation between childhood sexual abuse and NSSI, showing that clinical samples had stronger relations than community samples (Klonsky & Moyer, 2008). However, this meta-analysis, overall, showed that childhood sexual abuse has a



relatively small role in the development of NSSI (Klonsky & Moyer, 2008). Certainly not all those who engage in NSSI have a history of trauma (e.g., child maltreatment); yet, it does appear that having a history of trauma may be a risk factor for later engagement of NSSI.

A smaller body of research has examined relations between posttraumatic stress symptoms and NSSI engagement. In one study of a community-sample of adolescents, specific symptoms of posttraumatic stress disorder (PTSD), such as re-experiencing and numbing, accounted for the association between childhood sexual abuse and NSSI (Weierich & Nock, 2008). Similarly, posttraumatic symptoms were shown to add a unique and substantial risk for NSSI in a sample of maltreated girls (Shenk, Noll, & Cassarly, 2010). In addition, among a clinical sample of self-harmers, Jacobson and colleagues (2008) found that adolescents with a history of both attempted suicide and NSSI were more likely to have a diagnosis of PTSD compared to adolescents who had only engaged in NSSI.

Depression and anxiety have also been associated with NSSI (Jacobson & Gould, 2007). Studies have found that high school students who engage in NSSI were more likely to report depressive (Bakken & Gunter, 2012; Muehlenkamp & Gutierrez, 2007; Ross & Heath, 2002) and anxious symptoms (Ross & Heath, 2002). In one study of high school students, a history of NSSI was found to be associated with higher levels of depressive symptoms (Giletta et al. 2012). Similarly, in a sample of eleven to fourteen year old children participating in a longitudinal study, depressive symptoms differentiated non-suicidal self-injuring youth from non-self-injuring youth; depressive symptoms also increased risk for future engagement of NSSI (Hankin & Abela, 2011).

One study of an inpatient sample comparing adolescents who cut from those who did not, found that the adolescent self-injurers had more depressive symptoms (Swenson, Spirito, Dyl, Kittler, & Hunt, 2008).

Similar to the associations with depression and anxiety, anger has also associated with NSSI (Jacobson & Gould, 2007). An examination of anger and NSSI in a community sample of Chinese youth, ranging from age ten to eighteen, found that self-reported NSSI was associated with multiple forms of aggression, including physical, verbal, and indirect aggression, anger, and hostility in both boys and girls (Tang et al., 2013). Laye-Gindhu and Schonert-Reichl (2005) found that adolescents who self-injured were more likely to have emotional distress, negative self-esteem, and anger (including anger control and anger discomfort problems; see also Nock, Prinstein, & Sterba, 2009). Another study, of an adolescent inpatient sample, found that boys with a history of NSSI were positively correlated with trait physical aggression, while girls with a history of NSSI were positive correlated with anger, hostility, and verbal aggression (Rizzo et al., 2014).

### **NSSI and Suicidality**

There are many complexities inherent in the relation between NSSI and suicide. It is unclear whether self-injury is a risk factor for later completed suicide, but there is research that supports the relation between self-injurious behaviors and suicidal ideation, as well as attempted suicide (Andover, Morris, Wren, & Bruzzese, 2012; Jacobson & Gould, 2007). For example, self-injurers were significantly more likely than non-self-injurers to report suicidal ideation, a suicide plan, and a suicide attempt in an adolescent community sample (Laye-Gindhu & Schonert-Reichl, 2005). Findings from another community sample of adolescents showed that moderate self-injurers (endorsing more

serious methods of harm) were more likely to report a history of past suicide attempts and to have a higher score on a suicidal ideation questionnaire, compared to minor self-injurers (endorsing minor methods of harm; Lloyd-Richardson et al., 2007). Adolescent self-injurers in one sample were fifteen times more likely to report suicidal ideation and almost nine times more likely to have attempted suicide in the past year (Garrison et al., 1993). In the 2004 and 2007 studies by Muehlenkamp and Gutierrez, adolescents with combined self-injurious and suicidal behaviors were found to report greater suicidal ideation, fewer reasons for living, greater repulsion by life, attraction to death, and a lower attraction to life compared to adolescents with an absence of NSSI and suicidal behaviors. Engaging in NSSI at higher rates was found to be associated with an increased risk of both suicidal ideation and suicide attempts in community-based sample of adolescents (Guan, Fox, & Prinstein, 2012). While there is no definitive cause and effect for NSSI and suicidal behaviors, the high rates of suicidal ideation and attempts among self-injurers is concerning and may be clinically meaningful.

There have been a few studies that have examined the co-occurrence of self-injury and suicide attempts in inpatient and emergency service settings. Cloutier and colleagues (2010) found that a combined self-injury/suicide attempt group were more likely to be involved with child and family services, receiving therapy, and to eventually be admitted to an inpatient unit after an emergency service visit. In a sample of adolescent self-injurers admitted to an inpatient hospital, approximately 64% reported daily suicidal ideation and 74% reported a suicide attempt in the past six months (Nixon et al., 2002). As many as 70% of self-injuring, inpatient adolescents had a history of a suicide attempt; 15% had one attempt, while 55% reported two or more lifetime attempts (Nock, Joiner,

Gordon, Lloyd-Richardson, & Prinstein, 2006). Another adolescent inpatient sample showed that those with a history of NSSI had higher levels of suicidal ideation compared to those without a history of NSSI (Swenson et al., 2008). Jacobson and colleagues (2008) found that 17% of their inpatient sample had a history of both NSSI and a suicide attempt, while Wolff et al., (2013) found 42.7% of an inpatient adolescent sample to have a combined history of NSSI and suicide attempts.

### **Functions of NSSI**

There have been numerous models and theories examining the reasons and functions of NSSI (Jacobson & Batejan, 2014; Klonsky, 2007; Nock & Cha, 2009; Suyemoto, 1998). Psychoanalytic models have considered sexual impulses, object relations, and anti-suicide (i.e., NSSI used to protect individual against suicide) as explanations for NSSI (Jacobson & Batejan, 2014; Suyemoto, 1998). Interpersonal models, such as the boundaries model (i.e., using NSSI to create a distinction between self and other) or social learning theory, have explained NSSI as a form of communication to others or a cry for help (Jacobson & Batejan, 2014). Affect regulation models have found that individuals using NSSI may be emotionally dysregulated, and engaging in the behavior helps them return to baseline (Jacobson & Batejan, 2014).

Some of these models and theories, however, are lacking empirical evidence. More recently, incorporating components of these different models and theories has resulted in the examination of the psychosocial characteristics of NSSI via a four-function model of NSSI that assumes antecedents and consequences affect subsequent NSSI (Nock, 2009; Nock & Cha, 2009; Nock & Prinstein, 2004, 2005). This model is divided into positive reinforcement (i.e., achieving a favorable reward) and negative reinforcement (i.e., removing an aversive stimulus) by automatic and social reasons.

Automatic reasons for NSSI are the intrapersonal or internal factors for engaging in the behavior. Therefore, when an individual engages in NSSI for automatic positive reinforcement (APR), NSSI is used to generate feeling. Individuals who endorse APR functions describe NSSI as inducing a desirable or pleasurable state (e.g., “to feel something, even if it is pain”). Automatic negative reinforcement (ANR) occurs when the individual self-injures to remove or escape from an aversive state, either related to affect or cognition. Typically, individuals who endorse ANR reasons believe that the “bad” state they are in (e.g., anxious, angry) can be reduced after the act of self-injury. The self-injurious act would thereby be calming or soothing. For example, an individual with a history of trauma, experiencing numbness as a result of a flashback, may engage in NSSI to induce some type of sensation (e.g., pain) to eliminate the numbness (i.e., APR). On the other hand, this individual may feel depressed as a result of a reminder of their trauma, and then engage in NSSI to alleviate that feeling (i.e., ANR).

Social reasons for NSSI are the interpersonal factors for engaging in NSSI. When an individual engages in NSSI for social positive reinforcement (SPR), they may be doing so to access help or for attention. Individuals may engage in SPR functions of NSSI to elicit a reaction from others, even if the result is negative. The individual may try to express their emotions through physical acts (e.g., cuts or scars on their bodies) to show others how much they are suffering internally. Lastly, social negative reinforcement (SNR) functions as the removal of an interpersonal demand (e.g., chores or homework). Individuals who endorse SNR functions may self-injure to avoid something unpleasant or to avoid a punishment. This tends to be endorsed less frequently compared to the other functions (Jacobson & Gould, 2007).

Although clinical samples endorse more automatic (i.e., intrapersonal, internal) reasons for NSSI, community samples have shown equal rates for social and automatic reasons for NSSI (Jacobson & Gould, 2007). For example, in a community sample of adolescents who were given an unlimited option of reasons to engage in NSSI, 19–31% of self-injurers endorsed social reasons, while 22–28% endorsed automatic reasons (Lloyd-Richardson et al., 2007). Lloyd-Richardson and colleagues (2007) found that adolescents who engaged in minor NSSI (i.e., skin-picking) had the highest endorsement (28%) of an SNR reason (i.e., “to avoid school, work, or other activities”) compared to adolescents who engaged in moderate/severe NSSI (i.e., cutting), who had the highest rates (41.4%) of an APR reason (i.e., “to feel something, even if it was pain”). In another adolescent community sample, Ross and Heath (2002) found that almost 79% of their sample self-injured out of a combination of feelings related to anxiety and hostility. The next most common reasons endorsed were “to get out my frustrations” and “to reduce the emotional pain.” In Laye-Gindhu and Schonert-Reichl’s (2005) adolescent community sample, the authors found that most self-injurers endorsed depression, feeling alone, and distraction as reasons for engaging in NSSI. The reason, “I felt very unhappy or depressed,” was endorsed by 80% of the sample. In this study, sex differences were examined; boys’ most endorsed reason (62%) was “I wanted to be noticed” whereas 88% of girls’ endorsed feeling depressed. When the authors examined participant-generated reasons for alternative functions for NSSI, motivations of a communicative nature emerged (i.e., a desire to express pain).

Generally, automatic reinforcement, specifically ANR, is endorsed more often than social reinforcement among clinical samples of adolescent self-injurers. In one

adolescent inpatient sample, 52.9% of self-injurers endorsed “to stop bad feelings” as the primary reason for engaging in NSSI (Nock & Prinstein, 2004). This was followed by “to punish yourself” (31.8%) and “to relieve feeling numb or empty” (30.6%). Social reasons were less commonly endorsed; only 6% to 24% of self-injurers endorsed SNR and SPR as functions for their NSSI. Similarly, high rates (83.3%) of “cop[ing] with feelings of depression” were evident in a comparable adolescent inpatient sample, followed closely by “releas[ing] unbearable tension” in almost 74% of the sample (Nixon et al., 2002). In another adolescent inpatient sample, Kim et al., (2015) found reasons for NSSI to be: escape bad feelings or to feel something (97.8%), problems with peers/relationships/school (68.9%), problems with family members (53.3%); to get out of doing something or to get away from others (6.7%), and to get attention (4.4%). Similar to other studies, APR and ANR reasons were endorsed at higher rates than SPR and SNR reasons.

Kumar, Pepe, and Steer (2004) examined a subset of adolescent inpatients that only cut, and found that these adolescents primarily endorsed affect modulation reasons. This factor is comparable to the four-function model of automatic negative reinforcement (Nock & Prinstein, 2004, 2005). In another adolescent inpatient sample, 92% of self-injurers endorsed the reason “to distract from emotional pain by experiencing physical pain,” followed by 87% endorsing “to decrease an empty feeling,” and 84% endorsing “punish myself for being bad” (Swannell et al., 2008). The first two reasons endorsed are similar to automatic positive and negative reinforcement (Nock & Prinstein, 2004; 2005) as they involve regulating emotional states.

While automatic reasons are typically endorsed more frequently, there remains a clear social component among inpatient adolescents. For example, 82.1% of adolescent inpatient self-injurers reported at least one of their friends engaging in NSSI in the past year (Nock & Prinstein, 2005). Also, another study observed that almost 27% of self-injurers reported sharing cutting implements with others (DiClemente et al., 1991). It is apparent that adolescents, in community and clinical settings, endorse both automatic and social reasons. To date, there is no known literature about children's reasons for engaging in NSSI. Nock and Prinstein (2005) found that older adolescents endorse engaging in NSSI primarily for automatic reasons, whereas younger adolescents endorsed more social reasons.

### **Mixed-Methods Approach**

Quantitative and qualitative approaches to research each add knowledge our understanding of the constructs in question. However, the combination of quantitative and qualitative research expands the breadth and depth of the topic, which, separately, the research could not achieve (Creswell, Klassen, Plano Clark, & Smith, 2011). For instance, self-injury in a neurotypical child population has yet to be studied thoroughly. While research has demonstrated the existence of NSSI behavior in childhood, the context of the behavior has yet to be thoroughly examined. Therefore, applying a mixed-methods approach to the study of NSSI in a child inpatient sample may shed light on the reasons/functions endorsed by children for engaging in the behavior, while also determining prevalence of the behavior as well as psychosocial correlates associated with NSSI.

The use of qualitative methods may contribute to a more thorough understanding of the “meanings, functions, goals and intentions” about NSSI in children (Yoshikawa,



Weisner, Kalil, & Way, 2008, p. 346). It cannot be assumed that children will engage in NSSI for the same reasons commonly endorsed by adolescents and adults. Using an already established measure assessing for NSSI reasons/functions, validated on adolescent and adult samples, may neglect key elements or themes that may emerge from gathering information in an open-ended manner about the child's reasons for engaging in NSSI. While the commonly endorsed reasons in older populations may be similar in children, it is imperative to get the child's perspectives on their engaging in NSSI. Integrating the quantitative data (e.g., demographics, psychiatric correlates) and the qualitative data (e.g., reasons/functions of NSSI, phenomenology of NSSI) will allow for a richer understanding of this understudied phenomenon.

Through qualitative interviews, children engaging in NSSI will be asked to voice why they have engaged in NSSI as well as explain the triggers, emotions, and surrounding phenomena of the behavior. Yoshikawa and colleagues (2008) note that an advantage of qualitative interviews can be the building of rapport with the participant. In the current study, children may be more likely to disclose personal information about NSSI if they believe they have rapport with the interviewer. The interviewer will be able to use empathy, as well as follow-up questions to allow the child to discuss his/her feelings and experiences about the behavior, which may have stigma attached to it in other settings. This experience will differ from self-report assessments or structured interviews, which are typically impersonal and do not allow for additional questions or support. Specifically, conventional content analysis will be used to analyze and code transcribed interviews. Conventional content analysis is typically used to describe an under-studied phenomenon (Hsieh & Shannon, 2005).

## **Current Study and Aims**

The current study will utilize a mixed-methods approach to understand NSSI among children in an inpatient setting. To date, this is the first study to examine NSSI among a clinical sample of children to determine prevalence, demographic factors, psychosocial risk factors, and phenomenological NSSI factors in understanding why children engage in NSSI. Therefore, a combination of quantitative and qualitative data will be collected and analyzed to create a clearer understanding of NSSI. The field has a substantial amount of knowledge about this behavior in adolescence and early adulthood. There appear to be similar risk factors among self-injuring adolescents and young adults, as well as similarly endorsed functions for their engagement in the behavior. However, children engaging in NSSI are a completely novel and understudied phenomenon, and it cannot be assumed that their reasons or motives for self-injuring are the same as adolescents.

Quantitative data collection (i.e., Study I) will include examining the prevalence of NSSI among children, aged nine to twelve years old, receiving treatment in a New England child inpatient unit, as well as measures on anxiety, depression, anger, reactions to trauma, and suicide potential. An exploratory aim of the study is to examine differences between children engaging in NSSI and children not engaging in NSSI on these variables. Qualitative data collection (i.e., Study II) involves open-ended interviews with children with current/history of NSSI through chart review. Through these interviews, children will be given the opportunity to describe the functions for why they engage in NSSI, as well as provide details about the phenomenology of the behavior (e.g., frequency, methods, thoughts, feelings).

## CHAPTER TWO

### Study I

#### Aims

The current study examined the prevalence of NSSI among children, aged nine to twelve years old, receiving treatment in a New England child inpatient unit. Psychosocial correlates including anxiety, depression, anger, reactions to trauma, and suicide potential were examined between children with and without a history of NSSI. Additionally, phenomenological factors including the severity by number of methods and the severity by type of methods were examined among children who engage in NSSI.

#### Methods

**Participants.** Retrospective data were collected from the medical records of 179 child inpatients, aged nine to twelve, admitted to a psychiatric hospital in a New England city between 8/31/2012 and 9/1/2013. Patients were excluded from the study if they had a diagnosed psychotic disorder in their discharge paperwork ( $n = 5$ ), had a diagnosed developmental or intellectual disability in their discharge paperwork ( $n = 40$ ), or were missing self-report measures ( $n = 12$ ). The retained 122 participants with self-reported measures included 75 boys and 47 girls ( $M_{age} = 10.62$ ,  $SD = 1.13$ ). Participant's racial breakdown, as recorded in the clinical records, included 78 White participants (63.9%), 15 bi-racial participants (12.3%), 13 Black/African American participants (10.7%), three Asian participants (2.5%), and one participant described as "other" (.8%); 9.8% of participants ( $n = 12$ ) were missing data for race. Additionally, 17.2% of participants ( $n = 21$ ) were identified as Hispanic/Latino(a). However, 66.4% of participants ( $n = 81$ ) were missing data for ethnicity.

**Procedure.** Archival data were gathered from chart reviews examining current and lifetime NSSI behaviors, demographic data (i.e., age in years, sex, self-identified race/ethnicity), discharge psychiatric diagnoses, current and lifetime suicidal ideation and/or suicide attempts, and self-reported clinical rating scales (i.e., The Multidimensional Anxiety Scale for Children/The Multidimensional Anxiety Scale for Children-2, The Children's Depression Inventory-2, The Children's Inventory of Anger, The Child-Adolescent Suicidal Potential Index, and The Trauma Symptom Checklist for Children - Posttraumatic Stress). The current and lifetime NSSI behaviors, demographic data, and current and lifetime suicidality information were obtained from the physician and nurse admissions' notes. Multiple providers' admission notes were reviewed to ensure consistency of the data. The participants completed the self-reported clinical rating scales typically within a few days of admission. The treatment team was provided a document for each admitted child with the self-reported clinical rating scales' total scores, this was used to collect the data. When there were missing scores, the original self-reported clinical rating scales were referred to. The discharge psychiatric diagnoses were obtained from the physician's discharge note.

**Measures.** The following well-validated, widely used self-report measures were administered as part of the standard intake battery of the inpatient facility from which the current data was drawn. A master's level psychometrician administered the self-report measures within the first few days of the child's admission to the inpatient unit. The psychometrician read the instructions to the child and then would let the child complete the self-report measures independently. The psychometrician then scored the self-report measures and entered the resulting summary or total scores into the medical charts.

**Anxiety.** Thirty-two participants admitted to the inpatient facility prior to December of 2012 were administered the Multidimensional Anxiety Scale for Children (MASC; March, 1997) a 39-item self-report measure assessing physical symptoms (somatic/autonomic and tense/restless), social anxiety (humiliation/rejection and performing in public), harm avoidance (perfectionism and anxious coping), and separation/panic. Items are rated on a 4-point scale ranging from 0 for “never true about me,” to 3 “often true about me.” The MASC is well validated in both clinical and community samples (March, Sullivan, & Parker, 1999). Internal consistencies for the subscale scores and total MASC score are acceptable to good ( $\alpha$ s = .74 – .85; March, 1997). For example, the observed internal consistency for the MASC total score was excellent ( $\alpha$  = .94) in a psychiatric inpatient service ( $M_{age}$  = 15.46-years-old, with a range of twelve to seventeen years old; Osman et al., 2009). Adequate internal consistency ( $\alpha$  = .88) and test-retest reliability (.87) in younger school-aged children were found ( $M_{age}$  = 13.98-years-old, where 33% fell in the eight to twelve year old age range; March et al., 1999). In addition, internal consistency for the original MASC was excellent ( $\alpha$  = .92) in a previous study of children treated at the facility that served as the data collection site for the present research (Bodzy, Barreto, Swenson, Liguori, & Costea, 2015).

The remaining 99 participants (i.e., those admitted between December 2012–September 2013) were administered the Multidimensional Anxiety Scale for Children 2 (MASC-2; March, 2012), a 50-item self-report measure assessing physical symptoms (panic and tense/restless), social anxiety (humiliation/rejection and performance fears), harm avoidance, and separation anxiety/phobias, and obsessions and compulsions. Items are rated on a 4-point scale ranging from 0 for “never true about me,” to 3 “often true

about me.” The MASC-2 is a relatively newer, updated measure of the MASC (March, 1997) and has not been as thoroughly researched regarding its validity. Total scores for the MASC and for the MASC-2 were separately transformed into z scores, resulting in a single index for all participants representing anxiety.

***Depression.*** The Children’s Depression Inventory-2 (CDI-2; Kovacs, 2011) is a 28-item self-report measure of negative mood, anhedonia, interpersonal problems, ineffectiveness, and negative self-esteem. Items are rated on a 3-point scale ranging from 0 to 2. Items are summed to produce a total score, which was transformed to t-scores to indicate severity (Kovacs, 2011). The CDI-2 is a relatively newer, updated measure of the CDI (Kovacs, 1992) and has not been as thoroughly researched regarding its validity.

The original CDI has demonstrated concurrent validity in distinguishing a community and clinical child samples’ total scores (Saylor, Finch, Spirito, & Bennett, 1984). Overall, the original CDI has shown to have excellent internal consistency ( $\alpha = .94$ ) in a community sample of children ( $M_{age} = 11$  years, 7 months), and good internal consistency ( $\alpha = .80$ ) for children ( $M_{age} = 12$  years, 4 months) presenting for mental health evaluation to determine necessity for admission to an inpatient hospital (Saylor et al., 1984). In addition, internal consistency for the original CDI was good ( $\alpha = .86$ ) in a community sample of adolescent self-injurers (Hilt, Cha et al., 2008), among a population of children ( $M_{age} = 9.66$ -years-old) treated in an acute child psychiatric inpatient service ( $\alpha = .85$ ; Fite, Stoppelbein, Greening, & Preddy, 2011), and in a previous study of children treated at the facility that served as the data collection site for the present research ( $\alpha = .85$ ; Bodzy et al., 2015).

**Anger.** The Children's Inventory of Anger (ChIA; Nelson & Finch, 2000) is a 39-item, self-report measure of frustration, physiological, peer, and authority. Items are rated on a 4-point scale ranging from 1 "I don't care. That situation doesn't even bother me. I don't know why that would make anyone angry or mad," to 4 "I can't stand that! I'm furious! I feel like hurting or killing that person, or destroying that thing!" Items are summed to produce a total score, which was transformed to *t*-scores to indicate severity (Nelson & Finch, 2000). In a large community sample of six to sixteen year olds internal consistency was excellent ( $\alpha = .95$ ) for the total scale, good ( $\alpha = .85 - .86$ ) for each of the subscales and demonstrates convergent validity with similar clinical measures (e.g., Aggression Questionnaire; Nelson & Finch, 2000). Internal consistency was excellent ( $\alpha = .94$ ) in a previous study of children treated at the facility that served as the data collection site for this research (Bodzy et al., 2015).

**Suicidality.** The Child-Adolescent Suicidal Potential Index (CASPI; Pfeffer, Jiang, & Kakuma, 2000) is a 30-item self-report measure of anxious-impulsive depression, suicidal ideation/acts, and family distress. Items are forced-choice responses of yes (1) or no (0). Items are summed to create a total score. In a mixed psychiatric and community sample of children and adolescents ( $M_{age} = 11.88$ -years-old; Pfeffer et al., 2000), the CASPI had excellent internal consistency ( $\alpha = .90$ ), acceptable test-retest reliability (.76), and convergent validity with other, similar clinical measures (e.g., CDI and the Hopelessness Scale). In another psychiatric outpatient sample of children and adolescents, the CASPI had good internal consistency ( $\alpha = .89$ ; Roxborough et al., 2012). Internal consistency was good ( $\alpha = .85$ ) in a previous study of children treated at the facility that served as the data collection site for the present research (Bodzy et al., 2015).

***Trauma.*** The Trauma Symptom Checklist for Children - Posttraumatic Stress (PTS) subscale (TSCC-PTS; Briere, 1996) is a 10-item self-report measure of posttraumatic symptoms. Items are rated on a 4-point scale ranging from 0 “it never happens,” to 3 “it happens almost all of the time.” Items are summed to produce a total score, which was transformed to *t*-scores to indicate severity (Briere, 1996). This measure is shown to have adequate internal consistency (subscale  $\alpha$ s = .82 – .89; Briere, 1996), as well as construct and convergent validity. Internal consistency for each of the subscales ranged  $\alpha$ s = .66 to .87 in a previous study of children treated at the facility that served as the data collection site for the present research (Bodzy et al., 2015).

***Non-suicidal self-injury.*** NSSI behaviors were extracted from the medical charts based on emergency room admission assessments, nurse intake assessments on the inpatient unit, and/or inpatient psychiatrist clinical assessments. Behaviors were included, verbatim, under the NSSI heading in each of these assessments. Participants were divided into two groups: participants with a history of non-suicidal self-injury (NSSI+) and participants without a history of non-suicidal self-injury (NSSI-). Additionally, NSSI+ participants were further divided into groups based on the number of methods of self-injury used and the severity of the types of methods used. NSSI+ groups by method were split into participants who engaged in only one method and participants who engaged in 2+ methods. Severity of the type of NSSI was assessed using Lloyd-Richardson et al.’s (2007) dichotomous conceptualization between minor forms of NSSI and moderate/severe forms of NSSI.



## Results

**Preliminary analyses.** All study variables were examined for accuracy of data entry, missing values, and violations of assumptions (Tabachnik & Fidell, 2007). Accuracy of the data was examined by perusing frequency tables, histograms, and normal probability plots to identify outliers and missing values. No outliers were identified. Regarding missing data, a total of 115 (94.3%) participants completed all of the measures (i.e., CDI, MASC, TSCC, CASPI, ChIA). Two participants did not have complete data for the CDI (i.e., total scores were not available in the clinical records), seven participants were missing CASPI total scores, and three participants were missing ChIA total scores.

The assumptions of normality and linearity were examined via visual analysis of data and calculation of skewness and kurtosis. Two self-report indices were moderately skewed and one was moderately kurtotic (i.e., MASC skewness = .65 [ $SE = .22$ ]; TSCC-PTS skewness = .57 [ $SE = .22$ ]; CDI kurtosis = -1.06 [ $SE = .44$ ]; all remaining skewness scores = .03 – .26; all remaining kurtosis scores = -.84 – -.06). Analyses were conducted with and without log transformations. Results across the two sets of analyses were identical; therefore, only the analyses with the original (i.e., untransformed) variables are presented below. Table 1 includes the bivariate correlations between the CDI, MASC, ChIA, TSCC-PTS, and CASPI total scores, which ranged from .33 (ChIA, CDI) to .67 (CASPI, CDI). The magnitude of these effects suggests that multicollinearity is not a concern within the current sample.

**Descriptive characteristics.** NSSI was highly prevalent in this sample; 63.9% ( $n = 78$ ) of inpatient children had a documented past or current NSSI behavior in their medical charts. NSSI- participants ( $n = 44$ ) and NSSI+ participants did not significantly

differ in age ( $M_{age} = 10.59$  vs.  $M_{age} = 10.64$ ,  $t = -.23$ ,  $p = .82$ ), race (61.5% vs. 76.1% White,  $\chi^2 = .1.92$ ,  $p = .17$ ), or sex (36.4% vs. 39.7% girls,  $\chi^2 = .03$ ,  $p = .86$ ). Also, NSSI- and NSSI+ participants were equally likely to have past or current suicidality (i.e., suicidal ideation or suicide attempts) documented in their medical charts (84.1% and 84.6%, respectively;  $\chi^2 = .00$ ,  $p = 1.0$ ).

Refer to Table 2 for NSSI phenomenology for the full sample, by age, and by sex. NSSI+ participants engaged in an average of 1.64 methods of self-injury ( $SD = .87$ ), with a range of one to five methods. Boys and girls did not differ in the average number of NSSI methods ( $M_{boys} = 1.59$  vs.  $M_{girls} = 1.58$ ;  $\chi^2 = .43$ ,  $p = .51$ ). Nine, ten, eleven, and twelve year olds also did not differ in the average number of methods ( $M_{nine} = 1.88$ ,  $M_{ten} = 1.59$ ,  $M_{eleven} = 1.56$ ,  $M_{twelve} = 1.59$ ;  $\chi^2 = 4.04$ ,  $p = .26$ ). Forty-three of the NSSI+ participants (55%) had only one NSSI method documented in the medical records, while 35 NSSI+ participants (45%) had 2+ documented NSSI methods. Boys and girls did not differ in endorsing one method of NSSI vs. 2+ methods of NSSI,  $\chi^2 = 4.30$ ,  $p = .51$ . Similarly, nine, ten, eleven, and twelve year olds did not differ in endorsing one method of NSSI vs. 2+ methods of NSSI,  $\chi^2 = 4.03$ ,  $p = .26$ .

Headbanging was the most commonly identified method of self-injury among NSSI+ participants overall ( $n = 30$ , 24.2%), among the older participants (i.e., eleven and twelve year olds) and for both boys and girls (see Table 2). Among the youngest participants (i.e., nine year olds), hitting/slapping/punching self was the most commonly endorsed method of self-injury. Biting was the most commonly endorsed method of self-injury among the ten-year-old NSSI+ participants.

Using Lloyd-Richardson et al.'s (2007) dichotomous conceptualization between minor forms of NSSI and moderate/severe forms of NSSI, 54 NSSI+ participants (69.2% of the total NSSI+ participants) reported a history of engaging in moderate/severe forms of NSSI (i.e., choking self with shirt, ingesting crayons/markers, erasing arms, headbanging/banging head on wall/floor/objects, scratching face, cuts to stomach/forearm/legs, cutting/piercing with needles, scraping with pen cap, stapling hand/face, trying to break arm/legs, stabbing self with pencil, banging nose, burning, ripping skin, clawing eyes, throwing self down stairs). Twenty-four NSSI+ participants (30.8% of the total NSSI+ participants) engaged in only minor forms of NSSI (i.e., biting/biting fingers and toes past nails, scratching, throwing self on ground, hitting self/head, pulling hair/eyebrows (out), picking skin/head/scabs to form scars, punching self/head/walls, hitting legs with fist, slamming legs/self against fists/floor, pinching self/face, pulling face, slapping self/head). Moderate/severe NSSI+ participants did not engage in more NSSI methods ( $M = 1.48$ ) compared to minor NSSI+ participants ( $M = 1.38$ ;  $t = -.87$ ,  $p = .39$ ). Boys and girls did not differ in NSSI severity ( $\chi^2 = .97$ ,  $p = .33$ ; 50% boys vs. 50% girls endorsed only minor NSSI behaviors). There were also no age-related differences between minor and moderate/severe NSSI+ participants ( $M_{minor} = 10.54$  vs.  $M_{moderate/severe} = 10.69$ ,  $t = -.52$ ,  $p = .60$ ).

**Self-reported distress.** Independent sample t-tests were conducted to examine NSSI-group differences in self-reported clinical rating scales (i.e., CDI, MASC, ChIA, TSCC-PTS, CASPI). Results indicated that NSSI+ and NSSI- participants did not differ for the TSCC-PTS ( $p = .43$ ; see Table 3). Group differences approached significance for the MASC ( $p = .08$ ) and the CASPI ( $p = .07$ ), suggesting NSSI+ participants may have

higher levels of anxiety and suicidality than NSSI- participants. The effect sizes were small (Cohen's  $d = .33$  and  $.35$ , respectively). Significant group differences were found for both the CDI and the ChIA total scores ( $ps < .05$ ), with NSSI+ participants reporting greater depressive symptoms and anger than NSSI- participants. These effect sizes were medium (Cohen's  $d = .60$  and  $.46$ , respectively).

**Psychiatric distress by NSSI severity.** Analyses next examined whether NSSI severity affected relations between self-reported distress and NSSI. NSSI severity was examined in two ways: first by using the dichotomous classification of minor versus moderate/severe NSSI (compared to no NSSI), and then by number of methods (i.e., one method vs. 2+ methods compared to no NSSI). One-way, between-groups ANOVAs indicated that NSSI-, minor NSSI+, and moderate/severe NSSI+ participants did not differ in their scores on the MASC, TSCC-PTS, or the CASPI ( $F_s = .31 - 1.82$ ,  $ps = .17 - .73$ ; see Table 4). These effect sizes were small (Eta squared =  $.01 - .03$ ). However, moderate/severe NSSI+ participants reported higher levels of depression ( $F = 5.09$ ,  $p < .05$ ) and anger ( $F = 3.34$ ,  $p < .05$ ) compared to NSSI- participants. These effect sizes were medium (Eta squared =  $.09$  and  $.05$ , respectively). Minor NSSI+ participants did not differ from either moderate/severe NSSI+ or from NSSI- participants for depression or for anger (see Table 4).

Next, analyses examined NSSI severity by the number of methods groupings. One-way, between-groups ANOVAs indicated that NSSI-, NSSI+ participants engaging in one method, and NSSI+ participants engaging in 2+ methods did not differ in their scores on the MASC, TSCC-PTS, or the CASPI ( $F_s = .31 - 2.94$ ,  $ps = .19 - .73$ ; see Table 5). These effect sizes were small (Eta squared =  $.01 - .05$ ). Participants with one

method of NSSI reported higher levels of depression on the CDI ( $F = 4.70, p < .05$ ) than NSSI- participants. This effect size was medium (Eta squared = .07). Results approached significance for participants with 2+ methods of NSSI reporting higher levels of anger on the ChIA ( $F = 2.94, p = .057$ ) than NSSI- participants. This effect size was small (Eta squared = .05).

**Moderating influence of sex and age on NSSI differences in psychiatric distress.** Sex and age were examined as potential moderators of the NSSI-group differences in psychiatric. These analyses are considered exploratory, as there is limited knowledge about NSSI in childhood. More importantly, there is a paucity of information about the demographics of children who self-injure, about their self-reported distress, and how their background/demographic information may affect their psychiatric distress.

**Psychiatric distress, NSSI, and sex.** Two-way, between-groups ANOVAs examined the impact of sex on relations between NSSI (present or absent) and self-reported CDI, MASC, ChIA, TSCC-PTS, and CASPI scores. The sex X NSSI-status interaction effects did not reach statistical significance for any of the self-reported measures (all  $ps = .29 - .90$ ), indicating that relations between NSSI-status and psychiatric distress did not differ by sex.

**Psychiatric distress, NSSI severity, and sex.** Two-way between-groups ANOVAs examined the impact of sex and NSSI severity in two ways. The first set of analyses examined whether sex moderated group differences between NSSI-, minor NSSI+, and moderate/severe NSSI+ on CDI, MASC, ChIA, TSCC-PTS, and CASPI scores. The sex X NSSI-severity status interaction effects did not reach statistical

significant for any of the self-reported measures (all  $ps = .16 - .75$ ), indicating that relations between NSSI-severity status and psychiatric distress did not differ by sex.

Next, two-way ANOVAs examined the moderating effect of sex on psychiatric-distress group differences between NSSI-, one method, and 2+ methods. The interaction effects of sex X NSSI severity by methods, by the CDI, MASC, ChIA, TSCC-PTS, CASPI measures, did not reach statistical significance (all  $ps = .30 - .97$ ).

**Psychiatric distress, NSSI, and age.** Two-way, between-groups ANOVAs examined the impact of age and a history of NSSI as measured by the CDI, MASC, ChIA, TSCC-PTS, and CASPI. The interaction effects did not reach statistical significant for any of the self-reported measures (all  $ps = .22 - .91$ ).

**Psychiatric distress, NSSI severity, and age.** Two-way, between-groups ANOVAs examined the impact of age and NSSI severity in two ways. The first set of analyses examined age differences between NSSI-, minor NSSI+, and moderate/severe NSSI as measured by the CDI, MASC, ChIA, TSCC-PTS, and CASPI. The interaction effects of age X NSSI severity, by the CDI, MASC, ChIA, TSCC-PTS, CASPI measures, did not reach statistical significance (all  $ps = .08 - .93$ ).

The second set of analyses examined age group differences between NSSI-, one method, and 2+ methods as measured by the CDI, MASC, ChIA, TSCC-PTS, and CASPI. The interaction effects of age X NSSI severity by methods did not reach statistical significance for the CDI, the ChIA, the TSCC-PTS, or the CASPI (all  $ps = .30 - .97$ ). However, there was a statistically significant interaction effect of age X NSSI severity by methods for the MASC [ $F(6,110) = 2.18, p = .05$ ], with a medium effect size (partial eta squared = .11).

To interpret this interaction, simple slope analyses (Aiken & West, 1991) examined relations between age and MASC scores separately for NSSI-, NSSI+ participants engaging in one method, and NSSI+ participants engaging in 2+ methods. Results indicated a positive relation between age and MASC scores for NSSI- participants ( $\beta = .24, p = .06 [n = 61]$ ) and for NSSI+ participants engaging in 2+ methods ( $\beta = .23, p = .11 [n = 48]$ ). The relation between age and MASC scores was negative and smaller in magnitude for NSSI+ participants engaging in one method ( $\beta = -.10, p = .47 [n = 58]$ ).

**Multivariate analyses.** In the univariate analyses, significant NSSI-group (presence vs. absence) differences were evident for the CDI and for the ChIA (see Table 3). Next, analyses examined whether these effects remained consistent after controlling for the other indices of psychiatric distress. I conducted a multivariate logistic regression, predicting NSSI-status from CDI, MASC, ChIA, TSCC-PTS, and CASPI scores. After controlling for the other distress indices, CDI scores remained a significant predictor of NSSI-status, Wald  $\chi^2(1) = 4.67, p < .05$  (OR = 1.05, 95% CI 1.00 – 1.09). The differences between NSSI+ and NSSI- participants on ChIA scores approached but did not reach significance, Wald  $\chi^2(1) = 2.93, p = .09$  (OR = 1.03, 95% CI 1.00 – 1.07). Consistent with the results of the univariate analyses, MASC, TSCC-PTS, and CASPI scores were not independently related to NSSI status (all  $ps = .17 - .95$ ).

In the univariate analyses, I observed significant NSSI-group (NSSI- vs. minor NSSI+ vs. moderate/severe NSSI+) differences for the CDI and for the ChIA (see Table 4). Multivariate analyses examined whether these effects remained consistent after controlling for the other indices of psychiatric distress. I conducted a multivariate logistic

regression to predict NSSI-severity status from CDI, MASC, ChIA, TSCC-PTS, and CASPI scores. After controlling for the other distress indices, CDI scores remained a significant predictor of moderate/severe NSSI+ participants, Wald  $\chi^2(1) = 7.00, p < .05$ , (OR = 1.06, 95% CI 1.02 – 1.11). The differences between moderate/severe NSSI+ and minor NSSI+ participants on their CDI scores approached, but did not reach, significance, Wald  $\chi^2(1) = 3.24, p = .07$ , (OR = .95, 95% CI .90 – 1.00). Additionally, ChIA scores remained a significant predictor of moderate/severe NSSI+ participants, Wald  $\chi^2(1) = 4.2, p < .05$ , (OR = .96, 95% CI .92 – 1.00). Consistent with the results of the univariate analyses, MASC, TSCC-PTS, and CASPI scores were not independently related to NSSI severity status (all  $ps = .16 - .77$ ).

In the univariate analyses, significant NSSI-group (NSSI- vs. NSSI+ participants using one method vs. NSSI+ participants using 2+ methods) differences were evident for the CDI and for the ChIA (see Table 5). I used multivariate analyses to test whether these effects remained consistent after controlling for the other indices of psychiatric distress. I conducted a multivariate logistic regression predicting NSSI-severity status from the CDI, MASC, ChIA, TSCC-PTS, and CASPI scores. After controlling for the other distress indices, the differences between NSSI- and NSSI+ participants using 2+ methods on their CDI scores approached but did not reach significance, Wald  $\chi^2(1) = 3.15, p = .08$ , (OR = 1.00, 95% CI .91 – 1.00). The differences between NSSI- participants and NSSI+ participants using one method on their CDI scores was statistically significant at  $p = .05$ , Wald  $\chi^2(1) = 3.76$  (OR = 1.05, 95% CI 1.00 – 1.09). The differences between NSSI- participants and participants using 2+ methods on their ChIA scores approached, but did not reach, significance, Wald  $\chi^2(1) = 3.67, p = .06$ , (OR = 1.00, 95% CI .91 –



1.00). Consistent with the results of the univariate analyses, MASC, TSCC-PTS, and CASPI scores were not independently related to NSSI severity status (all  $ps = .21 - .99$ ).

## **Discussion**

Study I examined the prevalence of NSSI among children, ages 9–12, admitted to a psychiatric hospital. I examined psychosocial correlates including anxiety, depression, anger, reactions to trauma, and suicide potential among children with and without a history of NSSI. Additionally, I examined phenomenological factors, including the severity by number of methods and the severity by type of methods among children who engage in NSSI.

**Prevalence and demographic factors.** One aim of this research was to determine the prevalence of NSSI on a child inpatient unit while also ascertaining key demographic data (e.g., sex, race/ethnicity, age) potentially related to NSSI. Almost 64% of children on this inpatient unit had endorsed past or current NSSI behavior, per their medical charts. This prevalence rate is similar to that found for adolescent inpatient populations (Rizzo et al., 2014; Wolff et al., 2013) and is notably higher than the rate discovered in a community sample of same-aged children endorsing NSSI (i.e., 7.6% of 3<sup>rd</sup> and 4% of 6<sup>th</sup> graders; Barrocas et al., 2012). The average age of this sample of inpatient NSSI+ participants was 10.64, with a range of nine to twelve years old – much younger than the typically reported age of NSSI onset (i.e., twelve to fourteen years of age; e.g., Ferrara et al., 2012; Glenn & Klonsky, 2009; Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Swannell et al., 2008).

In addition, boys and girls were equally likely to have a documented history of NSSI; similarly, no racial/ethnic differences were found between NSSI+ and NSSI- participants. The lack of sex differences is particularly noteworthy, given this is

inconsistent with prior literature examining adolescent NSSI with treatment seeking populations (e.g., Boxer, 2010; Cloutier et al., 2010)

**NSSI phenomenology.** A second aim of this study was to learn of the phenomenological factors of children's NSSI, including methods and severity. Headbanging was the most commonly endorsed method overall, although there were differences by age (e.g., nine-year-olds endorsed hitting/slapping/punching more frequently). It appears this sample reported more physically aggressive NSSI acts than are typically assumed for adolescents (e.g., cutting; Nixon et al., 2006). Approximately 70% of NSSI+ participants engaged in moderate/severe NSSI, including cutting, burning, headbanging, and erasing. This pattern (i.e., moderate/severe NSSI being more prevalent than minor NSSI) has similar rates in adolescent samples (Lloyd-Richardson et al., 2008). There was a relatively even split between participants using one method (55%) and participants using 2+ methods (45%), slightly different than what was found in Lloyd-Richardson et al.'s (2008) research (i.e., 42% using one method and 58% using 2+ methods). There were no sex and age differences between moderate/severe and minor NSSI+ participants or NSSI+ participants using one method or 2+ methods. Boys and girls, as well as nine to twelve year olds, were equally likely to endorse minor NSSI+ vs. moderate/severe NSSI, and one method vs. 2+ methods of NSSI.

Additionally, this study examined distinctions among children who self-injure by differentiating them by the severity of their methods of NSSI (see Lloyd-Richardson et al., 2008) and the number of methods used to engage in NSSI. These analyses showed that those engaging in minor forms of NSSI (e.g., biting/biting fingers and toes past nails, scratching, throwing self on ground) did not differ from those engaging in moderate

forms of NSSI (e.g., headbanging/banging head on wall/floor/objects, cuts to stomach/forearm/legs, stapling hand/face) on any of the self-reported measures of distress. Similarly, those using one method of NSSI did not differ from those using 2+ methods of NSSI on any of the self-reported measures of distress. This is not quite consistent with the prior literature as Lloyd-Richardson et al. (2008) found more psychopathology in the moderate/severe NSSI group compared to the minor NSSI group. Similarly, in adolescent research examining one method vs. multiple methods of NSSI, engaging in multiple methods was more strongly associated with suicide risk/suicide attempts compared to engaging in a single method (Nock et al., 2006; Turner, Layden, Butler, & Chapman, 2013).

**Psychiatric correlates.** The third aim of this research was to examine the relations of internalizing and externalizing symptoms on NSSI. One of the most robust findings was the elevated self-reported depression among NSSI+ participants relative to NSSI- participants. This was shown in the bivariate analyses and remained evident after controlling for other self-reported indices of distress. Moreover, moderate/severe NSSI+ participants (i.e., individuals engaging in more physically damaging NSSI) reported higher levels of depression than NSSI- participants. Additionally, NSSI+ participants engaging in one method reported higher levels of depression than NSSI- participants. This pattern is consistent with the adolescent literature, which shows that adolescents engaging in NSSI are more likely to report depression or depressive symptoms (Giletta et al., 2012; Hankin & Abela, 2011; Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2007; Ross & Heath, 2002; Swenson et al., 2008). The current study also revealed elevated self-reported anger among NSSI+ participants relative to NSSI- participants,

also consistent with adolescent literature (Jacobson & Gould, 2007; Laye-Gindhu & Schonert-Reichl, 2005; Nock et al., 2009; Rizzo et al., 2014; Tang et al., 2013). There was a trend showing NSSI+ participants engaging in 2+ methods reporting higher levels of anger than NSSI- participants.

Interestingly, NSSI- and NSSI+ participants evidenced no differences in rates of suicidal ideation and suicide attempts per their medical charts. This has not been the case in the adolescent NSSI literature (e.g., Swenson et al., 2008). For example, Wolff et al. (2013) found 13% of their adolescent inpatient sample to be part of the ‘suicide attempt’ group (i.e., only ever attempting suicide, no history of NSSI) and 42.7% of the sample to be part of the ‘NSSI and suicide attempt’ group (i.e., history of attempting suicide and engaging in NSSI). The current study not only had much higher rates of inpatient children belonging to either the ‘suicide attempt’ group (84.1%) or the ‘suicide attempt/NSSI’ group (84.6%) (vs. 15.9% of children with no history of NSSI/suicide attempt/ideation vs. 15.4% of children with a history of NSSI, but history of suicide attempt/ideation), but also the rates were relatively equal. It is possible this sample of children admitted to a psychiatric hospital are inherently more ill than even an adolescent inpatient population, and thereby would have more psychiatric problems and potentially higher rates of suicidality. Lastly, there were no differences between NSSI+ and NSSI- participants on posttraumatic stress symptoms, inconsistent with adolescent NSSI research (e.g., Shenk et al. 2010). Adolescents endorsing NSSI typically report higher levels of PTSD symptoms, and some studies have reported higher incidents of trauma (i.e., child maltreatment) associated with NSSI (e.g., Jacobson & Gould, 2007, Weierich & Nock, 2008). The current study’s results may suggest children, with and without a

history of NSSI, hospitalized to an inpatient unit may be more psychiatrically impaired and may have experienced more negative life events, including trauma (Romanowicz et al., 2013).

**Limitations.** The current study relied on medical charts to ascertain current and lifetime history of NSSI. Therefore, this information may include behaviors that are suicidal in nature, or that do not reflect the true meaning of non-suicidal self-injury. This sample, then, may include children who were classified as self-injurious participants, when in fact their behaviors were suicidal. Additionally, this sample may have omitted children with self-injurious behaviors because the evaluator did not ask about NSSI or the child and/or family did not admit to self-injurious behaviors upon admission to the hospital. There is potential risk that some information may not have been recorded in the medical record because it was unknown or it was not recorded. The average age of onset could not be determined based on medical charts, so while this study supports the idea that NSSI occurs at younger ages than generally thought, it remains unclear when the actual age of onset may be. Finally, the generalizability of the current findings may be limited by the use of a mostly White sample.

**Conclusions.** Even in an acute setting, such as a psychiatric inpatient hospital, higher levels of depression differentiated NSSI+ participants from NSSI- participants. Thus, depression may play a significant role in increasing risk for NSSI among child psychiatric inpatients. Depression occurring at such young ages, where children potentially have limited coping resources in their repertoire, may put them at risk for engaging in high-risk and ultimately dangerous behaviors. Recognizing that NSSI occurs much earlier than previously thought, and understanding how psychiatric distress (i.e.,

depression, anger) contributes to NSSI, will inform better prevention and intervention treatments targeting NSSI.

These implications can better assist providers in outpatient, hospital, and school settings where children may be receiving mental health assessments. Revising child mental health assessments to be inclusive of NSSI will be important to identify at-risk children. Additionally, a more thorough screening of depression, anger, suicidality, risk factors for engaging in NSSI, may also help identify children engaging in NSSI, or who are at-risk to engaging in NSSI.

There have been a number of empirically supported, mental health prevention programs designed for identifying at-risk youth (e.g., Cavaleri, Olin, Kim, Hoagwood, & Burns, 2011) additionally there are suicide and NSSI prevention programs that exist for adolescents and adults (e.g., Cooper, Clements, & Holt, 2011). These prevention programs typically incorporate peer gatekeepers (e.g., peers that have been trained to identify at-risk individuals and refer them to resources) (Gould, Brunstein-Klomek, & Batejan, 2009). As for younger populations, it is more important for teachers to be aware that NSSI occurs at young ages. The teachers, then, can serve as gatekeepers. For example, an NSSI prevention program created for adolescents, the Signs of Self-Injury Program (SOSI), teaches students and faculty the warning signs of NSSI, how to improve attitudes (e.g., decrease stigma), increase help-seeking, and decrease acts of NSSI (Muehlenkamp, Walsh, & McDade, 2010). This curriculum, created for use in middle and high school settings, may be modified for younger populations.

## CHAPTER THREE

### Study II

#### Aims

The current qualitative study examined the phenomenology and functions of NSSI among children receiving treatment in a New England child inpatient unit. Children with current or past NSSI participated in an interview assessing NSSI phenomenology (e.g., frequency, methods, thoughts, feelings) as well as the functions of their NSSI behavior.

#### Methods

**Participants.** Participants included seven children, aged nine to twelve, admitted to the treatment facility between March 3, 2014 and June 12, 2014. The sample included two boys and five girls. All seven participants self-identified as White. At the time of the interview, two participants were receiving treatment from the facility's partial hospitalization program (one boy, one girl) and five participants were psychiatric inpatients. The average age was 10.71 years old ( $SD = 1.38$ ), with a range of nine to twelve years old and a mode of twelve years old. Refer to Table 6 for demographics and NSSI phenomenology in the qualitative sample.

**Procedure.** Medical charts were reviewed for eligibility criteria including current or past NSSI, age nine to twelve years, and no diagnosis of a psychotic disorder or developmental/intellectual disorder. Eligible participants were then recruited during a family meeting, in which a member from the treatment team (e.g., psychiatrist, social worker, psychologist, nurse) introduced the author (KB). The author read the details of the study from a brief script. The author introduced herself, discussed the goals and procedures of the study, potential risks, what was required of the parent/guardian, and

compensation. Interested parent/guardians then had the option of immediately signing the consent form or taking the consent form to review it and sign at a later time.

A total of twelve children meeting the eligibility criteria were identified. Five families refused: two actively refused (two boys) and three passively refused (two girls, one boy). An active refusal is considered a parent/guardian declining to participate during the family meeting. A passive refusal is where the parent/guardian took the consent to either consider it or discuss with their child, and then never returned the signed consent to the author.

Once parental consent was obtained ( $n = 7$ ), the author approached the child to discuss the study. The author gave the child an assent form to follow along while she read the form aloud. The author and the participant then scheduled a time to conduct the interview, allowing for approximately sixty minutes. Interviews were conducted in the patient's room or an unused activity room (when the patient's room was unavailable). Interviews were audiotaped and generally averaged 26.95 minutes, with a range of 15:39–56:28 minutes.

## **Measures**

***Qualitative interview.*** The semi-structured interview was based on the Self-Injurious Thoughts and Behaviors Interview (SITBI; Nock, Holmberg, Photos, & Michel, 2007). The SITBI, a 169-item structured interview, assesses the presence, frequency, and characteristics of suicidal ideation, suicide plans, suicide gestures, suicide attempts, and NSSI. The current qualitative interview used the SITBI's NSSI module in an open-ended manner to elicit open-ended responses, rather than yes/no or Likert-rating response. The interview included questions about (a) participants' general mood and functioning, (b)



understanding of and definition of NSSI, (c) own NSSI including method, frequency, triggers, and how he/she learned about NSSI, (d) thoughts before/during/after engaging in NSSI, (e) feelings before/during/after engaging in NSSI, and (f) the reasons (functions) he/she engages in NSSI. Lastly, participants were asked if there was anything else they would like to share or something that was important that the interviewer failed to mention/ask. The author conducted all interviews face-to-face.

**Data Analysis.** Content analysis, a specific type of qualitative data analysis, analyzes language, attending specifically to the context and meaning behind the text (Hsieh & Shannon, 2005). The current study used two approaches to content analysis to examine the phenomenology of childhood NSSI and children's reasons for engaging in NSSI. Conventional content analysis was used to describe the phenomena, in this case, age of onset, how children learned of NSSI, what types of NSSI methods they used, their thoughts and feelings related to their NSSI act, potential triggers for their NSSI act, and their reasons for engaging in NSSI. Conventional content analysis was deemed appropriate, as no research studies exist examining the phenomena surrounding childhood NSSI. To date, the literature has only examined adolescents' and adults' reasons for their engagement in NSSI. The use of conventional content analysis prevents the risk of using preconceived categories, in this case, pre-established measures or models such as the four-function model (Nock & Prinstein, 2004; 2005) to make assumptions about the understudied phenomena.

Additionally, directed content analysis was utilized in the current study. The current literature has evidenced that adolescents and adults endorse similar functions for NSSI (i.e., automatic/intrapersonal and social/interpersonal reasons; Klonsky, 2007;

Nock & Prinstein, 2004, 2005). It has yet to be studied whether children's endorsed NSSI functions will map on to these current models. To explore this possibility, the themes that emerged during conventional content analysis were then analyzed and classified into larger categories representing similar meanings.

## **Results**

### **Phenomenology of NSSI**

**Age of onset.** NSSI onset ranged from multiple years to two weeks prior to the interview. Participant 1 (boy, age 9, 4<sup>th</sup> grade) reported starting in second grade (i.e., age 7) and attributed NSSI onset to troubles in school (i.e., "I used to get in trouble [school] a lot in 2<sup>nd</sup>"). Participant 3 (girl, age 12, 7<sup>th</sup> grade) reported starting in sixth grade (i.e., age 11) after an increase in bullying from her peers. Participant 4 (girl, age 11, 6<sup>th</sup> grade) reported she had started at age nine after continuous family conflict. Participant 6 (girl, age 12, 6<sup>th</sup> grade) reported she was "probably" age ten or eleven when she started to cut and that "I think it might have been drama but it might have been a mix of something else." Participant 6 reported that "drama" was interpersonal conflict with same-sex peers at school, which included bullying and spreading rumors. Participant 7 (girl, age 12, 6<sup>th</sup> grade) reported she had started two weeks before the date of the interview and could not identify a precipitant to her behavior. Participant 5 (girl, age 10, 4<sup>th</sup> grade) could not remember when she started engaging in NSSI and Participant 2 (boy, age 9, grade unknown) did not disclose when he started engaging in the behavior. In sum, two participants reported NSSI-onset before the age of ten (i.e., Participant 1, Participant 4) and three participants reported NSSI-onset between ages ten and twelve years old (i.e., Participants 3, 6, and 7).

**Discovered NSSI.** Two (boy, age 9; girl, age 12) of the seven participants reported they did not remember how they learned about NSSI. Participant 2 (boy, age 9) refused to share how he learned about NSSI. Participant 4 (girl, age 11) reported that she learned by educational/informational means (i.e., discussion in health class). Two participants reported they learned from media, specifically Participant 5 (girl, age 10) reported learning about it from a TV commercial while Participant 6 (girl, age 12) reported watching a YouTube video about an individual's personal account of NSSI. Lastly, Participant 3 (girl, age 12) reported, "I don't know how it started, one day I was just, I had a knife and it just happened..." Interestingly, this participant and one of the two participants who did not remember how they learned about NSSI reported having friends that had also engaged in NSSI.

Relatedly, several participants discussed their own NSSI-related communication with others. Participant 7 (girl, age 12) reported that she had posted a photograph to Instagram about cutting, which circulated its way back to her parents, which is how they learned that she had recently engaged in NSSI, and was subsequently brought to the hospital. Participant 6 (girl, age 12) reported much of the "drama" at school involved a trusted friend, to whom she had disclosed her NSSI had told others about her behaviors. Participant 6 reported that other peers would now come to her to talk about their own cutting, since they were aware that she has cut. Participant 6 reported, "I would say it [cutting] is probably normal, like, it is normal for it to happen." She reported that she knew of other classmates at school who currently engage or used to engage in the behavior, and figured this was a typical adolescent occurrence. Participant 3 (girl, age 12) acknowledged having close friends and a romantic partner that had engaged in NSSI,

which was triggering to her at times. Participant 4 (girl, age 11) expressed a desire for the peers that bully her to learn of her NSSI, with the aspiration that this would result in her peers recognizing that the bullying is hurting her.

**Methods of NSSI.** Six of the seven participants (85.7%) admitted to engaging in at least one method of NSSI. The one participant who did not endorse a method of NSSI (Participant 2, boy, age 9) refused to discuss his self-injury. The participants reported a range of one to four methods of NSSI endorsed, with an average of 1.83 ( $SD = 1.17$ ). Of the seven different methods endorsed, cutting was the most frequent ( $n = 4$ ; 66.7%), followed by slapping self ( $n = 2$ ; 33.3%), punching self ( $n = 1$ ; 16.7%), punching self in eye ( $n = 1$ ; 16.7%), biting self ( $n = 1$ ; 16.7%), scratching ( $n = 1$ ; 16.7%), and carving ( $n = 1$ ; 16.7%). Three participants engaged in only one method (cutting), and three participants endorsed multiple methods (two participants endorsed two methods, one participant endorsed four methods).

The participants' self-disclosures about their NSSI methods were mostly consistent with the information gathered from their medical charts. Participant 4 (girl, age 11) and Participant 7 (girl, age 12) were consistent in what they reported during the interview, compared to their medical charts. Participant 3 (girl, age 12) disclosed carving as a method during the interview, which was not listed in her medical chart (her medical record only noted cutting). Participant 6 (girl, age 12) only described cutting as a method during the interview, although her medical chart reported she had also engaged in scratching. Similarly, Participant 1 (boy, age 9) only described slapping and punching himself, although "scratching his face" was an additional method recorded in his medical chart. Participant 5 (girl, age 10) had not reported the NSSI method of "squeezing,"

which had been recorded in her medical chart. She reported “biting” as a method during the interview, which had also been noted in her medical chart. Additionally, she disclosed, “slapping,” “hitting,” and “punching self in eye” during the interview, which were not listed in her medical chart. Participant 2 did not endorse any methods of NSSI during his interview; his medical chart noted he had tied a shoelace around his neck, punched himself, and banged his head against wall as methods of NSSI.

**Triggers/thoughts related to NSSI.** All seven participants identified at least one event or thought that prompted them to engage in NSSI. Overall, four of seven (57.1%) participants endorsed bullying as a trigger for engaging in NSSI. Participant 2 (boy, age 9) endorsed very little during his interview because he did not want to disclose details about his NSSI. He reported it was “kind of private.” While he only reported he was hospitalized for being bullied this most recent time, he did report that, during a prior hospitalization, “I was here because I hurt myself because I was being bullied, but my mom didn’t know I was being bullied.” He went on to say that he was afraid to let his mother know he was being bullied. When he described the bullying, he reported that kids at school would call him names and push him, to which he then retaliated and kicked them. Participant 6 (girl, age 12) reported “drama” as a trigger for her NSSI. Specifically, she shared that the “drama” included peers at school spreading personal information about her (mostly related to their discovery of her cutting), and the potential to use this information as “blackmail.” Even before these most recent episodes of “drama,” she reported similar interpersonal difficulties that preceded NSSI behaviors.

Participant 3 (girl, age 12) started to self-injure because of frequent and egregious bullying. She reported that her peers would, “tell me to go die... I have been told to go

kill myself a lot.” She acknowledged that she started to internalize the negative and hurtful comments from these peers, reporting, “I really just hate myself. I don’t like anything about me... I really believe the things that people say about me, that are very much true... I ignored those thoughts until the bullying really got severe... they became so strong that I believe them now.” The comments she has heard repeatedly (e.g., “fat”) have, in turn, become internalized; she describes using NSSI to cope with these negative self-beliefs. On one occasion, she carved the word “fat” into her thigh. Participant 4 reported that she has been experiencing cyber bullying, and bullying in person at school, that led her to engage in NSSI: “there is a lot of bullying online. People pretending to be me, and telling the boy I like stuff that isn’t true, and saying stuff about me online, and then confronting me at school and saying stuff to me.”

Four participants also endorsed family precipitants or thoughts related to a family member as a trigger for NSSI. Participant 1 (boy, age 9) had difficulties articulating specific triggers for his NSSI; he did report that thinking about his family feeling mad about his “bad behavior” might be linked to his reasons for engaging in NSSI. Participant 5 (girl, age 10) reported thoughts about her brother “because he’s mean to me,” led to her NSSI. She was unable to elaborate or provide further details. The author (KB) later learned from Participant 5’s treatment team that her brother had sexually abused her on multiple occasions. Memories of this abuse may have had a role in triggering this participant’s NSSI behaviors.

Additionally, Participant 3 thought that, during this period in her life when she was exploring her sexual orientation and identity, her mother was not accepting of her. She reported, “my mom didn’t want me to be who I wanted to... she was really, like,

denying that I wanted to be who I was.” Participant 3 spoke at length about the “Emo-Goth” scene that she felt very much connected to, in terms of clothing, music, and personal experiences. She reported that her mother would attempt to confiscate her dark clothing and make-up. Participant 3 also noted that she would engage in NSSI when her mother became upset from finding out about an incident of NSSI (i.e., Participant 3 cuts, mother finds out and becomes upset, Participant 3 cuts again).

Participant 4 (girl, age 11) endorsed a number of triggers that have led to her engaging in NSSI. She recalled that the first time she cut was due to her father (who had been kicked out of the house by mom for stealing/gambling) telling her, “if I ever stopped seeing him or talking to him, he would hurt himself.” She explained her thought processes as a 9-year-old:

I felt, like, really bad that I had done that to my dad, because I am supposed to... I am his daughter. I am, like, supposed to love him and, like, help him, but I didn't. So, that is why I started cutting, because I felt like he shouldn't be the one who was suffering.

She also endorsed, “definitely stress with family, a lot of the times if me and mom get into a fight, then causes my mom and my stepdad to get into a fight and then it causes my sisters to fight. So basically the whole house is all stressed out.” When asked about the fighting:

School problems, because she [mom] wants me to be honest, because I don't tell her anything, so she wants me to talk to her about it, but I usually don't. So that, she doesn't trust me and she thinks, she says I'm immature for my age, and she doesn't trust me to be, like, home alone or anything like that.

Participant 7 (girl, age 12) reported loud noises as a trigger, specifically, she gave an example of a classroom with disrespectful, loud peers. She additionally endorsed

thoughts of “feeling useless” and “feel[ing] like I messed up so many things” as leading up to her engaging in NSSI. She provided an example of when she felt useless:

When I was first going through depression, my friends – some of my friends knew about it, were there for me, being... talking to me, keeping me distracted, and they would give me advice. And, when they had a problem, and they would vent to me. I couldn’t give them advice and I felt useless.

She went on to explain that some of her friends had similar experiences with depression, and she thought she was ineffective at providing them with support and advice, as they had provided her.

**Emotions related to NSSI.** The following were emotions used by six of seven participants to describe their feelings related to NSSI: “frustrated,” “angry,” “sad,” “mad,” “bad,” “depressed,” “really bad,” “hurt,” “upset,” “really, just sad,” “very, very sad,” “disappointed,” “bad anxiety,” “calm,” “relieved,” “regret,” “stressed out,” “really bad,” “really upset,” “really depressed,” “embarrassed,” “relief,” “different,” “really mad,” “little bit more happy,” “better,” “deeply mad,” “hate,” “depressing,” “stress,” “control,” “pretty bad,” “less frustrated,” “less stressed,” and “relieving.” Participant 2 (boy, age 9) did not endorse feelings related to NSSI.

**Emotions preceding NSSI.** Six participants (85.7%) identified an emotion preceding the act of NSSI. Participant 6 (girl, age 12) reported feeling “depressed,” “really mad,” and “really upset” before engaging in NSSI, describing it “just like how it can feel depressing, how you feel as if, like, you’re all alone, no one wants you there, like maybe no one needs you anymore. So, basically, like, you’re a waste of space.” Participant 5 (girl, age 10) reported feeling “frustrated and angry,” while Participant 1 (boy, age 9) reported feeling “sad,” and “mad” before engaging in NSSI. Participant 3



described her emotions have evolved over time in relation to what she feels before she engages in NSSI:

I used to be very angry at people, at my mom, my brother, my dad, but really that anger has gone away. I'm not angry at people anymore, I'm just really sad, I'm very, very sad. I cry a lot when I am by myself. I'm disappointed with myself because I do it [NSSI] in the first place, but it helps me I guess...

Participant 4 (girl, age 11) reported she feels stress before she engages in NSSI, and that while she is not feeling disappointment, she “always feel[s] like something is wrong with me and that everybody else is normal, but I am different.” This caused her to “feel like I disappointed them [family]. I could have been stronger, but I broke” referring to her history of NSSI and finally telling her sisters and mother that she had been cutting for the past two years. She reports they were upset and it felt as if they were “disappointed” in her.

***Emotions present during an episode of NSSI.*** Two participants (28.6%) identified an emotion, or lack of emotion, during the act of NSSI. Participant 1 (boy, age 9) reported an absence of feelings during the act of NSSI. Participant 6 (girl, age 12) reported feeling “a little bit more happy.”

***Emotions following NSSI.*** Five participants (71.4%) identified an emotion following the act of NSSI. Participant 1 (boy, age 9) reported feeling “sad,” and “mad” after he engaged in NSSI, which he reported were the same feelings he felt before NSSI. Participant 6 (girl, age 12) reported feeling “better.” She also reported that, hours later, it would depend on what had happened since she self-injured to affect her mood, “it all depends on, basically, how it has been since [the cutting], like if it [the situation] has gotten better, and obviously I would feel better, but if it's gotten worse, I would feel

worse.” Participant 3 (girl, age 12) reported feeling “calm and relieved” after NSSI. Participant 6 (girl, age 11) also reported feeling “relief” from her NSSI. Interestingly, Participant 7 used the words “less frustrated” and “less stressed” after cutting, rather than positively valenced emotions. She also reports disappointment in herself “because I let that [NSSI] happen to myself, to do that to myself.” Participant 6 (girl, age 12) and Participant 3 (girl, age 12) also endorsed feelings of “regret” following NSSI.

Six of seven participants endorsed a negatively valenced emotion related to their NSSI. Five of the six endorsed both high arousal (e.g., frustrated, angry) and low arousal (e.g., sad, depressed) emotions. One participant only endorsed high arousal emotions related to her NSSI. None of the participants endorsed positively valenced emotions prior to engaging in their NSSI, and four participants endorsed positively valenced emotions after the act. The feelings used were “calm,” “relieved/relief/relieving,” and “better.” Additionally, one participant described her feelings as “less frustrated” and “less stressed.”

**Suicidality and NSSI.** Four of the seven participants (57.1%) mentioned a history of suicidal ideation or attempting suicide during their interviews. The four participants were all girl. Participant 5 (girl, age 10) did not, or could not, differentiate her NSSI thoughts and suicidal thoughts. Participant 3 (girl, age 12) described the distinction between her NSSI from her suicidal thoughts as, “the difference I think is the cutting isn’t really to kill you, but just to relieve you and take you away from it all – killing yourself is really just leaving, you can’t have, you are quitting, can’t take the world anymore, and you need to go.” Participant 3 shared that she had also attempted suicide, by overdose a

few months before this interview. She also reported she was currently admitted to the inpatient unit for suicidal ideation.

Participant 4 (girl, age 11) also was admitted to the inpatient hospital for suicidal ideation. She expressed her thoughts on the difference between suicidality and NSSI as “I had planned the suicidal [act] out and cutting I didn’t think was a really big deal, because it’s not like I was killing myself. But, like, suicide, I would die, but cutting I wouldn’t.”

Participant 7 (girl, age 12) was admitted to the inpatient unit for both suicidal ideation and NSSI. She acknowledged that in one episode of her cutting she was having some thoughts of suicide, however, “I didn’t expect to die because it wasn’t that deep.”

Overall, of the four participants who endorsed both NSSI and suicidality, two recognized suicidal ideation/behaviors were meant to end one’s life, whereas NSSI was used for different reasons. One participant did not clarify her understanding of the difference. Finally, one participant’s expectations remains unclear given she did not expect to die because of her behavior, but she did not admit whether she had any desire to do so.

### **Functions of NSSI**

All of the participants were asked why they believed they engaged in NSSI, or more specifically, what reasons do they think they hurt themselves on purpose without wanting to end their life. Two participants did not report on the functions of NSSI; one participant (Participant 2, boy, age 9) refused to endorse information regarding his NSSI and the other participant (Participant 5, girl, age 10) did not know why she engaged in the behavior. The remaining five participants endorsed at least one reason for engaging in

NSSI. Six functions for engaging in NSSI emerged from the transcripts: relief, control, distraction, self-punishment, attention, and craving.

**Relief.** Four participants (60%) endorsed feeling relieved from engaging in NSSI. Participant 3 (girl, age 11) reported, “it gives me relief... from all the stress and from all the disappointment. I feel like everybody is disappointed in me.” Participant 6 (girl, age 12) explained that her NSSI was a “pain reliever” in that “it just helps me... like, it causes actual pain, but like it doesn’t, it feels like a pain reliever.” Participant 7 (girl, age 12) reported that the cutting relieves “my mind from that stress.” Additionally, Participant 4 (girl, age 11) reported NSSI “gives me relief.”

**Control.** One participant (20%) endorsed feelings of control as a reason for engaging in NSSI. Participant 7 (girl, age 12) reported, “I feel more in control when I did it... just made me feel more in control that I could do something about it.” Specifically, she felt the environment she was in was “really loud” and “stressful,” which led to her feeling frustrated. Her NSSI helped her feel in control in a situation where she felt she had little to no control in.

**Distraction.** One participant (20%) endorsed NSSI as a way to distract her from her “emotional pain.” Participant 3 (girl, age 12) explained one of the reasons for her NSSI being, “the feeling made me feel better, made me, I would believe that it distracts me from the pain that I was feeling inside. I didn’t know where to direct it, where to direct the emotions and stuff. I would direct it to self-harm and really take it out there.”

**Self-punishment.** Three participants (60%) endorsed NSSI as a way to punish themselves. Participant 6 (girl, age 12) stated “[I] don’t want to hurt other people so I decided since I don’t want to hurt other people, I will just hurt myself instead.”

Participant 6 explained that she has a lot of anger and that, instead of reacting and hurting someone or destroying something, it would be better to hurt herself instead. Participant 3 (girl, age 12) reported she would cut, “just for making my mom cry, really just punishing myself” and “punish myself for making people feel that way about me.” She also explained that she used NSSI “if something bad will happen I will take it out on myself.” Participant 4 (girl, age 11) started cutting because she felt responsible for her father’s struggles, “I felt like he shouldn’t be the one who was suffering... my dad doesn’t have to suffer now,” referring to her self-injuring.

**Attention.** Two participants (40%) endorsed NSSI as a way to garner attention. Participant 4 (girl, age 11) reported, “if I do this to myself the kids at school might see and it might stop,” and “the kids at school see how I don’t like it and how it makes me really depressed, maybe they would stop.” Participant 1 (boy, age 9) reported he engages in NSSI, “for attention I think... I like a lot of attention.” He went on to explain that he gets more attention than his siblings “because I’m special... because I was born like that... cause I have bad behavior.” Participant 1 did not believe being “special” was a positive thing, and that it made him feel “bad.” Similarly, Participant 4 also identified feeling “different” as a negative thing.

**Craving.** One participant (20%) endorsed feeling as if the NSSI became something she craved, and that she did not always need to be feeling a negatively valenced emotion or to be triggered to engage in the behavior. Participant 3 (girl, age 12) reported, “I have cut myself because of cravings... Just times that I needed that rush.”

These six functions can be grouped into larger categories. Three larger categories emerged: Internal, Attention, and Self-punishment. Internal Factors, affecting change

internally in the mind or body, included the relief, control, distraction, and craving functions. Attention, or communicating distress, was used to affect change in the environment. Self-punishment includes the individual attempting to affect change both through internal methods and in the environment.

### **Discussion**

The typical reported age of onset for NSSI occurs between twelve and fourteen years of age (e.g., Ferrara et al., 2012; Glenn & Klonsky, 2009; Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Swannell et al., 2008); however, this sample showed age of onset for NSSI occurring between nine and twelve years old, and as early as seven years old in one participant. There were a variety of ways the participants learned about NSSI, from school health class to social media. Additionally, some participants reported having friends or significant others who also engaged in NSSI. These disclosures suggest evidence of social contagion as a risk factor for NSSI (Jarvi, Jackson, Swenson, & Crawford, 2013). This sample of inpatient children endorsed a range of methods for NSSI, some engaging in only one method, while others engaging in upwards of four methods. The most common method endorsed was cutting, which was endorsed by the eleven and twelve year olds. This is consistent with the literature showing adolescents most commonly endorsed method is cutting (e.g., Nixon et al., 2006).

Four out of seven interviewed children endorsed bullying as a trigger or related factor associated with engaging in NSSI. Giletta et al. (2012) found adolescents were more likely to engage in NSSI if they have also been bullied. Similarly, Fisher et al., (2012) found youth experiencing bullying before the age of twelve to be at an increased

risk for self-harm, which in this study included acts of suicide attempts. Bakken and Gunter (2012) also noted that adolescents with higher levels of being bullied (i.e., frequency, severity) were more likely to engage in self-injury. As bullying is associated with poorer adjustment and higher rates of mental illness (Evans, Fraser, & Cotter, 2014), it is important to target bullying among children as a risk factor for engaging in NSSI. Evans, Fraser, and Cotter (2014) identified a number of promising bullying prevention programs, typically incorporating the whole school and parents involvement, teacher training, and classroom rules against bullying, which helped reduce victimization and perpetration.

Four out of seven interviewed children endorsed family related stressors as a trigger or related factor associated with engaging in NSSI. Adolescent and preadolescent (i.e., 12-year-old) research has suggested poor family functioning (e.g., Nixon & Heath, 2009), psychological and behavioral control from parents (Baetens et al., 2014), and poor trust and communication between caregivers and adolescents (Hilt, Nock et al., 2008) as associated with NSSI. Adolescents typically disclose more distress or impairment-related information, to their friends, rather than their parents (Rubin, Bukowski, & Parker, 1998). Therefore, helping children (i.e., before they reach adolescence) may help them be more forthcoming and open to discussing their distress, or specifically, NSSI thoughts and behaviors, to their parents. These discussions may then create better communication and more help-seeking behaviors in children.

The emotions described by the participants, before, during, and after the act of NSS, have been consistently described in the adolescent NSSI literature (e.g., Hilt, Chat et al., 2008; Nixon et al., 2006; Nock & Prinstein, 2005). The most commonly reported

emotions before engaging in NSSI were related to depression and anger. Few participants identified or reported emotions during the act. The most typical emotions to be reported after NSSI were that of feeling calm or relieved followed by feelings of regret. This is in line with what individuals typically report for their reasons/functions for engaging in NSSI – for affect regulation. Additionally, there were high rates of suicide ideation and/or suicide attempts among this group, which has been found in adolescent inpatient samples as well (Jacobson et al., 2008; Swenson et al., 2008; Wolff et al., 2013). As the most commonly endorsed function for NSSI has typically been related to affect regulation (Jacobson & Gould, 2007), it is logical, then, that emotions of a distressing nature (e.g., sadness, anger) are more prevalent in self-injuring populations.

Overall five participants were able to describe the functions for their NSSI behavior. The number of differing functions described by participants ranged from one (Participant 1, boy, age 9) to three (Participant 3, girl, age 12; Participant 4, girl, age 11). Considering the functions as a whole, an interesting pattern emerged. Four of the six functions identified affecting internal change (i.e., relief, control, distraction, and craving). This is similar to the intrapersonal function (Klonsky, 2007; Klonsky & Glenn, 2009) and the automatic function described by Nock and Prinstein (2004, 2005). Klonsky and Glenn (2009) described the intrapersonal functions in which the reinforcement of the NSSI behavior is self-focused. For example, the interviewed children all described relief, control, distraction, and craving as ways to help regulate their internal emotional experiences. Even if the environment was additionally inducing stress, the act of NSSI was more to “relieve” or “distract” from their own internal distress.



Klonsky and Glenn (2009) described interpersonal functions in which NSSI is socially reinforced. Attention can be used to affect change in the environment, and the act of NSSI could thereby be reinforced if it, in fact, works to acquire the desired attention. While interpersonal/social functions are endorsed less frequently than affect-regulation reasons (Jacobson & Gould, 2007; Kim et al., 2015; Nock & Prinstein, 2004, 2005), which is consistent with the finds in this study. The described attention function by the children in this sample appear to be similar to Klonsky and Glenn's (2009) Inventory of Statements About Self-Injury interpersonal factors, Influence (i.e., letting others know the extent of my physical pain) and Marking Distress (i.e., creating a physical sign that I feel awful).

Self-punishment has been a commonly reported reason in clinical samples of adults (Briere & Gil, 1998; Osuch, Noll, & Putnam, 1999), most notably women diagnosed with BPD (Brown, Comtois, & Linehan, 2002; Shearer, 1994). Additionally, clinical and community samples of adolescents have also endorsed self-punishment as a function for NSSI (Kumar et al., 2004; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004; Nixon et al., 2002; Swannell et al., 2008). Klonsky (2007) reported that while affect regulation functions appear to be the primary reasons individuals engage in NSSI, self-punishment is more of a secondary reason.

The functions described by the current study's participants appear to map on to the typically endorsed functions apparent in adolescent and adult research. This, then, is an important implication for treatment. Treatment targeted at reducing NSSI and improving emotion regulation for adolescents and adults may then be modified for younger children, as they are endorsing similar functions.

**Limitations.** The current study based these findings on a limited sample size of mostly girls, twelve year olds, and all White children. While qualitative methods do not necessarily require a large sample size, it is important to include a range of participants that would generalize to the larger population (i.e., in this case children admitted to inpatient psychiatric hospitals) (e.g., Sandelowski, 1995). Another limitation may be that because these children are inpatient, they may be more distressed which could potentially cloud their judgment, insight, and memory of events. Additionally, the qualitative interview was based on an adolescent interview assessing self-injurious thoughts and behaviors. While the current interview was modified for a younger population, in terms of language and general understanding, it remains unclear if this is, in fact, a valid instrument.

**Conclusions.** This study was the first, to our knowledge, to qualitatively analyze NSSI-related data collected from a psychiatric inpatient unit among nine to twelve year olds. This study learned more about the phenomenology of NSSI, including methods, discovery, triggers, and emotions, as well as the functions it serves. This study found that there are many similarities between children and adolescents engaging in NSSI. This study highlights that children are engaging in NSSI at much younger ages than previously thought, but are just as psychiatrically impaired as adolescents.

## CHAPTER FOUR

### **Discussion**

The current two-part study sought to gather NSSI prevalence data on an inpatient psychiatric hospital among nine to twelve year olds, while also determining demographic data and psychosocial risk factors between children who engage in NSSI and children who do not. Additionally, this study aimed to gather data regarding the phenomenology of NSSI in children, including the age of onset, how they learned of NSSI, methods used, triggers to NSSI, emotions related to NSSI, and the functions that NSSI serves. Using mixed-methods analyses, which enhanced the collected quantitative and qualitative data, allowed for the depth and breadth of the understudied phenomena, NSSI in children aged nine to twelve years old. Chapter two, the quantitative section of the current study, used archival chart reviews to assess current and lifetime NSSI behaviors, demographics (i.e., age in years, sex, self-identified race/ethnicity), current and lifetime suicidal ideation and attempts, and self-reported clinical rating scales (i.e., MASC/MASC-2, CDI-2, ChIA, CASPI, and TSCC-PTS) among a psychiatric inpatient population. Chapter three, the qualitative section of the current study, involved qualitative interviews of seven children on the inpatient unit who had engaged in NSSI to learn more about their reasons for engaging in the behavior. These interviews also assessed NSSI onset, how and when they learned of NSSI, what their triggers to engaging in NSSI were, and what emotions they experience with NSSI.

### **Summary**

To our knowledge, this is the first study to comprehensively assess reasons children, nine to twelve years old, engage in the behavior. This two-part study found a

number examine NSSI among a clinical sample of children to determine prevalence, demographic factors, psychosocial risk factors, and phenomenological NSSI factors in understanding more about the important findings that were consistent between the quantitative and qualitative sections. The combination of the studies provided enriching data about NSSI among children, including the associated risk factors and functions of the behavior. The mixed-methods analyses also highlighted crucial similarities and differences between children and adolescents engaging in NSSI.

First, NSSI behaviors are evident among psychiatrically distressed children aged nine to twelve years old. When considering these children's retrospective reports, NSSI behaviors are evident among youth as young as seven years old. Therefore, these findings suggest NSSI is occurring at much younger ages than previously suspected. While this was a clinical sample of nine to twelve year olds, Barrocas et al. (2013) found lower, but existent, rates of NSSI in a community sample of same-aged children. In Claes et al. (2014) their findings for age of onset were 11.56 years old, although they were retrospective reports from adolescents. The current study adds novel information about NSSI among children, aged nine to twelve years old, as they are currently engaging in the NSSI behavior. It was important to assess children directly rather than rely on retrospective reports, as there is an incredible need for earlier intervention efforts addressing NSSI.

Second, NSSI is a highly prevalent behavior on a child psychiatric unit. At almost 64%, this rate matches lifetime rates of NSSI observed among adolescent inpatient samples (13%–82.4%; Boxer, 2010; DiClemente et al., 1991; Jacobson et al., 2008; Nock & Prinstein, 2004; Rizzo et al., 2014; Wolff et al., 2013) and exceeds rates of community

samples of adolescents (2.5%– 28%; Bakken & Gunter, 2012; Brausch & Gutierrez, 2010; Claes et al., 2014; Garrison et al., 1993; Giletta et al., 2012; Hilt, Nock et al., 2008; Klonsky et al., 2013; Lloyd-Richardson et al., 2007; Muehlenkamp & Gutierrez, 2004, 2007; Ross & Heath, 2002; Sornberger et al., 2012; Zoroglu et al., 2003). While some research suggests that NSSI develops into a more frequent and serious behavior over time (e.g., Washburn et al., 2012), these findings show that NSSI among children in an inpatient sample is already occurring, with equivalent rates to adolescents. These findings are, however, based off of a clinical sample of children. Youth at this age that are requiring psychiatric hospitalization may be considered a more severe population and have been associated with worse functional outcomes (Romanowicz, O'Connor, Schak, Swinta, & Lineberry, 2013).

Third, depression is a significant risk factor for children engaging in NSSI. Tested in a number of ways during the quantitative analyses, depression remained significantly associated with NSSI, as well as the increased severity of NSSI (by types of methods). While not as strong as a predictor as depression, anger was also a significant risk factor for children engaging in NSSI. These findings were also consistently reported in Study II; the sample of NSSI+ children reported feelings related to depression (e.g., “like, the kids at school see how I don’t like it and how it makes me really depressed, maybe they would stop [Participant 4, girl, age 11]) and anger (e.g., “It is just that I was depressed and it is like I am really mad and really upset” [Participant 6, girl, age 12]) preceding their NSSI behavior. This has been consistent in the adolescent literature, and has been described as part of the functions NSSI serves (Klonsky, 2007; Nock & Prinstein, 2004, 2005). While functions for engaging in NSSI were not collected during the quantitative study, the

qualitative sample of NSSI+ children endorsed a range of functions for their NSSI behaviors. NSSI+ children tended to endorse internal factors as reasons for engaging in NSSI more frequently than other functions; multiple participants also endorsed the attention and self-punishment functions. Similar to adolescent and young adult NSSI, the most commonly reported functions appear to be related to intrapersonal or automatic reasons in childhood NSSI (Jacobson & Gould, 2007; Klonsky, 2007; Nock & Prinstein, 2004, 2005), specifically NSSI being used for affect-regulation.

Children aged nine to twelve years old were able to articulate, in detail, their reasons for engaging in NSSI. Most children had enough insight to acknowledge why and how NSSI was started and further elaborate on how it has been reinforced over time. If they were given a well-validated measure on NSSI meant for adolescents or adults, it is possible that context would have been lost due to rating choices on a Likert-scale or completing yes/no questions. Through qualitative data collection, the children were able to expand upon their answers regarding their NSSI, and even correct misperceptions or misinterpretations about NSSI. Being immersed in the interviews of NSSI, allowed the use of content analysis to find meaning among words and phrases. Through this mixed-methods approach, a more enriched and thorough understanding of NSSI was captured.

### **Limitations**

The generalizability of the current findings may be limited by the use of a mostly Caucasian sample. Study II also based the findings off of a limited sample size of mostly girl, twelve-year-old sample. Also, the sample size of Study II ( $n = 7$ ) was small.

Additionally, Study I relied on medical charts to ascertain current and lifetime history of

NSSI. Therefore, data may include behaviors that are suicidal in nature, or that do not reflect the true meaning of non-suicidal self-injury.

### **Clinical Implications**

Now that it is apparent children are engaging in NSSI behaviors, assessments and treatments should focus on these behaviors. As NSSI is more common among younger ages than typically thought, mental health assessments will need to be modified to assess for NSSI behaviors. Providers in medical and psychological treatment settings will not only need to be aware of NSSI occurring in children, but will need to adequately assess for the behaviors and then make treatment recommendations/referrals. Given children's similarly endorsed functions to adolescents and adults, similar treatment modalities and protocols may be used to target NSSI. These treatment practices will require modification for a younger population, but learning to regulate distressing emotions and finding alternative coping skills to NSSI may prove to be beneficial in these young populations. Glenn, Franklin, and Nock (2014) reviewed a number of evidence-based psychosocial treatments for self-injurious thoughts and behaviors (a term referring to inclusions of NSSI and suicidal thoughts/behaviors) and found promising interventions. A combination of family involvement and skills building may be especially important in helping children engaging in NSSI. Given their young ages, family involvement is an integral part of treatment. Skills building (e.g., finding adaptive coping skills to replace their maladaptive [NSSI] coping skills) will help children find alternative ways to cope with their distressing thoughts and emotions that leads to their NSSI.

Additionally, targeting children with high levels of anger and depression may reduce/eliminate future or co-morbid NSSI behaviors. Refining current assessments and

measurements directed towards children, to include NSSI, will be helpful to identify additional, at-risk children. Informing mental health practitioners as well as school staff about the prevalence of self-injury during childhood will be crucial in creating and modifying intervention and prevention programs.

## **Conclusion**

This study was the first, to our knowledge, to use a mixed-methods approach to analyze NSSI-related data collected from a psychiatric inpatient unit among nine to twelve year olds. This study learned more about the risk factors of NSSI, demographics of NSSI, phenomenology of NSSI, including methods, discovery, triggers, and emotions, as well as the functions it serves. This study found that NSSI, not only exists among children as young as nine-years-old, but is highly prevalent on in a clinical sample. Higher levels of depression and anger differentiated NSSI+ participants from NSSI- participants. This study also found that there are many similarities between children NSSI and what is known about NSSI among adolescents and young adults. Recognizing that NSSI occurs much earlier than previously thought, and understanding how psychiatric distress (i.e., depression, anger) contributes to NSSI, will inform better prevention and intervention treatments targeting NSSI.



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## APPENDICES

### Appendices:

- A. Consent/Assent Forms
- B. Data Collection Forms/Measures

## **Appendix A: Consent/Assent Forms**

Research Consent Form: Parent or Guardian

Research Assent Form: Child

**Lifespan Affiliate Site where research will be conducted**

☐ Rhode Island Hospital  
☐ Bradley Hospital

☐ The Miriam Hospital  
☐ Newport Hospital

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**Agreement to Participate in a Research Study  
And Authorization for Use and Disclosure of Information**

\_\_\_\_\_  
Committee #

\_\_\_\_\_  
Name of Study volunteer

**Qualitative Interviews of Children Who Self-Injure**

Your child is being asked to take part in a research study. All research studies at Lifespan hospitals follow the rules of the state of Rhode Island, the United States government and Lifespan. Before you decide whether to allow your child to be in the study, you and the researcher will engage in the “informed consent” process. During this process, the researcher will explain the purpose of the study, how it will be carried out, and what your child will be expected to do if they participate. The researcher will also explain the possible risks and benefits of being in the study, and will provide other information. You should feel free to ask any questions you might have. The purpose of these discussions is for you to decide whether participating in the study is the best decision for your child.

If you decide to allow your child to be in the study, you will be asked to sign an agreement which states that the study has been explained, that your questions have been answered, and that you agree to have your child participate. You will be given a copy of this form to keep.

Federal and Lifespan institution rules require that if your child is 8 years or older, the "assent" (agreement) of your child be obtained by the researcher before your child may participate in this study. Your child must sign the consent form as well. You will be given a copy of the signed consent form to keep.

1. Nature and Purpose of the Study

Your child is being asked to take part in a research project because he/she currently engages in self-injury or because he/she has a history of engaging in self-injury.

Self-injury is when someone hurts himself or herself, on purpose, without wanting to or expecting to die from the injury. Rather, he/she hurts himself or herself for other reasons. These reasons have been examined in older individuals; yet to date, there have been no studies to examine younger children's reasons for

engaging in self-injury. The purpose of this study is to learn more about children's reasons for hurting themselves.

We expect to enroll 20 subjects on the inpatient unit who engage in self-injury or who have a history of engaging in self-injury into this study. The sponsor is the Child Psychiatry Department - the Children's Program.

We would also like you to fill out a brief questionnaire about your child's self-injury.

2. Explanation of Procedures

- If you decide to let your child participate, your child will meet with Kristen Batejan, M.A., to answer questions about his/her reasons for self-injuring. It should take about 45 minutes to one hour.
- Some of the questions are personal and may be hard for your child to answer. Your child may choose to skip any question and still be in the study.
- We would also like to audiotape (record) the interview, only for the purpose of accurately writing down the conversation later. No identifying information (like your child's name or birthday) will be recorded on the tape. And, after the end of the study, the tapes will be destroyed.
- The study will take place on the unit in either the child's room or an unused therapeutic room.
- The brief questionnaire we would like you to fill out should take about 15 minutes.
- **Compensation:** Your family will receive a Visa gift card worth \$20.00. Your family will receive it when your child is discharged from the hospital, or the next family meeting (whichever is first). Your child will also receive a small toy that is worth about \$5.00. Your child will be able to pick the toy from a box of toys when he/she is discharged.

Contact Information:

- The principal investigator and clinical supervisor is Roisin O'Mara, Ph.D. She can be reached at (401) 432-1093 or romara@lifespan.org.
- The research coordinator and interviewer is Kristen Batejan, M.A. She can be reached at (617) 997-4929 or KLBatejan@suffolk.edu.

3. Discomforts and Risks

We do not expect you or your child to be physically hurt in any way during this study. However, we will be asking you to complete a brief questionnaire about your child's self-injury and for your child to answer personal questions that may be uncomfortable. These include questions about his/her reasons for engaging in self-injury, and other questions such as his/her thoughts and emotions related to the behavior.

You and your child's participation in all aspects of this study is completely voluntary, and you and your child may choose not to answer any of these questions or stop your/their participation at any time.

4. Benefits

There may be no direct benefits for you and your child's participation in this research study. You and your child may feel good about helping with this research study and contributing to knowledge about the reasons children engage in self-injury.

Kristen Batejan, M.A., will also write a brief summary of what was discussed during the interview for your child's treatment chart that may help inform your child's future treatment, especially in terms of his/her self-injury. Your child's actual interview will not be seen by anyone or kept for the medical chart.

5. Alternative Therapies

- There are no alternative therapies or procedures available should you decline to participate in this study. If you and your child choose not to participate in this study, then you and your child will not be asked any questions about your child's self-injury as part of this research study.

6. Refusal/Withdrawal

It is up to you whether you want your child to be in the study. You are not required to enroll your child or participate. If you decide you want your child to participate, you can always change your mind and remove them from the study at any time. If you decide not to have your child be in the study, or if you remove them later, your child will still be able to get the health care services they would normally get. If you enroll your child but later on the researcher or your doctor feels being in the study is no longer good for your child, they may choose to take your child out of the study before it is over. If new information becomes available that might change your mind about whether you want your child to stay in the study the researcher will share this information with you as soon as possible.

It is up to you whether you want to be in the study. You can still have your child participate, even if you do not want to participate.

7. *Medical Treatment/Payment in Case of Injury*

A research injury is any physical or mental injury or illness caused by being in the study. If your child is injured by a medical treatment or procedure they would have received even if they were not in the study that is not a research injury. To help avoid research injury and added medical expenses, it is very important to follow all study directions carefully. If your child does experience a research injury, Lifespan or the study doctor can arrange medical treatment for them. Such treatment will be paid for as described below.

If you have insurance and your child has a research injury that is not covered by the study, it is possible that some or all of the cost of treating your child could be billed to your insurer. If your health insurance will not cover such costs, it is possible you would have to pay out of pocket. In some cases, Lifespan might be able to help you pay if you qualify for free care under Lifespan policy. However, Lifespan has no policy to cover payment for such things as lost wages, expenses other than medical care, or pain and suffering.

8. Rights and Complaints

Signing this form does not take away any of your lawful rights. If you or your child have any complaints about your child's participation in this study, or would like more facts about the rules for research studies, or the rights of people who take part in those studies, you may contact Patricia E. Houser, anonymously if you wish, in the Lifespan Office of Research Administration, telephone number (401) 444-6246

9. Confidentiality and Research Authorization for Use and Disclosure of Your Health Care Information.

Your child's research records will be treated as private health care records and will be protected according to Lifespan privacy practices and policies that are based on state and federal law. In particular, federal law requires us to get your permission to use or disclose (release your child's information to someone outside of Lifespan) their health information for research purposes. If you sign this form you agree to have your child be in this research study and you permit the use and disclosure of your child's health information for the purpose of conducting the research, providing treatment, collecting payment and running the business of the hospital. This permission has no expiration date. You may withdraw from the study at any time. However, if you do not want the researchers to use or disclose any further information in this study you must cancel permission in writing and may do so at any time. If you cancel your permission, you will stop taking part in the study and no new information will be collected about you. However, if you cancel your permission, it will not apply to actions already taken or information already collected about you by the hospital or the researchers before you canceled your permission.

Generally, the entire research record and any medical records held by the hospital may be used and released for research purposes. The following people or businesses/companies/ might use, release, or receive such information:

- The researcher and their support staff;
- The study sponsor is the Child Psychiatry Department - the Children's Program.
- Doctors, nurses, laboratories and others who provide services to you or the sponsor in connection with this study;
- The company or section of the U.S. government that is paying for the study and others they hire to oversee, administer, or conduct the research;

- The United States Food and Drug Administration, the Department of Health and Human Services, the Office of Inspector General, and the Office of Civil Rights; European Medicines Agency
- People who volunteer to be patient advocates or research volunteer protectors;
- Members of the hospital's administrative staff responsible for reviewing, approving and administering clinical trials and other healthcare or research activities.
- Accrediting Organizations

There are times when the law might require or permit Lifespan to release your child's health information without your permission. For example, Rhode Island law requires researchers and health care workers to report abuse or neglect of children to the Department of Children, Youth and Families (DCYF) and to report abuse or neglect of people age 60 and older to the Department of Elderly Affairs.

All researchers and health care providers are required to protect the privacy of your child's health care information. Other people and businesses/organizations that are not health care providers are not required by law to do that so it is possible they might re-release your child's information.

You have the right to refuse to sign this form and not allow your child to participate in the research. Your refusal would have no affect on your child's treatment, charges billed to you, or benefits at any Lifespan health care site. If you do not sign, your child will not be able to enroll in the research study and will not receive treatment as a study participant.

If you decide to have your child quit the study after signing this form (as described in Section 6) no new information will be collected about them unless you gave us permission to do so. However, the hospital or the researchers may continue to use information that was collected before you removed your child from the study to complete analysis and reports of this research.

For more detail about privacy rights see the Lifespan Joint Privacy Notice which has or will be given to you.

### **SIGNATURE**

I HAVE READ THE ABOVE DESCRIPTION OF THIS STUDY. ALL OF MY QUESTIONS HAVE BEEN SATISFACTORILY ANSWERED, AND, AND I GIVE PERMISSION FOR MY CHILD TO PARTICIPATE IN THIS RESEARCH STUDY.

<p><b>This informed consent document expires on _____.</b>  <b>DO NOT sign this document after this expiration date</b></p>
---

\_\_\_\_\_

Signature of parent/guardian\*                      Date      and      Time when signed

\_\_\_\_\_  
Signature of parent/guardian\*                      Date      and      Time when signed

I AGREE TO PARTICIPATE IN THIS STUDY

\_\_\_\_\_  
Signature of study volunteer (child)\*                      Date

\_\_\_\_\_  
Age of study volunteer (child)

I WAS PRESENT DURING THE CONSENT PROCESS AND SIGNING OF THIS AGREEMENT ABOVE BY THE PARENT/GUARDIAN OR AUTHORIZED REPRESENTATIVE

\_\_\_\_\_  
Signature of witness (required if consent is presented orally or at the request of the IRB)                      Date

IF STUDY VOLUNTEER IS UNABLE TO SIGN OR EXCEPTION TO ASSENT IS SOUGHT, PLEASE EXPLAIN:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I CERTIFY THAT I HAVE EXPLAINED FULLY TO THE ABOVE PARENTS AND STUDY VOLUNTEER, THE NATURE AND PURPOSE, PROCEDURES AND THE POSSIBLE RISK AND POTENTIAL BENEFITS OF THIS RESEARCH STUDY.

\_\_\_\_\_  
Signature of researcher or designate                      Date      and      Time when signed

\* If signed by agent other than parent and study volunteer, please explain below.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Documentation that a copy of this Informed Consent was given to the research participant is a Federal requirement. Prior to making a copy of the signed and dated Informed Consent please check appropriate box(es) as applicable to indicate copy provided to:**

☐ Study Volunteer    ☐ Medical Record    ☐ Researcher    ☐ Other (Specify)

**Affiliate**

☐ Rhode Island Hospital  
☐ Bradley Hospital

☐ The Miriam Hospital  
☐ Newport Hospital

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## **Child Assent to Participate in a Research Project**

\_\_\_\_\_  
Committee #

\_\_\_\_\_  
Name of Study volunteer

### **Qualitative Interviews of Children Who Self-Injure**

This assent form may contain words that you do not understand. Please ask the study doctor or the study staff to explain any words or information that you do not clearly understand. You may take this assent form to think about or discuss with family before making your decision.

#### **Will you be a part of this research study?**

We are inviting you and about 20 other children to be in our research study. This study will help us learn more about why children hurt themselves on purpose. This is called self-injury. We are asking you to be a part of this study because your medical chart shows that you have hurt yourself on purpose (self-injured) at least once.

In order to be a part of this study, the research study must first be explained to both you and your parent (or legal guardian). You will then have the chance to ask any questions that you have about the study. Then, in order for you to start the study, your parent (or legal guardian) must agree, in writing, that you will take part in the study. Also, we are asking you to agree to take part, and you can do this by signing your name on your parents' (or legal guardians') form. Even if you decide to take part in this study, you can change your mind or choose to stop at any time.

#### **Do you need to be in this study?**

Being in this study is your choice and the choice of your parent (or legal guardian). You do not have to be in this study. Even if your parent (or legal guardian) gives permission for you to participate, you can still say no. Your participation in this study is completely your choice.

#### **What kinds of things will you do if you take part in this study?**

If you agree to be in this study, you will meet with Kristen Batejan, M.A., to answer questions about your reasons for hurting yourself. It should take about 45 minutes to one hour. Some of the questions are personal and may be hard for you to answer. You may choose to skip any question and still be in the study. We would also like to audiotape

(record) the interview, so we can write down what we said later. No identifying information (like your name or birthday) will be recorded on the tape. And, at the end of the study, the tapes will be destroyed. The study will take place on the unit in either your room or an unused therapeutic room.

### **Will you feel uncomfortable during this study?**

We do not expect you to be physically hurt in any way during this study. However, we will be asking you personal questions that may be uncomfortable to answer. These include questions about your reasons for hurting yourself, and other questions such as your thoughts and feelings about the behavior.

Being in this study is completely voluntary, and you may choose not to answer any of these questions or stop at any time.

### **Are there any benefits for you?**

You may or may not benefit from doing this study. You may feel good about helping with a research study and help us understand why children hurt themselves. You may also find it interesting to answer questions about yourself and feel good about answering the questions.

### **When will this study end?**

We will only meet with you once, for about 45 minutes to one hour.

### **What do you get for doing this study?**

Your family will receive a gift card for \$20.00. Your family will get it when you are discharged from the hospital, or the next family meeting (whichever is first). You will also get a small toy. You will be able to pick the toy from a box of toys when you are discharged from the hospital.

### **Who will see this information?**

Your medical information will be kept confidential (private) by the research coordinator and principal investigator. Your parent (or legal guardian) will know (or find out) that you have hurt yourself, as we got this information from your medical charts. If you tell us that someone is hurting you, we will have to tell your treatment team (psychiatrist and social worker) and your parent (or legal guardian) so they can help you. Also, if you tell us you are having thoughts to hurt yourself or end your life, we will have to tell your treatment team (psychiatrist and social worker) and the nurse so they can help you.

Kristen Batejan, M.A., will also write a brief summary of what was discussed in the interview for your medical chart that may help your treatment. The actual interview (or the audiotapes) will not be shown to anyone.

## **Appendix B: Data Collection Forms/Measures**

Quantitative Data Collection Form

Qualitative Data Collection Form

Qualitative Interview

ID # \_\_\_\_\_

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*Enter numerical value. Do not enter birth date.*

Age in Years: \_\_\_\_\_

*Check boxes*

Sex: ☐ Boy ☐ Girl

Race: ☐ White  
☐ Black or African American  
☐ Asian  
☐ American Indian or Alaska Native  
☐ Native Hawaiian or Other Pacific Islander  
☐ Bi-Racial  
☐ Multi-Racial  
☐ Other

Ethnicity: ☐ Hispanic/Latino ☐ Non-Hispanic

History of Non-Suicidal Self-Injury: ☐ Yes ☐ No

Current Non-Suicidal Self-Injury: ☐ Yes ☐ No

Suicidal Ideation: ☐ Yes ☐ No Suicide Attempts: ☐ Yes ☐ No

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*List out.*

Psychiatric Diagnoses:

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*Enter numerical values for scores. Check boxes when necessary.*

Trauma Symptom Checklist for Children (TSCC)

Under-report: \_\_\_\_\_

Hyper-report: \_\_\_\_\_

Anxiety: \_\_\_\_\_

Depression: \_\_\_\_\_

Anger: \_\_\_\_\_

PTSD: \_\_\_\_\_

Dissociation: \_\_\_\_\_

Dissociation-Overt: \_\_\_\_\_

Dissociation-Fantasy: \_\_\_\_\_

Multidimensional Anxiety Scale for Children-2 (MASC)

Total MASC Score: \_\_\_\_\_

Inconsistency Index: ☐ Yes ☐ No

Separation Anxiety/Phobias: \_\_\_\_\_

Generalized Anxiety Disorder Index: \_\_\_\_\_

Social Anxiety Total: \_\_\_\_\_

Humiliation/Rejection: \_\_\_\_\_

Performance Fears: \_\_\_\_\_

Obsessions and Compulsions: \_\_\_\_\_

Physical Symptoms Total: \_\_\_\_\_

Panic: \_\_\_\_\_

Tense/Restless: \_\_\_\_\_

Harm Avoidance: \_\_\_\_\_

Anxiety Probability Score: \_\_\_\_\_

Children's Depression Inventory – 2<sup>nd</sup> Edition (CDI-2)

CID-2 Total Score: \_\_\_\_\_

Critical Item Endorsed: ☐ Yes “I want to kill myself”

Emotional Problems: \_\_\_\_\_

Negative Mood: \_\_\_\_\_

Negative Self-Esteem: \_\_\_\_\_

Functional Problems: \_\_\_\_\_

Ineffectiveness: \_\_\_\_\_

Interpersonal Difficulties: \_\_\_\_\_

Children's Inventory of Anger (ChIA)

Total ChIA Score: \_\_\_\_\_

Inconsistency Index: ☐ Yes ☐ No

Frustration: \_\_\_\_\_

Physiological: \_\_\_\_\_

Peer: \_\_\_\_\_

Authority: \_\_\_\_\_

Child-Adolescent Suicide Potential Index (CASPI)

Total Score: \_\_\_\_\_

Anxious-Impulsive Depression: \_\_\_\_\_

Suicidal Ideation: \_\_\_\_\_

Family Distress: \_\_\_\_\_

ID # \_\_\_\_\_

\_\_\_\_\_

Name:

\_\_\_\_\_

Age in Years: \_\_\_\_\_

*One NSSI item must be checked 'yes' to be eligible for participation in the study*

History of Non-Suicidal Self-Injury: ☐ Yes ☐ No

Current Non-Suicidal Self-Injury: ☐ Yes ☐ No

**Treatment Team**

MD:

\_\_\_\_\_

Social Worker:

\_\_\_\_\_

Next Family Meeting:

\_\_\_\_\_

## **Qualitative Interview**

*(Everything bolded is what the interviewer says)*

**Hello [ENTER NAME], my name is Kristen and I would like to sit down with you for some time to get to know you.**

**So, [ENTER NAME] how are you feeling today?**

PROMPTS: If child replies “I don’t know” – **Ok, well how about you tell me what types of things you’ve done today?**

If child replies with typically fun activities – **Well, that sounds pretty fun. Would you say you are having a good day or a not-so-good day?**

If child replies with boring activities or therapeutic activities – **Well, would you say you are having a good day or a not-so-good day?**

If child replies “good” or similar positive adjective – **What’s going on that you’re feeling [use word child uses]?**

If child replies “bad” or similar negative adjective – **Oh, I’m sorry to hear you’re feeling [use word child uses]. Can you tell me more about why you’re feeling [use word child uses]?**

**Do you know why we’re meeting today?**

PROMPTS: If child replies “I don’t know” or “no” – **That’s ok. We’ll start talking about it now! Jump to next question.**

If child replies “yes” – **Oh good! Why don’t you tell me a little about why we’re meeting.**

**Can you tell me what it means to have an injury?**

*If child does not know what injury means, ask if they know what a boo-boo is. If child can explain what a boo-boo is, then simply say boo-boo and injury mean the same thing.*

PROMPTS: Assuming child is correctly explaining injury - **Tell me more about that.**

If child does not discuss the actual “body” being injured – **Can you tell me what it means to hurt your body?**



Once child has given definition of injury to body, make sure that it is correct definition. If child is incorrect, reframe what they have said in correct way and say that this is the definition that will be used throughout the interview.

**Have you ever hurt yourself?**

PROMPTS: **Tell me more about that.**

If child mentions they hurt themselves accidentally – **Ouch! That sounds like it hurt! I’m sorry to hear that happened to you. Would you say that you have ever hurt yourself on purpose?**

If child replies “I don’t know” – **That’s ok. Sometimes it can be hard to remember. How about you take a minute to think about it?**

If child then replies “no” skip to “no” response.

If child then replies “yes” skip to “yes” response.

If child replies “yes” – **Tell me more about that.**

If child does not spontaneously offer this information:

**How did you do that?**

**How often did you do that or something else like it?**

**Do you remember how or when you learned how to [use child’s words for hurting self]?**

If child replies “no” – **[ENTER NAME], I want you to remember that this is a safe place to talk. I want you to know that I’m just here to listen to you and to get to know you. I’m not here to get you in trouble or to make you feel bad about whatever has happened. So, do you ever remember a time where you hurt yourself on purpose?**

If child then replies “yes” skip to “yes” response.

If child then replies “no”

If child has hx of NSSI in chart – **Ok, your treatment team let me know that they think you have hurt yourself on purpose,**

**at least once. Do you think you have done that, even just once?**

If child does not believe they have, it may be best to end interview.

**When you [use child's words for how they hurt themselves], what were you thinking about?**

PROMPTS: If child replies "I don't know" – **Ok, well tell me more about what was going on that day before you [use child's words for how they have hurt themselves] yourself.**

If child replies with what they were *thinking* – **When you were thinking [use child's words for what they were thinking], how were you *feeling*?**

If child replies with an emotion – **Did you feel [enter emotion child used] before you hurt yourself, after you hurt yourself, or during the time you were hurting yourself? It's OK if you were feeling [enter emotion child used] at more than one time, too.**

After child clarifies timeframe of emotion - **So you felt enter emotion child used] [then use before, during, or after], right? How about [then use before, during, or after – for which ever words weren't used yet]?**

If child replies "I don't know" – **Ok, well what are some common feelings?**

PROMPTS: If child gives examples of some feelings – **Those are some great examples! Do you think you felt [use child's example(s)] when you [use child's words for hurting self]?**

If child is unable to give examples of feelings – **[ENTER NAME], I want you to look at this page of faces [hand child page of faces]. There are a lot of faces, showing lots of different feelings. Why don't you take a minute to look at these faces and their feelings, and see if you felt like one of them when you [use child's words for hurting self].** If child chooses emotion, refer back to prompt 'replies with an emotion' and 'clarifies timeframe of emotion'

**Why do you think you [use child's words for hurting self]?**

PROMPTS: If child replies with reasons – **Tell me more about that.**

If child replies “I don’t know” – **Well, what if your friend [use child’s words for hurting self], why would your friend do that?**

If child explains story about why their friend might hurt themselves – **Do you think this might be similar to the reason why you [use child’s words for hurting self]?**

If child replies “yes” – **Tell me more about that.**

If child replies “no” – **Then why do you think you [use child’s words for hurting self]?**

If child replies “I don’t know” – **Well, in what ways is it similar, and in what ways is it different?**

**Before we end today, is there anything else you’d like to tell me about [use child’s words for hurting self], maybe something that you think is important that I forgot to ask?**

**Is there anything else you’d like to tell me?**

**Do you have any questions for me?**

**[ENTER NAME], I just want to say how much I enjoyed meeting with you today and getting to know you. You did such a nice job talking about some difficult topics. Here is a little gift for you to say thank you!**

## Feelings Vocabulary Chart



Table 1

*Intercorrelations for Self-Reported Assessment Measure Total Scores*

	CDI	MASC	ChIA	TSCC-PTS
Children's Depression Inventory	--			
Multidimensional Anxiety Scale for Children	.57	--		
Children's Inventory of Anger	.33	.39	--	
Trauma Symptom Checklist for Children, Posttraumatic Stress	.60	.60	.36	--
Child Adolescent Suicide Potential Index	.67	.55	.40	.57

*Note.* All coefficients are significant at  $p < .01$ . CDI = Children's Depression Inventory;

MASC = Multidimensional Anxiety Scale for Children; ChIA = Children's Inventory of

Anger; TSCC-PTS = Trauma Symptom Checklist for Children, Posttraumatic Stress;

CASPI = Child Adolescent Suicide Potential Index.

Table 2

*Phenomenology of NSSI among the Full Sample of Self-Injurers, by Age, and by Sex*

	NSSI+ <i>n</i> = 78	Age 9 <i>n</i> = 19 (24.4%) <sup>1</sup>	Age 10 <i>n</i> = 10 (15.4%)	Age 11 <i>n</i> = 29 (37.2%)	Age 12 <i>n</i> = 20 (25.6%)	Boys <i>n</i> = 47 (60.3%)	Girls <i>n</i> = 31 (41.0%)
1. Headbanging	30 (38.5%)	8 (42.1%)	2 (20%)	13 (44.8%)	7 (35%)	22 (46.8%)	8 (25.8%)
2. Hitting/slapping/ punching self	21 (27.0%)	9 (47.4%)	1 (10%)	6 (20.7%)	5 (25%)	16 (34%)	5 (16.1%)
3. Biting self	18 (23.1%)	4 (21.1%)	5 (50%)	8 (27.6%)	1 (5%)	12 (25.5%)	6 (19.4%)
4. Scratching self	13 (16.7%)	5 (26.3%)	0	2 (6.9%)	6 (30%)	7 (14.9%)	6 (19.4%)
5. Cutting	8 (10.3%)	0	1 (10%)	3 (10.3%)	4 (20%)	3 (6.4%)	5 (16.1%)
6. Picking skin	8 (10.3%)	2 (10.5%)	0	5 (17.2%)	1 (5%)	2 (4.3%)	6 (19.4%)
7. Throwing/hitting body/ body part against object	7 (8.97%)	2 (10.5%)	0	5 (17.2%)	0	5 (10.6%)	2 (6.5%)
8. Pulling hair	5 (6.41%)	2 (10.5%)	0	1 (3.4%)	2 (10%)	1 (2.1%)	4 (12.9%)
9. Pinching self	3 (3.85%)	1 (5.3%)	1 (10%)	0	1 (5%)	2 (4.3%)	1 (3.2%)

(table continues)

Table 2 cont.

	NSSI+ <i>n</i> = 78	Age 9 <i>n</i> = 19 (24.4%) <sup>1</sup>	Age 10 <i>n</i> = 10 (15.4%)	Age 11 <i>n</i> = 29 (37.2%)	Age 12 <i>n</i> = 20 (25.6%)	Boys <i>n</i> = 47 (60.3%)	Girls <i>n</i> = 31 (41.0%)
10. Erasing self	2 (2.56%)	1 (5.3%)	0	0	1 (5%)	2 (4.3%)	0
11. Stapling self	2 (2.56%)	0	2 (20%)	0	0	2 (4.3%)	0
12. Piercing/stabbing self with object	2 (2.56%)	0	1 (10%)	0	1 (5%)	1 (2.1%)	1 (3.2%)
13. Trying to break arm/leg	2 (2.56%)	0	1 (10%)	1 (3.4%)	0	2 (4.3%)	0
14. Burning	1 (1.28%)	0	0	1 (3.4%)	0	0	1 (3.2%)
15. Choking self	1 (1.28%)	1 (5.3%)	0	0	0	1 (2.1%)	0
16. Ingesting crayons	1 (1.28%)	1 (5.3%)	0	0	0	1 (2.1%)	0
<i>Mean (SD)</i> number of methods (NSSI+ only)	1.64 (.87)	1.88 (.91)	1.59 (.71)	1.56 (.91)	1.59 (.93)	1.59 (.93)	1.58 (.76)
Range of how many methods endorsed	1–4	1–4	1–3	1–4	1–2	1–4	1–3

<sup>1</sup>Reported percentages refer to the number of NSSI+ participants in the specific grouping relative to the total number of NSSI+ participants (*n* = 78).

Table 3

*Comparison of Psychological Measures' Mean Scores between NSSI+ and NSSI- participants*

	NSSI+ ( <i>n</i> = 78)	NSSI- ( <i>n</i> = 44)	<i>t</i>	<i>p</i>	<i>Cohen's d</i>
	----- <i>M (SD)</i>	----- <i>M (SD)</i>			
CDI	67.8 (15.4)	59.4 (12.7)	-3.23	< .05	.60
MASC <sup>1</sup>	.13 (1.09)	-.19 (.85)	-1.80	.08	.33
ChIA	54.0 (12.2)	48.3 (12.7)	-2.42	< .05	.46
TSCC-PTS	52.8 (12.5)	51.1 (10.3)	-.79	.43	.15
CASPI	13.8 (6.5)	11.5 (6.5)	-1.83	.07	.35

*Note.* CDI = Children's Depression Inventory; MASC = Multidimensional Anxiety Scale for Children; ChIA = Children's Inventory of Anger; TSCC-PTS = Trauma Symptom Checklist for Children, Posttraumatic Stress; CASPI = Child Adolescent Suicide Potential Index.

<sup>1</sup>Z scores, rather than raw scores, were used for the MASC as 32 participants completed the MASC version 1 (March, 1997) and 90 participants completed the MASC version 2 (March, 2012).



Table 4

*Comparison of Psychological Measures' Mean Scores between NSSI-, minor NSSI+, and moderate/severe NSSI+ participants*

	NSSI- ( <i>n</i> = 44)	minor NSSI+ ( <i>n</i> = 24)	moderate/ severe NSSI+ ( <i>n</i> = 54)	<i>F</i>	<i>p</i>
	----- <i>M</i> ( <i>SD</i> )	----- <i>M</i> ( <i>SD</i> )	----- <i>M</i> ( <i>SD</i> )		
CDI	59.43 (12.66) <sup>b</sup>	65.63 (16.54) <sup>ab</sup>	68.83 (14.88) <sup>a</sup>	5.09	< .05
MASC <sup>1</sup>	-.19 (.85)	.28 (1.13)	.06 (1.07)	1.82	.17
ChIA	48.30 (12.65) <sup>b</sup>	52.08 (8.01) <sup>ab</sup>	54.86 (13.69) <sup>a</sup>	3.34	< .05
TSCC-PTS	51.07 (10.27)	53.58 (12.73)	52.48 (12.53)	.38	.68
CASPI	11.52 (6.48)	14.26 (6.11)	13.62 (6.73)	1.73	.18

*Notes.* Differing superscripts indicate significant mean differences as  $p < .05$ . CDI =

Children's Depression Inventory; MASC = Multidimensional Anxiety Scale for Children;

ChIA = Children's Inventory of Anger; TSCC-PTS = Trauma Symptom Checklist for

Children, Posttraumatic Stress; CASPI = Child Adolescent Suicide Potential Index.

<sup>1</sup>Z scores, rather than raw scores, were used for the MASC as 32 participants completed the MASC version 1 (March, 1997) and 90 participants completed the MASC version 2 (March, 2012).

Table 5

*Comparison of Psychological Measures' Mean Scores between NSSI-, NSSI+ endorsing one method, and NSSI+ endorsing 2+ methods*

	NSSI- ( <i>n</i> = 44)	NSSI+ 1 method ( <i>n</i> = 43)	NSSI+ 2+ methods ( <i>n</i> = 35)	<i>F</i>	<i>p</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>		
CDI	59.43 (12.66) <sup>b</sup>	68.24 (15.21) <sup>a</sup>	67.29 (15.80) <sup>ab</sup>	4.70	< .05
MASC <sup>1</sup>	-.19 (.85)	.19 (1.16)	.05 (1.02)	1.60	.21
ChIA	48.30 (12.65)	53.67 (12.04)	54.38 (11.10)	2.94	.06
TSCC-PTS	51.07 (10.27)	52.86 (12.94)	52.77 (11.74)	.31	.73
CASPI	11.52 (6.48)	14.05 (6.47)	13.52 (6.56)	1.71	.19

*Notes.* Differing superscripts indicate significant mean differences at  $p < .05$ . CDI =

Children's Depression Inventory; MASC = Multidimensional Anxiety Scale for Children;

ChIA = Children's Inventory of Anger; TSCC-PTS = Trauma Symptom Checklist for

Children, Posttraumatic Stress; CASPI = Child Adolescent Suicide Potential Index.

<sup>1</sup>Z scores, rather than raw scores, were used for the MASC as 32 participants completed the MASC version 1 (March, 1997) and 90 participants completed the MASC version 2 (March, 2012).

Table 6

*Demographics and Phenomenology of NSSI among Qualitative Sample*

	Age	Sex	Grade	Race	Hospital Status	NSSI Methods	Age of Onset	Discovered NSSI
Participant 1	9	M	4 <sup>th</sup>	W	Inpatient	Slap face; Punch	2 <sup>nd</sup> grade [i.e., age 7]	Did not remember
Participant 2	9	M	Unk.	W	Partial	Did not endorse	Would not disclose	Would not disclose
Participant 3	12	F	7 <sup>th</sup>	W	Inpatient	Cut; Carve	6 <sup>th</sup> grade [i.e., age 11]	“I don’t know how it started, one day I was just, I had a knife and it just happened...”
Participant 4	11	F	6 <sup>th</sup>	W	Partial	Cut	Age 9	Educational/informational means (i.e., discussion in health class)
Participant 5	10	F	4 <sup>th</sup>	W	Inpatient	Bite; Slap; Hit; Punch self in eye	Did not remember	TV commercial

Table 6 cont.

	Age	Sex	Grade	Race	Hospital Status	NSSI Methods	Age of Onset	Discovered NSSI
Participant 6	12	F	6 <sup>th</sup>	W	Inpatient	Cut	Age 10 or 11	YouTube video
Participant 7	12	F	6 <sup>th</sup>	W	Inpatient	Cut	Age 12	Did not remember
Mean (SD)	10.71 (1.38)					1.83 (1.17)		

*Notes.* W = White.