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# Not Just Another Paper Cut: An Exploratory Analysis of the Silent Epidemic Non-Suicidal Self-Injury (NSSI) and Efforts to Control Self-Injury Among School-Based Adolescents

Eloisa Sanchez

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**Eloisa Sanchez**

*Candidate*

**HEALTH EDUCATION**

*Department*

This thesis is approved, and it is acceptable in quality and form for publication:

*Approved by the Thesis Committee:*

Dr. Magdalena Avila \_\_\_\_\_, Chairperson

Dr. Christina Perry \_\_\_\_\_, Committee Member

Dr. Jan Armstrong \_\_\_\_\_, Committee Member

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**NOT JUST ANOTHER PAPER CUT: AN EXPLORATORY  
ANALYSIS OF THE SILENT EPIDEMIC NON-SUICIDAL SELF-  
INJURY (NSSI) AND EFFORTS TO CONTROL SELF-INJURY  
AMONG SCHOOL-BASED ADOLESCENTS**

**BY**

**Eloisa Sanchez**

**B.S., INTEGRATIVE HEALTH STUDIES, NORTHERN NEW  
MEXICO COLLEGE, 2010**

**THESIS**

Submitted in Partial Fulfillment of the  
Requirements for the Degree of

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**By**

**Eloisa Sanchez**

**B.S., Integrative Health Studies, Northern New Mexico College, 2010**

**M.S., Health Education, The University of New Mexico, 2010**

**ABSTRACT**

Non-suicidal self-injury (NSSI) is a behavioral health problem within the broader risk category of self-directed violence and closely associated with borderline personality disorder (BPD) (American Psychiatric, 2012). There are several types of NSSI behaviors such as cutting; which are used as a coping mechanism by individuals to relieve distress. These methods of coping are private and silent and according to experts in the field, this is a fast growing behavioral problem among adolescents. Researchers Muehlenkamp, Walsh, & McDade (2010) approximate the life time rates of at least one NSSI act among adolescents in high school to be 23%. The primary purpose of this exploratory thesis is to analyze six state level Youth Risk Behavior Survey (YRBS) databases for prevalence and gender frequency rates among adolescents (14-18 years old) in school-based environments (high school) and secondly, to expose the efforts towards prevention of NSSI within these environments.

Research within NSSI among adolescents in school-based environments addresses this behavioral problem as a “silent school crisis” which is difficult to track because self-reporting of the behaviors varies and often goes unreported (Moya, 2007). Few studies internationally and nationally within school-based environments have been conducted; they show prevalence for NSSI among adolescents in these environments ranging from approximately 7% to 37% depending on the geographic region. Many experts within the field of NSSI state that these behaviors are demonstrated equally by males and females; however, other studies state that females are consistently more likely than males to participate in NSSI.

This study utilizes secondary data gathered from a national survey to establish prevalence and frequency rates of NSSI among adolescents in school based environments. Data were collected from state level databases from the departments of health and education in Arizona, Florida, Maine, Massachusetts, New Jersey, Ohio, and Vermont. The researcher synthesized YRBS facts, questionnaires, and results data into matrices for analysis.

The researcher concluded that the majority of adolescents in school-based environments do not engage in non-suicidal self-injurious behaviors; however, there is a substantial range, 7.5% to 28.2%, of students in the studied “isolated” populations who have participated in NSSI. Another conclusion drawn from within the analysis of the YRBS results is the gender difference. Female adolescents consistently had higher rates of NSSI behavior as compared to males. Finally, as of 2012, there are no standardized programs for prevention and intervention for NSSI within the six states.

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## CHAPTER ONE: INTRODUCTION

“Feeling unreal and distant, disconnected with life,  
I pick up my razor blades,  
Relieved at the sight of them I cry,  
Not totally aware I cut into the skin,  
Jolted back into reality by the act,  
Checking that I’m still alive that I’m still real,  
For a short while I am in control, for a short while I am at peace”.  
(Gardner, 2001, p.3)

### Statement of the Problem: Overview and Purpose

Adolescence is an age of immaturity where the transition is between childhood and adulthood. This transition stage is a time in adolescence where life is unclear, confusing, and stressful (Anderson, Woodward & Armstrong, 2004). This time of transition comes with many pressures from parents, family, friends and others outside the family environment. It is in this stage of life that adolescents are given expectations from authority figures like a sense of morals and being able to judge for themselves what’s right from what’s wrong (Anderson et al., 2004). Adolescents must face the realities of how to survive their teenage years and their ever changing school environment. Most adolescents go with the flow and when it comes to facing a particular pressure, most of them, seeking to be liked and accepted, generally go with the crowd. Everyone has heard the infamous phrase “Everyone is doing it,” which is the usual response from adolescents when their lapse in judgment and common sense is questioned by authority figures. Sometimes peer and family pressures are beyond the mental emotional capacity of the adolescent. When this is an issue it becomes a serious health problem for the individual because he or she turns to alternative methods of coping. A particular coping method

within the public health problem of self-directed violence (SDV) is the behavior of non-suicidal self-injury (NSSI). NSSI encompasses various synonymous terms such as self-injury (SI), self-harm (SH), deliberate self-harm (DSH), deliberate self-violence (DSV), self-inflicted violence (SIV), self-mutilation (SM), and cutting; it refers to these terms without the intention of suicide and defined in detail later on within the analysis of this exploratory thesis. These methods of coping are private and silent and one of the “fastest-growing adolescent behavioral problems” (Purinton & Whitlock, 2004).

Within a school-based environment SI, SH, DSH, DSV, SIV, SM and cutting (NSSI) are known as a “ ‘silent school crisis,’ reflecting insufficient knowledge, confusion, lack of effective interventions, and the tendency for adults and youth to shy away from dealing directly with the issue” (Moya, 2007, p.1). This “silent school crisis” among adolescents in school-based environments is difficult to track throughout pre-existing scholarly and non-mainstream research. The majority of NSSI research is focused within hospitals, mental health institutes and other clinical facilities which do not treat NSSI as the primary issue (eating disorders, depression, bipolar disorder, schizophrenia, and or any other mental health disorder), but as a developed symptom from being in these facilities (Muehlenkamp, Claes, Smits, Peat, & Vandereycken, 2011). The few studies that have been conducted on NSSI within school-based environments are limited to diverse cultural groups with limited and varying prevalence rates as illustrated within the limitations section of this analysis of this exploratory thesis. Studies within institutional and clinical environments suggest that SI, SH, DSH, DSV, SIV, SM, and cutting are on the rise among the adolescent population and the intention to commit these

self-injurious acts are associated with suicide (Whitlock, 2009) and borderline personality disorder (BPD) (American Psychiatric Association DSM-5 Development, 2012).

While little is known about SI, SH, DSH, DSV, SIV, SM and cutting among adolescents within school based populations, this research will examine pre-existing literature to assess the existence, prevalence, and frequency of SI, SH, DSH, DSV, SIV, SM, and cutting as non-suicidal self- injury (NSSI) while differentiating from suicide (Purington et al., 2004). The Centers for Disease Control and Prevention's (CDC) document "Self-Directed Surveillance: Uniform Definitions and Recommended Data Elements" written by Crosby, Ortega and Melanson (2011), guides this research towards differentiating NSSI behaviors from suicide as it categorizes NSSI behavior as health problem of self-directed violence.

### **Scope and Research**

According to Anderson et al. (2004) NSSI, SI, SH, DSH, DSV, SIV, SM and cutting has been viewed through the lens of medical, psychological, and sociological frameworks, which offer clinical interventions and solutions. In addressing the prevalence and frequency of NSSI in school-based environments, the research must simplify and define NSSI. Common contextual characteristics from the medical, psychological and sociological frameworks will be addressed and outlined in the analysis of this exploratory research thesis. These common contextual characteristics are found throughout the literature and modified to guide the researcher to uncovering key differences between NSSI and suicide.

An extensive range of literature has been examined in this analysis. Current research pertaining to NSSI is fairly new if paired with suicide; most of the scholarly literature used within the body of this research analysis for NSSI has been conducted within the past ten to twelve years. Scholarly literature was examined as the source and the use of its references and citable sources offered an extension to explore new avenues for further analysis.

The fundamental terms used within the research and associated with general online searches, data-bases searches, and library searches include: non-suicidal self-injury (NSSI), self-Injury (SI), deliberate self-harm (DSH), self-mutilation (SM), intentional self-harm (ISH), adolescent, suicide, quality of life, self-inflicted violence (SIV), self-directed violence (SDV), self-cutting, and Youth Risk Behavior Survey (YRBS). There are numerous websites offering general information, quotes, poems, blogging, and places to seek help. However, of these websites, there are very few (2 to 5) that are written and supported from known clinical experts or scholarly research authors within the field of NSSI. The expert supported websites have been examined and cross referenced with scholarly literature and was therefore utilized as references. The Youth Risk Behavior Surveys and result data sets from Arizona, Florida, Maine, Massachusetts, New Jersey, Ohio, and Vermont were also utilized and referenced as they contained data with standardized methodologies for instrumentation, collection, protection of human rights, and data reporting.

This exploratory research analysis is conducted using the following parameters in order to establish estimates of prevalence and frequency of the health behavior problem among the population, settings and/or environments, and geographic regions. This

analysis is specific to high school adolescent populations (14to18 years of age) with NSSI behaviors of cutting and related outer superficial tissue damage. The behavior of suicide is used to formulate differences from NSSI. However, the topic of suicide is not discussed in depth as this analysis is focused primarily on NSSI.

### **Rationale for Critical Analysis and Significance**

NSSI has been internationally recognized in studies that are partially titled with DSH, SH, NSSI, or SDV. Studies conducted in the United States, Ireland, Canada, Australia, and Japan have established the existence of self-injurious behaviors such as cutting to be a growing health problem among youths (Greydanus & Shek, 2009 and Communications Department, Health Service Executive, 2007). The National Collaborating Centre for Mental Health (2004) states that “many acts of self-harm do not come to the attention of healthcare services; hospital attendance rates do not reflect the true scale of the problem” (p.21).

Documentation from various studies from within the literature has established NSSI as an alternative coping mechanism that temporarily alleviates distress and avoids the intention to end life. This public health issue has taken the back door to suicide and lacks sufficient research to differentiate it from suicide; although studies have been emerging and the literature is expanding to reflect the paradox between NSSI and suicide. Whitlock (2010) explains, “ in its relation to suicide, NSSI possesses an ambiguous, seemingly paradoxical, status as both a temporarily functional means of sustaining life by reducing and regulating strong negative emotion while simultaneously serving as a



potential harbinger for suicidal intent and attempts” (p. 2). For all of these reasons, it is important to learn more about this troubling phenomenon.

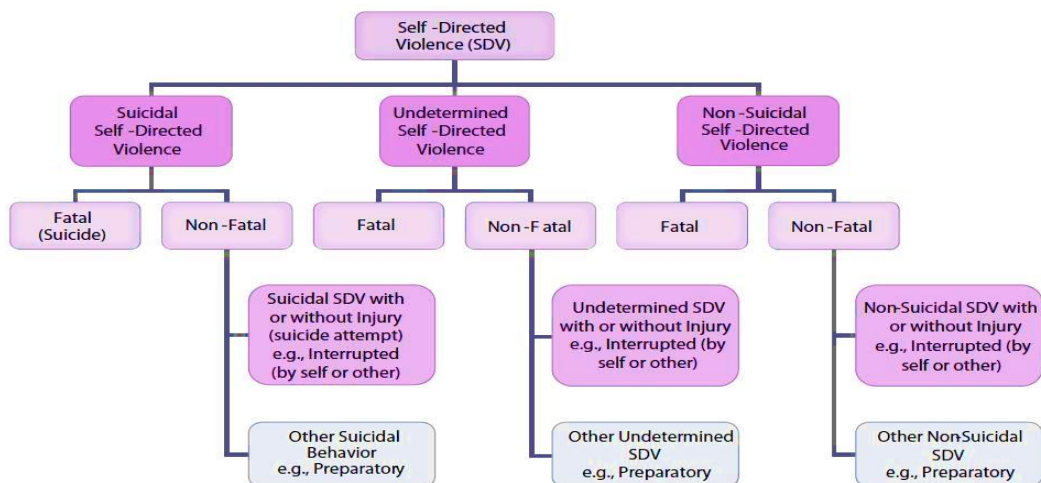
## CHAPTER TWO: REVIEW OF LITERATURE

“Bruises”  
 "I can't stop thinking about  
 Cutting myself up.  
 Visual bruises can be covered with make-up.  
 But down to the core,  
 I'm all bruises."  
 Majandra Delfino, Singer/songwriter

NSSI is a multifaceted term used to describe a behavior within self-directed violence (SDV). Research by Crosby et al. (2011) indicates that the following three behaviors are important for separating the behavior of suicide from NSSI within the greater health problem of self-directed violence. Figure 1 illustrates the breakdown of self-directed violence into three behaviors and within each of the behaviors the outcome is either fatal or non-fatal and a non-fatal outcome is interrupted by self or others; in all three cases it may preparatory for suicide.

**Figure 1:**

*Surveillance Definitions for Self-Directed Violence*



Crosby et al., 2011

## Defining Non-Suicidal Self-Injury NSSI

Non-suicidal self-injury (NSSI) is defined by Whitlock (2009) as the “deliberate, direct and self-inflicted destruction of body tissue, resulting in immediate tissue damage for purposes not socially sanctioned and without suicidal intent” (p.1). Not socially sanctioned refers to the exclusion of piercing and tattooing. NSSI includes a wide range of behaviors that results in damage to inside and outside body tissues. Some of the common forms known include:

- Intentional carving, cutting, ripping, or pulling of the skin
- Subdermal tissue scratching
- Burning the skin
- Pulling hair, eyebrows, or eyelashes with intention of hurting oneself
- Intentionally preventing wounds from healing
- Banging or punching objects to the point of bruising or bleeding
- Biting skin, leaving teeth marks and blood
- Embedding objects into skin
- Severely scratching or pinching with fingernails or other objects to the point where bleeding occurs and marks are shown on the skin

The above mentioned are just a few of the various types of NSSI; however researchers have identified at least 20 distinct forms. Those who self-injure intend to feel better and typically do not intend to end their lives (Whitlock, 2009). However when serious complications occur with self-injuring, emergency hospital visits may be necessary. The CDC (2009) states that “395,320 people [children, adolescents, and adults] were treated in the emergency departments for self-inflicted injuries ... [and] 165,997 people were

hospitalized due to the self-inflicted injuries” (p.2). These statistics are based on suicidal behavioral attempts; they do not reflect the actual prevalence of NSSI and levels of prevalence may be higher due to the fact that “many acts of self-harm do not come to the attention of healthcare services hospital attendance rates do not reflect the true scale of the problem” (National Collaborating Centre for Mental Health, 2004, p.21). The lifetime cost of nonfatal injuries and death due to suicidal behavior was estimated at \$33 billion in 2000 (CDC). Defining intentional injury within this exploratory analysis helps to identify intention within NSSI, but also to separate NSSI intent from suicidal intent.

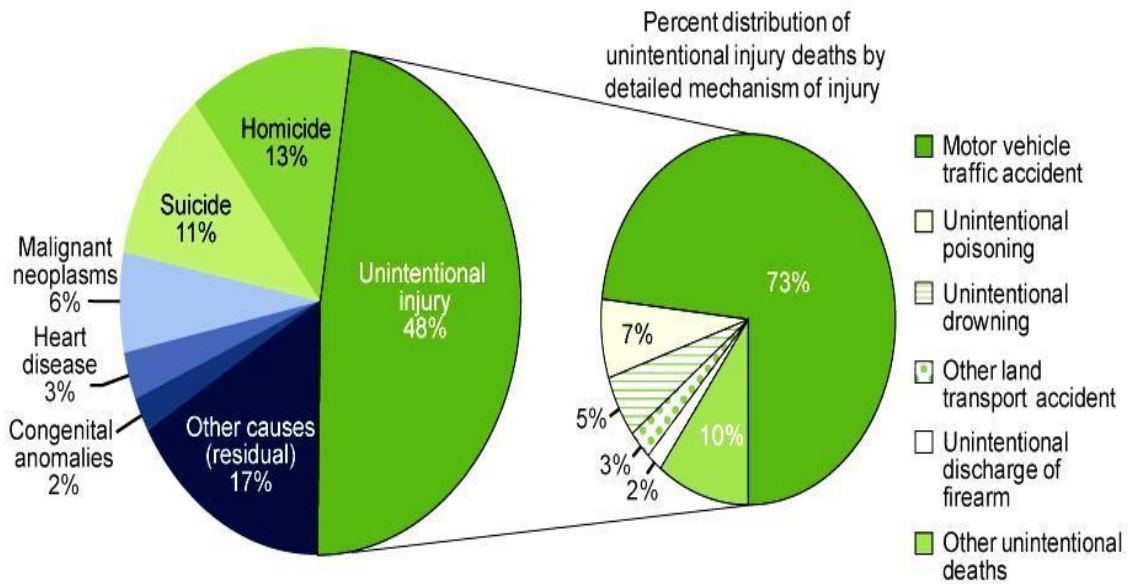
Intentional injury is referred to as self-harm (SH), deliberate self-harm (DSH), self-injury (SI), self-mutilation (SM), and self-inflicted violence (SIV); again these terms are synonymous to NSSI. There are several collaborative definitions for these terms within the literature which give a broad view of what intentional injury entails. “Injury” is simply defined as any hurt and or damage to a living person in a physical sense (Merriam Webster). This physical damage according to Whitlock (2009) could be a result from extreme heat or cold, an object (knife, vehicle, etc.), electricity, chemicals, and or an animal. “Intentional” is defined as the determination to act in a certain way (Merriam Webster), which refers to an act to resolve a problem. Intentional injury can be a cycle of repeated events over a period of time. It is important to note that SH, DSH, SI, SM, SIV, and cutting are currently all linked to suicidal behavior for the purpose of mental/emotional SH (Center for Disease Control).

Figure 2 shows statistics of death rates in the United States among adolescents from 1999 to 2006. This figure shows that unintentional injuries account for 48% of all

deaths among adolescents from 1999 to 2000 and of the 48%, only 10% are due to other unintentional deaths.

**Figure 2**

*Distribution of all Deaths Among Adolescents Age 12-19 in the U.S. 1999-2006*



Minino 2010

The significance of this data, according to Minino (2010), is to classify SH, DSH, SI, and SM under suicide and unintentional injury because the intent of self-injuries could lead to suicide and could be unintentional. These two categories combined include Non-Suicidal Self-injury (NSSI).

### Diagnostic Material

Prevention and intervention programs for NSSI, within the specified parameters stated within chapter one, are tremendously limited due to lack of diagnostic material. The American Psychiatric Association (APA) currently uses the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) for diagnosis of any

mental illness. Diagnostic material in DSM-IV for NSSI is classified under “criterion 5 of borderline personality disorder (BPD) (301.83): ‘Recurrent suicidal behavior, gestures, or thoughts or self-mutilating behavior’” (American Psychiatric Association, 2012). Within the DSM-IV, NSSI does not have a section that clearly defines the behavior which has led the behavior of NSSI to be tremendously underrepresented and inappropriately represented under criterion 5 of the DSM-IV. A new edition (fifth) of the DSM is currently underway by the APA, which is scheduled to be published in May of 2013. Shaffer and Jacobson’s 2009 proposal to the APA contains suggested criteria and rationale for establishing NSSI as a separate diagnostic disorder. Also proposed to the APA for adoption by Shaffer et al. (2009) were two potential Not Otherwise Specified (NOS) subtype categories of NSSI:

Non-Suicidal Self-Injury Disorder, Not Otherwise Specified (NOS), Type 1, Subthreshold: The patient meets all criteria for NSSI disorder, but has injured himself or herself fewer than 5 times in the past 12 months. This can include individuals who, despite a low frequency of behavior, frequently think about performing the act. Non-Suicidal Self-Injury Disorder, Not Otherwise Specified (NOS), Type 2, Intent Uncertain: The patient meets criteria for NSSI but insists that in addition to thoughts expressed in B4 also intended to commit suicide (p.5).

The APA’s (2012) rationale for including NSSI in the upcoming DSM-5 as a new diagnosis is based on the following five factors:

- The limited representation in DSM-IV
- Clinical Implications from scholarly research
- Distinctiveness and differentiation from attempted suicide

- The public health impact
- The impact on research, and distinctive clinical features

Shaffer et al. (2009) state that commonality, distinctiveness, and impairment are the parameters that distinguish the merit of a new disorder considered for inclusion in the DSM. NSSI criteria and symptoms are similar to suicide as they both cause physical damage; what makes NSSI distinctive is that this behavior is a mechanism for relief to preserve life. Impairments associated with NSSI are negative feelings, which are common secondary effects of engaging in self-injury and medical complications such as infections that arise from unsanitary use of in self-injuring tools. The distinctiveness and impairments also provide the rationale for separating the commonality of NSSI and suicide.

## **Prevalence Estimates of NSSI**

### **Current Scholarly Literature**

According to Starr (2004), NSSI behavioral symptoms are seen in both men and women with a range of psychiatric disorders. Whitlock's (2009) research suggests that "13% to 15% of adolescents and young adults surveyed in schools have some history of self-injury" (p.1). Within her research, she states that several individuals who use NSSI only use this mechanism once or twice; then they stop and only a handful of individuals will become chronic self-injurers. The average age of onset across the literature is 14 to 16 years of age, but can start as early as childhood or as late as adulthood and there is no single self-injurer profile. Kerr, Muehlenkamp, and Turner (2010) find that within a primary care setting the rates of NSSI are similar among females and males, with females

frequently reporting cutting and burning themselves and males reporting burning and hitting themselves. The lifetime rate of at least one NSSI act among adolescents is approximately 23% of the adolescent population, according to Muehlenkamp et al. (2009).

A few studies conducted internationally have found limited prevalence rates among school based adolescents. Research on NSSI internationally has focused on isolated groups, meaning within distinct subpopulations. The first of the six studies identified in Table 1 among school-based adolescents came out in late November of 2011 in Victoria, Australia, by researchers Moran, Caffy, Romaniuk, Olsson, Borchmann, Carlin, and Patton. These researchers used a stratified random sample of 1,943 students from the state of Victoria, Australia, between August, 1992, and January, 2008. Methods of instrumentation/collection of data used were questionnaires and telephone interviews. Findings within the early adolescent phase of this study reported that 8% of students engaged in SH with a higher frequency of females (10%) reporting SH than males (6%). In late adolescence, 7% of students reported SH and a frequency of females were consistently at a higher percentage than males. The second isolated population study published in 2011 was a study for SH among an American Indian Reservation Community: White Mountain Apache by researchers Cwik, Barlow, Tingey, Lazelere-Hinton, Goklish and Walkup. This study was a community based, yet results were separated by age and type of SH. Questionnaires were used as the method of instrumentation. Within this study, school aged (10 to 14 years) adolescents reported cutting as the method of choice by both males and females with SH prevalence rates of 33%. The third isolated population study by Yates, Luther, and Tracy in 2008 was among



“privileged” adolescents, meaning “suburban coeducational schools that primarily cater to children of highly educated, white-collar professionals” (p.53), youth from a sample of students from the East Coast (longitudinal sample) and West Coast (cross-sectional samples). The instrumentation methods for this study were questionnaires; data and complete confidentiality for this study was collected via a sealed envelope. The major factors in studying NSSI among this population were pathways leading to NSSI via parental factors such as criticism and parental alienation. The prevalence rates among “privileged” adolescents within the NSSI behavior of cutting was 26% to 37%. A fourth isolated population study was done by Nixon, Cloutier, and Jansson in 2008 among Canadian adolescents (14 to 21 year olds); this study analyzed cross-sectional data from the Victoria Healthy Youth Survey, a longitudinal study of the economic and psychological risks of NSSI behaviors among youth. The study selected students from schools within Victoria, British Columbia, to participate in face to face interviews in each student’s home. The resulting prevalence rate among this population was that 16.9% self-harmed, with the preferred method of cutting. A fifth isolated population studied by Morey, Corcoran, Arensman, and Perry in 2008 was in Ireland among Irish students (15 to 17 years old). This study used a cross-sectional self-reported survey. The results of the survey revealed that 9.1% of students aged 15 to 17 years old in Ireland reported NSSI cutting. The last study in an isolated population that the researcher looked at was conducted in Japan by Matsumoto, Imamura, Chiba, Katsumata, Kitani, and Takeshima in 2008. This study was conducted in coeducational schools with a self-reporting survey given to students ages 12 to 17 years old. The results of this study showed that 9.1% of students in Japan have participated in NSSI cutting.

Table 1 summarizes the studies examined above and clearly shows the varying prevalence rates. Four of the six studies analyzed NSSI in island cultures: Australia, Ireland, Canada, and Japan. The studies conducted in the United States focused on “privileged” and “non-privileged” regions in society including a low income reservation and two wealthy private schools. These six studies focus on cultures within cultures and provide estimates of prevalence as beginning evidence of how wide spread these NSSI practices are.

<b>Table 1</b>			
<i>Prevalence of NSSI (DSH, SH, SI, SM, SIV) Behaviors In Isolated Communities</i>			
<b>Authors</b>	<b>Population</b>	<b>Prevalence</b>	<b>Year published</b>
Moran et al.	Students 14-18 years old Victoria, Australia	7-8% Self-harm no indication of intent	2011
Cwik et al.	Community-based 10-14 years old; White Mountain Apache reservation U.S.	33% Self-harm, cutting	2011
Yates et al.	9 <sup>th</sup> -12 <sup>th</sup> graders U.S.	26-37% Self-cutting	2008
Nixon et al.	14-21 year olds Canada	16.9% (Self-harm, cutting the preferred method)	2008
Morey et al.	Students 15-17 years old Ireland	9.1% Self-harm - cutting the preferred method	2008
Matsumoto et al.	Students 12-17 years old Japan	9.6 % Self-cutting	2008

The studies in Table 1 show prevalence ranging from 7 to 37%; the mean of this range is 17.8% with a standard deviation of  $\pm 10.449$  (7.351% to 28.249%) which means that this prevalence range is widely dispersed from the mean score. These calculations suggest that prevalence rates vary across the literature and do not represent the true magnitude of the behavior health problem. It is important to note that these studies were

conducted using different methodologies for instrumentation, measurement of NSSI, data collection, and data analysis; they also examine specific “isolated” cultures of adolescents in school based environments.

### **Efforts to Control NSSI**

Currently, NSSI is not a diagnosis, but it is associated with BPD for diagnostic purposes. This circumstance misleads experts to misdiagnosing and inappropriate treatment for NSSI. The use of search engines like “Google” to find prevention and intervention programs for NSSI all turns out self-help websites that offer the individual an environment to blog or read about NSSI. The only program that the search engines found that focuses primarily on NSSI is the S.A.F.E. Alternatives (self-abuse finally ends) inpatient treatment program. These search engines also found several scholarly research articles; however, the literature primarily focuses on prevalence and frequency rates similar to the studies discussed in Table 1. This literature does not address interventions or programs available, but does recommend that programs need to be established.

School districts employ several counselors, nurses, and psychologists, who are aware of this health concern, but these services only occur if the NSSI student reveals that he or she is participating in these types of behaviors. Muehlenkamp et al.’s (2010) research stated that “being able to intervene early, or prevent adolescents from starting to engage in NSSI may serve a dual purpose of avoiding serious physical injury, and averting a potential pathway to suicidal behavior. Despite the apparent need for

prevention programs for adolescent NSSI, there are no known programs currently in use” (p.306) in school-based environments.

My investigation showed that there are several sources of information outside school-based environments, for example: websites, clinical and institutional facilities, private outpatient treatment facilities, support groups, and hotlines. There are numerous self-help and informational websites that offer links to blogging and how-to websites. These types of websites generally give information about how to recognize signs of SI and alternative ways to deal with this problem. There are also online social networks for self-injurious individuals to talk to and get information from one another. However, the information they share and the advice given may not always direct visitors toward intervention.

Thus a review of internet sources suggests that treatment, programs, and interventions for adolescents who participate in NSSI are primarily going to be from sources *outside* school environments. However, Muehlenkamp et al.’s (2010) research suggests that students need to have access to a non-judgmental person in school like a nurse, counselor, and/or teacher who provides advice and/or some sort of comfort to an individual who participates in NSSI. Nurses and counselors are trained to help students to talk to their parents and or their primary care physician (Star, 2004) so that the student gets referred to experts and receives the help he or she needs. Kerr et al.’s (2010) research states:

Primary care physicians are logically the next most likely person to discover the self-injurious behavior (e.g. via physical examination, secondary to responding to a primary complaint resulting from the self-injury). ...A primary care physician’s

recommendation for either finding alternatives to self-injury if the patient wants to (e.g. exercise) or seeking more intensive behavioral health treatment may be vital parts of assisting the self-injuring patient (p. 243).

Primary care physicians may refer the adolescent to intervention programs available through community centers or clinical facilities where the individual may receive psychotherapy, pharmacotherapy, and/or referrals to private inpatient treatment facilities (S.A.F.E Alternatives, 2007).

S.A.F.E. Alternatives is a private inpatient treatment facility. It is currently the only existing treatment facility in the nation that is targeted for SI. This organization is specialized for adolescents and offers blogging, a safe alternative hotline, and a treatment team of experts who use therapy, education, and support methodologies to empower clients to identify healthier ways to cope with emotional distress. The philosophy and model for treatment S.A.F.E Alternatives uses is to “focuses on shifting control to the adolescent, empowering them to make healthy choices, including the choice to not self-injure” (S.A.F.E Alternatives, 2007). S.A.F.E Alternatives also offers manuals to school professionals to educate them about how to recognize signs and symptoms of SI, but more importantly, how an individual should react to an adolescent who participates in NSSI. S.A.F.E Alternatives (2007) states:

Unstable, unpredictable or invalidating environments contribute to adolescent anxiety and frustration, which in turn, can contribute to an increase in self-injurious impulses and injury. Therefore, stability and empathy are among the most important ingredients for success in working with self-injurers (p.1).

A program that trains teachers and students to recognize the signs and symptoms of a self-injurer is provided by Screen For Mental Health Inc. Researchers Muehlenkamp et al. (2010) implemented the Signs of Self-Injury (SOSI) prevention program offered by Screen for Mental Health Inc. in five schools where the training course was taught in a 50 minute class period. The participation of these five schools in this pilot study suggests that this intervention program may be an effective prevention program. This is the first program that is targeted for school environments that offers psychoeducation, and provides knowledge for students, teachers, and staff to utilize in order to reduce the stigma that affects individuals who seek help for NSSI.

## **Context of NSSI**

### **Characteristics**

Many adolescents internationally experience the typical social problems of peer pressure and bullying, which has been widely publicized in the media in 2010. When these social problems are left unrecognized by the adolescent, parents, teachers and/or administrators, the quality of life of an adolescent is jeopardized. Many students who endure the painful effects of peer pressure often rely on mechanisms for release. One mechanism is NSSI; many adolescents who use NSSI tend to use the release as a way of coping with internal and external issues. There are several social indicators that contribute to the usage of NSSI: socioeconomic status, popularity and/or body image (Lyness, 2009).

**Social indicators.** When someone exposes the SI of an adolescent, there are many factors within the social indicators that affect the adolescent. The student may feel singled out and alienated from his or her social group. He or she may lose his or her comfort level in peer group settings and within himself or herself. Discrimination against the adolescent from peers triggers unhappiness and poor performance in school; self-esteem also becomes a problem. The general welfare of the adolescent is compromised and results in a poor quality of life.

**Quality of life.** Quality of life is an important factor to for happiness and the ability to live a healthy, full and productive life. Adolescents who are using NSSI as coping mechanisms tend to show certain social indicators of distress. Many adolescents hide their self-injuries (SI), typically with clothing, due to feelings of embarrassment. For example, wearing long-sleeve clothing during the hot summer months hides the self-injuries. However, using clothing as an approach to covering SI threatens the physical body because it is unable to regulate body temperature, which puts the body in danger for dehydration and other serious complications (Cornell University, 2011).

**Adolescent perspective of quality of life.** The literature on NSSI according to Lyness (2009) evaluates the quality of life for adolescents by using direct methods such as focus groups and interviews. Table 2 outlines the quality of life for an individual based on the degree in which he or she enjoys the important potentials of his or her life. This model is used in Raphael et al. (1999) research within a community quality of life project in Toronto, Canada.

<b>Table 2</b>	
<i>Quality of Life Domains</i>	
<b>[Domains]</b>	<b>[Criteria]</b>
Physical Being	Physical health, mobility, nutrition, fitness and appearance
Psychological Being	Independence, autonomy, self-acceptance, and freedom from stress
Spiritual Being	Personal values and standards, and spiritual beliefs
Physical Belonging	Physical aspects of the immediate environment
Social Belonging	Relationships with family, friends, and acquaintances
Community Belonging	Availability of societal resources and services
Practical Becoming	Home, school, and work activities
Leisure Becoming	Indoor/outdoor activities, recreational resources
Growth Becoming	Learning things, improving skills and relationships, and adapting
Raphael et al. (1999)	

Being refers to the physical, psychological and spiritual aspects of existence.

Physical being refers to body image, asking “How do I look?” and making healthy and smart choices about alcohol, drugs, and smoking. Psychological being is a sense of independence that provides adolescents with knowledge of where they are going.

Spiritual being is a feeling that life has a meaning to them and that there is hope for their future. Belonging includes physical and social aspects but is also community based.

Physical belonging refers to a person’s sense of place on planet earth. It’s a feeling of safety at school and around the neighborhood. Social belonging is feeling accepted and appreciated by family, close friends, and others. Community based belonging is having access to medical and/or social services. Becoming refers to adolescent’s growth.

Practical becoming is not only looking after themselves and their appearance, but also reflected in the quality of work that they produce as students. Leisure becoming includes participatory recreational activities like sports or playing an instrument and finding time



to spend with others. Growth becoming encompasses making plans for a job or a future career and solving personal problems as they appear. The domains in Table 2 “direct attention to how these factors affect individuals’ lives and to whether basic human needs are being met within a community” (Raphael et al., 1999, p. 201).

## Motivational Factors

### Behavioral Assessment

There are multiple behaviors associated with NSSI. Some of the NSSI behaviors includes cutting, burning, ripping, and self-bruising. According to Kerr et al. (2010), there are levels of severity within NSSI. These severity levels range from low to high, which corresponds with the number of behavioral types used and number of episodes.

Table 3 illustrates these severity levels:

<b>Table 3</b>		
<i>Risk/Severity Level by Number of Types and Episodes of Self-Injury</i>		
<b>Feature</b>	<b>Indicator</b>	<b>Severity/Risk</b>
Number of types used	1	Low
	2-3	Moderate
	>3	High
Number of Episodes	≤10	Low
	11-50	Moderate
	>50	High
		Kerr et al., 2010

This method is used to assess a patient's behavioral risk and likelihood of accidental suicide (Kerr et al., 2010).

The proximal and most common behavior used in NSSI by adolescents is cutting. The behavior of cutting creates risks for infections, but when paired with other types of self-injury (SI), the risk factors including infection increase the severity of the behavior and likelihood of accidental suicide. The distal behaviors of bullying and peer pressure tend to affect the individual who uses NSSI because these behaviors trigger the need to SI. Bullying includes unkind words towards body composition, clothes that an individual may wear, and/or socioeconomic status. Bullying can also be noticed among parents and teachers who express their concerns to the adolescent in an insensitive matter, often increasing the need to SI.

**Behaviors associated with NSSI.** To assess the behavioral risks for NSSI, Kerr et al. (2010) recommend using the “STOPS FIRE” mnemonic, which is used in primary care clinical settings to evaluate risky suicidal behaviors.

- Suicide ideation (thoughts of suicide with SI)
- Types (cutting, burning, ripping, re-cutting, punching self...)
- Onset of SI (When is a specific type of NSSI used and for how long)
- Place/location on the body and/or within the environment (Where on the body does one use NSSI? Does one ever use the same spot on the body? Is there a specific environmental location preferred?)
- Severity and extent of damage to body (any bleeding, bruising, or scarring?)

Have there been any hospitalizations for one or more specific types of NSSI behavior? How is the wound handled after the specific behavior?)

- Functions (What does the specific behavior do for a person and how does one feel before and after implementing the behavior?)
- Intensity of SI urges (How strong are the urges 1-10? Have the urges been greater than the initial cut?)
- Repetition (How many times is NSSI used in a day/month/year?)
- Episodic frequency of SI (How many times a day or a week is a specific NSSI used?)
- Other behaviors involved in NSSI (smoking, alcohol/ drug use)

### **Environmental Assessment**

Adolescents may manage their distress using behaviors of NSSI; which can be due to a long-term response to low self-esteem, anger, isolation, grief, or traumatic life experiences. Research suggests that the environment contributes to NSSI and increases the risk of self-injury (Whitlock, 2009). Environmental indicators for NSSI are classified under three categories: economics, physical setting and services. “Economics” is a branch of knowledge that concerns the transfer of wealth and the conditions of groups in regard to their material prosperity (Merriam Webster). An individual’s physical setting is determined by their “Socioeconomic status” which is the social class (poor, middle class or wealthy) of an individual (Merriam Webster). The physical setting also determines the services received within these settings. These statuses affect the way an

adolescent perceives their social and academic status and labels the individual for emotional distress. Risks within the environment are:

- School based popularity (circle of friends)
- Parent-child involvement (in school and at home)
- Poor problem solving skills at home and school
- Clothes that they should wear (brand name items...)
- Home (own or rent)
- Car (cool car)
- Substance abuse/smoking (peer pressure)
- Domestic abuse (home)
- Child abuse (family or relative, close family friend)
- Academic achievement or failure (school, sports, clubs)
- Nutrition (based on body image)
- Media promoted body image provides influences on an adolescent's perception of ideal body image (celebrity and models), how he or she should act (like a jerk, rock star...)

Each one of these environmental situations can increase the risk for an adolescent's impulsivity to use NSSI coping mechanisms. The impulse can be controlled by identifying and changing the environmental situations that trigger the use of NSSI.

### **Intention and Method**

The relationship between self-injury and suicide according to Kerr et al. (2010) is differentiated by the intent, method, and psychological impact. Intent refers to the

intention of the behavior to reduce the negative affect; self-injurers do not intend to cause death while engaging in SI nor do they intend for the behavior to cause or result in death. The purpose of these NSSI behaviors is to preserve life, which is a difficult concept for professionals to comprehend. Each act of NSSI behavior should be evaluated on an individual basis to determine the intention and motivation behind each act (National Collaborating Centre for Mental Health, 2004).

Literature states that there “are a limited number of different methods used in suicide attempts and completed suicide. Self-inflicted gunshots, hanging, overdose...are attributed to approximately 87%-98.6% of the deaths that result in suicide, whereas cutting accounts for only approximately 1.4%-2% of these deaths” (Kerr et al., 2010). Methods for SI vary from individual to individual; the methods for SI are attributed to the psychosocial circumstances like the sensation produced by each method. The psychosocial impact also separates NSSI from suicide because NSSI alleviates the negative emotion and increases the positive effect, whereas with non-lethal suicide attempts worsen the depressive state due to disappointment that death was not the result (Kerr et al., 2010).

### **Psychological Characteristics**

Psychological characteristics are an important aspect in differentiating NSSI from suicide. This portion of the literature review is complicated because NSSI and suicide share some of the same psychological characteristics. According to Anderson et al. (2004), self-injuries among adolescents are perceived as rational responses to life events and circumstances when faced with emotional distress, which becomes part of a person’s

self-image. Self-injury is seen through a medical lens and categorized as mental health problems and illness.

Research by Skegg (2005), Beautrais (2000), and Cleaver (2007), reveals that depression, personality disorders, and trauma are well-known comorbidities within the psychological characteristics of both NSSI and suicide. The following comorbidities are characteristics that cause:

- Increase in impulsivity to SI (rage toward self and others, feelings of abandonment, guilt, and desperation)
- Poor problem solving, which can lead to inflexible thinking, and hopelessness, and the inability to recall general memory instead of recalling specific events
- Decreased self-esteem
- External locus of control
- Introversion
- Neuroticism
- Recklessness
- Aggression
- Passiveness

These character traits are of interest in the relationship of NSSI and suicide; however, research is limited to NSSI and the above traits, whereas within suicide, there is evidence, not yet developed due to 1) self-reporting characteristic could be contaminated by the individual's current state 2) personality factors of adolescents are difficult to differentiate between behaviors which characterize mental disorders and those which are emerging personality characteristics (Beautrais, 2000).

Sexual orientation is also seen as a psychological characteristic of both NSSI and suicide. Skegg (2005) states within her research that “gay, lesbian, or bisexual orientations are more likely to SH than are heterosexuals...[and being a certain sexual orientation and self-harming] could not be attributed to their greater exposure to a wide range of risk factors including depressed mood, substance abuse, pubertal timing and atypical sex roles” (p.1475). Skegg (2005) goes on to state that SI among gay, lesbian, or bisexual orientations occurs after the individual announces that he or she is not exclusively heterosexual. Cash and Bridge’s 2009 research indicates that individuals with gay, lesbian, or bisexual sexual orientations are at a higher risk for attempted suicide than their peers. Also noted in their research is that this risk continues even when controlling for other suicidal risk factors like depression, alcohol and drug abuse, and family history.

Trauma is another psychological aspect of both NSSI and suicide, which is defined as experiences that produce psychological injury or pain (Merriam Webster). Adolescents who participate in NSSI may be using this coping mechanism as way to turn off the trauma that has occurred physically and/or emotionally. NSSI is a coping mechanism to deal with flashbacks, emotions (feelings) and the general content of the underlying trauma (Young, 2011). Traumas that an adolescent may have experienced could be, but are not limited to sexual and physical abuse, electronic bullying, rape, dating violence, witnessing a violent crime or brutal murder, and or vehicle accidents.

### **Detection of NSSI: A Private and Silent Behavior**

Self-injury in private is not primarily to anatomically rearrange the physical body, but to effuse blood to bring relief to distress. The purpose of the types of NSSI is not generally considered attractive by the individual and these injuries are not shared with

others. Studies throughout the literature identify injuries to the body to be anywhere from head to toe. The most common areas used by individuals for SI can be on the hands, wrists, stomach and thighs. Literature states that detecting SI is important for intervention of the behavior, which “can be difficult since the practice is often secretive and involves body parts which are relatively easy to hide” (Cornell University, 2011). Detection of unexplained cuts, burns, scars and clusters of similar wounds on an adolescent’s arms, fists and forearm are common physical signs of SI. Other signs for detection according to Cornell University include:

inappropriate dress for season (consistently wearing long sleeves or pants in summer), constant use of wrist bands / coverings, unwillingness to participate in events / activities which require less body coverage (such as swimming or gym class), frequent bandages, odd / unexplainable paraphernalia (e.g. razor blades or other implements which could be used to cut or pound), and heightened signs of depression or anxiety. When asked, individuals who self-injure may offer stories which seem implausible or which may explain one, but not all, physical indicators such as "It happened while I was playing with my kitten" (p.1).

These are classic signs of adolescents hiding something that may be damaging to their physical body and/or mental emotional states. Wounds are not the only private and silent aspects of this behavior; feelings accompanying SI such as shame may prevent adolescents from seeking treatment and help (Cornell University, 2011). The shame that arises from these injuries are very private and self-injurers keep this shame silent and to themselves.



## Cultural Practices of Self-Injury

In some cultures (tribes), NSSI is viewed as rite of passage, and for healing the spirit; NSSI can also represent the social status of individuals within a particular culture. For instance, a shaman in many tribes must endure painful NSSI to gain unique capacities for healing himself or herself and others (Timofeyev, Sharff, Burns, & Outterson, 2002). Research by Favazza (1992) examines the cultural implications of self-harm, which he explains that:

Beliefs, attitudes, practices, and images diffuse across latitudes and longitudes and centuries. Our perceptions of self-mutilation as grotesque or beautiful, heroic or cowardly, awesome or pitiful, meaningful or senseless derive in great part from the perceptions of those who have lived before us (p.3).

Further into Favazza's research, he addresses socially sanctioned cultural forms of self-injury/harm/mutilation within cultures. He brings attention to adolescent initiation rites, in which adolescents undergo painful NSSI, as a rite of passage and journey into adulthood. These are ritual types of NSSI hold cultural history for communities who perceive these NSSI traditions as norms. Research by anthropologists explains that these types of NSSI are ritual practices and should be considered body modifications; not NSSI because these modifications are socially accepted as traditional ritual markings. These body modification (NSSI) practices not only provide the community culture with decreased risk for angry Gods and diseases, but also to maintain social order within the community. Anthropologists suggest that these NSSI do not qualify as deviance or pathological self-mutilation. The motivating factors are what separate the ritual NSSI and the intentional NSSI (Timofeyev et al., 2002).

## **Limitations/Gaps of Knowledge**

Research within NSSI among adolescents has examined many aspects of the health behavior, yet the literature shows that there are several limitations in the area of NSSI. The major limitation to NSSI is that this health behavior problem is under reported, misdiagnosed, and ignored by adolescents, parents and clinicians. According to Whitlock (2009), the actual increase in prevalence rates of NSSI will continue to be unknown since the rates of self-injurious behavior were hardly tracked prior to the late 1990s and early 2000s. In addition to limitations of prevalence rates there are also limitations in the literature among the general demographics of a self-injurer. Skegg's (2005) research supports the fact that the demographic profile consists of any age ranging from childhood to late adulthood, any gender or sexual orientation, any socioeconomic status, race, culture and/or ethnicity. This creates the support Whitlock's (2009) concept that there is not one single profile that identifies a self-injurer (Whitlock, 2009).

As mentioned in this research analysis, NSSI is a multifaceted term. The literature defines NSSI broadly from various definition sources. The lack of a standard definition for NSSI may inhibit researchers from differentiating NSSI and suicide. Without a standardized operational definition within every research study, results and statistics throughout the literature are difficult to pool and analyze, much less formulate conclusions across the limited research.

Research of NSSI has been pulled from various disciplines in health and mental health fields with the aim of these studies primarily based in clinical institutions or facilities, juvenile facilities, and few school-based environments. It is difficult to fully

understand the magnitude of NSSI without knowing basic elements behind the intention of each individual studied in these varying environments.

Greydanus et al. (2009) did a general search for their research in November of 2008 within the PsycINFO database using the key word “self-cutting.” Their results showed 103 citations; the same database search done in September 2011 now shows 119 citations, yet when one limits the search using adolescents ages’ 12 to 17, human subjects, English language, and the publication dates from 2005 to 2011, the citations reduce to 23. Within these 23 citations, the major area being studied around self-cutting is in clinical or institutional care, foster care, and juvenile facilities; there are few studies conducted within a school-based environment. This leads to the conclusion that studies in school-based environments in the realm of NSSI are being understudied. Researchers Muehlenkamp et al. (2010) state in their research that “primary prevention in schools is essential...because adolescents spend a significant amount of their life at school.”

### **Conclusions Drawn From Literature Review**

The scholarly literature in this exploratory analysis indicates that researchers and federal agencies like the CDC are making progress towards defining and separating NSSI from suicide. The varying prevalence rates from scholarly studies show that this behavioral problem is tremendously understudied, which makes it difficult to identify whether this behavior should be categorized as a “priority health risk.” The six research studies reveal that specific “isolated” populations have some sort of prevalence; however these studies do not compare the “isolated” population to the general population.

Without having this comparison, it is difficult to express whether these populations are at a greater risk than the general adolescent population in school-based environments.

The literature will have a difficult time articulating possible programs and interventions unless diagnostic criterion for NSSI is established. There are several informational websites on the World Wide Web (WWW) for NSSI along with therapists and psychologists who may specialize in self-injury; however there is only one inpatient program in the nation that focuses on NSSI.

The context of NSSI is well documented, yet it is always linked to suicidal characteristics and associated with BPD for diagnostic purposes. However, scholarly research studies of NSSI briefly address quality of life and social indicators among school-based adolescents, as these studies primarily focus on prevalence, possible motivational factors and cause. The behavioral and environmental assessment of NSSI indicates that there are several motivational factors among adolescents who participate in NSSI. The multiple motivational factors also indicate that this behavioral health problem is complex and the complexity is shared with suicide. Research examined for this exploratory analysis used the intention of the acts as the key to separating NSSI from suicide. Experts in the field of NSSI all indicate that the intention of NSSI is to preserve life, whereas suicide is to end it, which clearly separates the outcomes of each action. Also the methods of NSSI are less likely to cause suicide because cutting only accounts for less than 2% of all suicides.

Another avenue explored in the literature review to separate NSSI and suicide is the psychological characteristics. Within these characteristics there are several co-morbidities associated with both NSSI and suicide. Sexual orientation and trauma are the

common associated psychological characteristics of NSSI because these coping mechanisms allow the individual to turn off the distress. However, experts will never truly know the magnitude of this behavioral health problem because acts of NSSI are extremely private, silent, and under reported. Adolescents who participate in NSSI generally hide their SI because they are shameful of what they are doing to their bodies, but also because these cuts or burns are not social norms. On the other hand, in tribal cultures these injuries are seen as cultural norms for adolescents to journey into adulthood or for shamans to develop the ability to heal others.

Overall NSSI represents a distinctive and growing behavioral health problem. Resolution of this behavior will be hindered until a standardized diagnostic criterion is published by the APA. Also, research studies with standardized methodologies need to be implemented in order to find the true prevalence. The lack of treatments and/or prevention programs focused primarily on NSSI also makes it difficult to treat individuals who use these behaviors and challenging to prevent individuals from seriously damaging their bodies. Results show that health care professionals are aware of the signs of NSSI. However, educational professionals and peers desperately need to have education and training about the signs of NSSI (Muehlenkamp et al., 2010).

## CHAPTER THREE: METHODS

This exploratory analysis uses secondary data from several state health departments and departments of education data bases to address the phenomenon of NSSI among adolescents in school-based settings. The researcher examined all Youth Risk Behavior Surveys (YRBS) from 1991 to 2011 (See Appendix A for detailed participation for each state). As a result, the YRBS for Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont from 2003 to 2011 were found to be important to this exploratory analysis as they show evidence of asking an NSSI question in their state questionnaires. Through the examination of these questionnaires, prevalence and frequency rates of NSSI are addressed and compared to the scholarly research prevalence in Chapter Two.

### Nature of Secondary Data

This exploratory analysis uses data from the high school version of the national YRBS questionnaire. The YRBS data collection methodology included ninth, tenth, eleventh and twelfth grade students (14 to 18 years of age) from the states of Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey, and Vermont. The YRBS is based on a two-stage cluster probability sample design. First, a random sample of public high schools is selected for participation in the survey. Second, within each selected school, a random sample of classrooms is selected, and all students in those classes are invited to participate in the survey. Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont all

achieved a  $\geq 60\%$  response rate from 2003 to 2011, in which the responses are weighted (only if  $\geq 60\%$ ) and representative of all students in these states (CDC, 2004).

Adolescents between the ages of 14 and 18 were selected because this is a time of transition when life is unclear, confusing, stressful, and filled with various pressures from one's environment, parents, and peers (Anderson et al., 2004).

### **Instrumentation**

The Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Surveillance System (YRBSS) monitors "priority risk behaviors" among high school adolescents using the YRBS questionnaire. The YRBS questionnaire was developed by the CDC for prevention programming and evaluation purposes. The national high school version of the YRBS is used in Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey, and Vermont by state health and education departments to monitor priority risk behaviors. The YRBS is a school-based classroom survey of risk behaviors self-reported by high school adolescents. It is designed to track and monitor "priority health risk behaviors" contributing to the leading causes of disability, social problems, and death among youths in the United States. Six "priority health-risk behavior" categories monitored within the YRBSS include:

- Tobacco use
- Unhealthy dietary behaviors
- Inadequate physical activity
- Alcohol and other drug use
- Behaviors associated with sexual risk

- Behaviors contributing to unintentional injuries or violence

The purpose of the YRBSS is to determine prevalence of the “priority health-risk behaviors” and whether these behaviors are increasing or decreasing, to examine if there are co-occurrences of health risk behaviors, to provide national, state, territorial, tribal and local data that is comparable among multiple subpopulations of youth, and to track the progress of achieving federal Healthy People objectives. The main components of the YRBSS include national, state, territorial, tribal and local school-based surveys conducted in odd numbered years, representing a student sample ranging from grades 9<sup>th</sup> through 12 (CDC, 2011).

The National survey from 2003 to 2011 consists of an average of 97 multiple-choice questions on the questionnaire; it was modified by Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont to include the following NSSI question: “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?”

### **Research Approach**

The results from the “priority health-risk behavior” categories on the YRBS questionnaire are provided by the CDC on its interactive database. The researcher extensively examined the CDC’s YRBS databases for information pertaining to NSSI SI, SH, DSH, DSV, SIV and cutting that was asked on the national YRBS questionnaire. Based on this study’s methodology, the CDC’s website did not reveal any evidence that a question pertaining to SI without the intention to die (NSSI) was asked.



Moya's, research in 2007 in the field of SI among early adolescents served as a breakthrough article that ignited the idea to examine all YRBS data from 1991 to 2011 for questions pertaining to SI without the intention to die (NSSI). Moya (2007) used Florida's 2005 YRBS questionnaire for middle school students which contains the following questions:

The next 3 questions ask about self-harm (cutting, scratching, burning, not allowing wounds to heal, pinching). Sometimes people who feel upset hurt themselves on purpose as a way to feel better (less upset).

35. Have you ever hurt yourself on purpose (cutting, scratching, burning, not allowing wounds to heal, pinching)?

- A. Yes
- B. No

36. During the past month, how often have you hurt yourself on purpose (cutting, scratching, burning, not allowing wounds to heal, pinching)?

- A. Never
- B. 1 time
- C. 2 or 3 different times
- D. 4 or 5 different times
- E. 6 or more different times

37. Have any of your friends hurt themselves on purpose (cutting, scratching, burning, not allowing wounds to heal, pinching)?

- A. Yes
- B. No

However, before attempting to examine all YRBS questionnaires, the researcher examined Florida's State Department of Health and Department of Education websites to uncover any questions on the high school YRBS questionnaire that pertain to SI without wanting to die (NSSI). Examination of the survey instruments and reports uncovered that the following question was asked on the 2007, 2009, and 2011 high school YRBS questionnaires:

During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or more

Discovering the addition of this question to the Florida YRBS served as evidence that state and local YRBS surveys could be asking the stated question above, yet the CDC doesn't publish this data in their findings. Sorting through approximately 450 YRBS questionnaires from 1991 to 2011 in each of the participating states department of education and/or department of health for results (See Appendix A) uncovered seven states, Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont, that ask at least one question pertaining to SI without wanting to die (NSSI).

### **Measures of NSSI**

The methodology of measuring the behavior of SI without wanting to die (NSSI) in particular YRBS questionnaires from Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont are assessed by addition of the following question:

During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or more

In order to establish prevalence and frequencies of SI without wanting to die (NSSI) behavior, the above stated targeted question was added to identify adolescent youths in

high school environments who participated in one or more NSSI acts 12 months prior to the administration date of the particular YRBS questionnaire. This question is designed to identify youths at risk for SI without wanting to die (NSSI) and any other factors that may contribute to prevalence and frequency such as gender, age, grade, and race or ethnicity. The researcher used this method of measurement to compare prevalence percentages among the six states that ask the targeted question.

### **Data Collection**

The methodology used to collect data for the YRBS is similar across Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont. Each state opted to have the questionnaires sent to the school, and the teachers in the selected classes administered the survey to their class using a standardized script. Then the school sends out the completed questionnaires and accompanying documentation back to the state and/or local agency conducting the survey (CDC, 2004).

The researcher used several methods to collect the YRBS questionnaires, results, and general information about the YRBS in each particular state. The researcher used the internet to track down information on the targeted question in Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont. The departments of health and education from certain states publish particular years of YRBS questionnaires and results on their websites. The researcher needed several questionnaires and results summaries from several of the above states that were not available online. Therefore, the researcher contacted and established communication with each state's youth survey coordinator or director through emails and telephone calls. Communicating with these individuals gave

the researcher access to blank YRBS questionnaires (for specific years) and result data sets that have not been posted to these states website. Communication also established the opportunity to ask additional questions regarding why these states added the targeted question to the questionnaire and what programs and/or interventions have been made from the results of the questionnaire.

### **Protection of Human Participants**

The CDC's Morbidity and Mortality Weekly Report published the Methodology of the Youth Risk Behavior Surveillance System in 2004, which states the general procedural information pertaining to the YRBS. This document states that the "Local procedures for obtaining parental permission are followed before administering YRBS in any school. Certain schools use active permission, in which parents must send back to the school a signed form indicating their approval before their child can participate. Other schools use passive permission, in which parents send back a signed form only if they do not want their child to participate in the survey" (CDC, 2004, p.8). Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont all followed local parental permission procedures in place by each states' individual school district. Survey administrators also followed strict procedures to safeguard students' privacy and anonymity (See to Appendix C).

### **Data Analysis**

The researcher utilized organizational methodologies to analyze Arizona, Florida, Maine, Massachusetts, Ohio, New Jersey and Vermont's YRBS questionnaires and

results into matrices within an excel workbook. The purpose of these matrices were to organize the parameters of the YRBS survey with the targeted question, but also to show that these are the only seven states that ask the targeted question on the YRBS. The organization of the matrix in Appendix C is read from left to right starting with the state and the following categories: targeted question (within each year that the question was asked), the frequency of how often the survey is done, unit of analysis, sample size, accessible population, instrumentation and data collection, and protection of human rights (See Appendix C). The second matrix in Appendix D is organized based around the results of the YRBS. This matrix shows the results of the targeted question from each state and the year that it was asked and organized by the state and results in each column are organized by year (e.g. 2003, 2005, 2007, 2009, and 2011). Some of the results are shown in one column where the results are clustered to show trend (See Appendix D). All the results are shown with diagrams, charts, figures and tables taken from each state's result summary or codebook. The CDC (2004) states:

State and local surveys that have a scientifically selected sample, appropriate documentation, and an overall response rate >60% are weighted. The overall response rate reflects the school response rate multiplied by the student response rate. These three criteria are used to ensure that the data from those surveys can be considered representative of students in grades 9–12 in that jurisdiction. A weight is applied to each record to adjust for student nonresponse and the distribution of students by grade, sex, and race/ethnicity in each jurisdiction. Therefore, weighted estimates are representative of all students in grades 9–12 attending schools in each jurisdiction. Surveys that do not have an overall response rate of >60% and

appropriate documentation are not weighted. Unweighted data represent only the students participating in the survey (p.7).

The participation history and data quality matrix (See Appendix A) shows weighted and unweighted data from 1991 to 2009. Arizona, Florida, Massachusetts, Maine, Ohio and Vermont all had weighted data in specific years from 2003 to 2009. New Jersey asks the following SI question in 2007: “During the past 12 months, did you purposely injure yourself by using a sharp object to scratch or cut your skin deep enough to draw blood?” A yes or no response was included. The New Jersey response rate in 2007 was < 60%, meaning the data was unweighted and only representative of the individuals who participated in the survey. The data from New Jersey will not be used to show prevalence or frequency, but will be utilized to show that an SI question has been asked. The results from Arizona, Florida, Massachusetts, Maine, Ohio and Vermont are analyzed by state in Chapter Four of this exploratory analysis.

### **Limitations and Ethical Considerations of the Study**

The YRBSS has a number of limitations. First, the YRBS is self-reported data and cannot determine the extent of over and under reporting. Second, the national, state, and local school-based survey data apply only to youth who attend school and therefore are not representative of all persons in this age group (CDC, 2004). Nationwide, approximately 2.7% to 3.4% of students aged 16–17 had dropped out of high school between 2005 and 2009 (US Census Bureau, 2012). Third, the local procedures in place for parental permission are not consistent across the sites (states). The CDC did conduct a study in 2004 that established that the type of parental permission did not affect the

prevalence rates (CDC, 2004). Fourth, not all states participate; therefore data is not available from all 50 states. Fifth, if response rates are  $\leq 60\%$  then the data is not weighted and state and local data only represent individuals who took the questionnaire and are not generalized. Finally, the YRBS only addresses the priority risk behaviors that cause morbidity and mortality among adolescents (CDC, 2004).

The data collected within the analysis of this exploratory thesis is primarily from public online state level databases. Since these databases are open and accessible to the public, this research does not pose any ethical considerations for risks and/or harm to participants in the data utilized for this research.

## CHAPTER 4: DISCUSSION

Analysis of the targeted question, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” not only aids in establishing estimates of prevalence and frequency rates by state, but also tracks frequency rates by gender and establishes trends in NSSI behavior.

### Analysis of YRBS Results by State

The above targeted question is worded similarly in six states (Arizona, Florida, Maine, Massachusetts, Ohio and Vermont), except for New Jersey. The YRBS questionnaires in these six states also have varying answers (See Appendix B). These questions were found in different sections of each states YRBS questionnaire, such as within the suicide and self-injury, violence related behavior, deliberate self-harm, and/or personal safety sections. The result summaries from each state also report their finding in different formats, such as charts, tables, and graphs (See Appendix D).

#### Arizona

Arizona’s Department of Education’s School Safety and Prevention Division publishes YRBS summary reports and questionnaires from 2003 to 2009 on its website which is accessible to the public. Arizona has participated in the YRBS since 1991, from 1991 to 1995 there was unweighted participation, no participation from 1997 to



2001, and weighted participation from 2003 to 2009 (See Appendix A). The targeted question, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” was first asked on Arizona’s YRBS in 2007 and asked again in 2009.

Arizona’s 2007 high school YRBS questionnaire was given to 3,095 students. Of these students, 3,072 students responded to the targeted question stated above. The summary report shows detailed total percentages by age, gender, race or ethnicity and grade regarding the “percentage of students who did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months.” The questionnaire shows the targeted question asked as question number 27, but in the result summary, this question is referred to as question number 94. The result table estimates that 20.8% of all students who attend high school in Arizona participated in one or more NSSI acts in 2007 and of these students females (26.1%) were more likely than males (15.8%) to report NSSI (See Appendix D).

In 2009, 2,596 students participated in the YRBS and of these 2,364 students responded to the targeted question. In the questionnaire, the targeted question is asked as number 34. In the general result summary this question is referred to as question number 97, which shows percentages for the total number of times an NSSI act occurred in the past 12 months. In order to get the total number of individuals who did something to purposely hurt themselves without wanting to die the (NSSI), the researcher computed all total percentages for each possible outcome answer (1 to 6 or more times) and divided this by the number of possible answers. The N totals were also computed for each possible outcome answer (1 to 6 or more times) and divided by the possible answer. The

results of these computations estimates that 19% to 21.8% of all students in Arizona participated in NSSI behavior, with females (26.5%) more likely to report NSSI behavior than males (15.1%) (See Appendix D).

The estimated average prevalence from 2007 to 2009 in the state of Arizona among students who “did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times” is computed simply by adding the total percentage of prevalence for 2007 and 2009 and divided by possible outcome answers resulting in an approximation of 20.6% (with a standard deviation of 0.199) of students from 2007 to 2009 who participated in NSSI behaviors; females frequently reporting NSSI behavior more than males.

## **Florida**

The Florida Department of Education’s website links YRBS data and information to the Florida Department of Health’s Division of Disease Control website, which contains links to the survey instruments and reports from 2001 to 2011, which is accessible to the public. Florida has participated in the YRBS since 1991, with unweighted participation from 1991 to 1993, no participation in 1995, unweighted participation from 1997 to 1999 and weighted participation from 2001 to 2011 (See Appendix A). Florida started asking, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” in 2007 and continued on both the 2009 and 2011 YRBS.

Florida's 2007 YRBS high school questionnaire surveyed 4,523 students; the results are represented by a bar graph showing the overall total and totals by gender. The results estimate that

96,800 students (13.7%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. Females (17.2%) were more likely than males (10.1%) to purposely hurt themselves (Florida Department of Health, 2007, p.1).

The 2009 high school YRBS questionnaire surveyed 4,523 students and results are shown in a line graph showing overall totals for 2007 to 2009 and overall totals by gender from 2007 to 2009. The results estimate that:

106,730 students (13.9%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. Females (16.9%) were more likely than males (10.8%) to purposely hurt themselves (Florida Department of Health, 2009, p.1).

The 2011 high school YRBS questionnaire surveyed 6,212 students and results are shown in a line graph by overall totals by year from 2007 to 2011 and overall totals by gender from 2007 to 2011. The results estimate that:

100,700 students (12.8%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. Females (16.9%) were more likely than males (8.8%) to purposely hurt themselves (Florida Department of Health, 2011, p.1).

The estimated overall prevalence, which is representative of all adolescent students in Florida from 2007 to 2011 who reported SI without wanting to die (NSSI) from 2007 to

2011 is approximately 13.5% (with a standard deviation of 0.47). The result summary states that “from 2007 to 2011 there was not a significant change in prevalence of this behavior. Females consistently had a significantly higher prevalence of this behavior than males” (Florida Department of Health, 2011, p.1).

## **Maine**

The Departments of Education and Health and Human Services publish the YRBS information on their website and accessible to the public. Maine has participated in the YRBS since 1993 with unweighted data, from 1995 to 1997 the data was weighted, in 1999 there was unweighted participation, and from 2001 to 2009 the data was weighted (See Appendix A). The YRBS Maine has asked the question, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” in their 2005 and 2007 YRBS questionnaire.

Maine’s 2005 high school YRBS questionnaire surveyed 1,375 students. The results are shown in a pie chart for the percentage of high school students who have purposely hurt themselves without wanting to die in the 12 months prior to the survey (See Appendix D). The 2005 Maine YRBS results estimate that:

One in five high school students (20 percent) reported that they had purposely hurt themselves without wanting to die...female high school students (25 percent) were more likely to report this behavior than male high school students (15 percent) (p.16).

The 2007 high school YRBS questionnaire surveyed 1,324 students. The prevalence findings for the 2007 YRBS are represented in a pie chart (See Appendix D) which states that:

Two in ten (21%) high school students reported that in the past 12 months they did something to purposely hurt themselves without wanting to die... female high school students (27%) were significantly more likely than male high school students (15%) to report cutting/ burning behavior (Maine Department of Education and Department, 2007, p.2).

The overall average prevalence of NSSI behavior in Maine between 2005 and 2007 among adolescents who did something to purposely to hurt themselves without wanting to die (NSSI) is approximately 20.5% (with a standard deviation of 0.5). Females also had a significantly higher prevalence of NSSI behavior than males from 2005 to 2007. These percentages are representative of all Maine high school students between 2005 and 2007.

### **Massachusetts**

The Massachusetts Elementary and Secondary Education Department publishes YRBS information on their website and accessible to the public. Massachusetts has been participating in the YRBS since 1993, with weighted from 1993 to 2011 (See Appendix A). Massachusetts has been asking, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” on its YRBS from 2003 to 2011. Results for 2003 to 2009 are shown in a bar graph, which is combined to show trends which estimate prevalence

rates as 17.8% (with a standard deviation of 0.83) from 2003 to 2009 (See Appendix C for sample size from 2003 to 2009 Appendix D for result table) (Massachusetts Elementary and Secondary Education, 2009). The results for the recently conducted 2011 YRBS questionnaire are pending; and according to the website and confirmed by the Massachusetts School Health Analysis, the results will not be published and/or available to the public until mid-2012 (Massachusetts Elementary and Secondary Education, 2011).

## **Ohio**

The Ohio Department of Health publishes YRBS information on its website, which is accessible to the public. Ohio has participated in the YRBS since 1993 with weighted data, in 1995 the data was unweighted, from 1997 to 1999 data was weighted, with non-participation in 2001, weighted participation from 2003 to 2007, unweighted participation in 2009, and weighted participation in 2011 (See Appendix A). Ohio has asked the question, “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” in 2005, 2007, and 2011. Ohio combines results from 2005 and 2007 on a bar graph that shows total prevalence by gender, grade and race.

Ohio surveyed 1,411 high school students in 2005; the results estimate that 19.1% of high school students in Ohio participated in purposely hurting themselves without the intention to die (NSSI). Females (23.4%) had a considerably higher rate of NSSI behavior than males (15.1%) (See Appendix D). In 2007, the YRBS was given to 2,527 students. The results for 2007 estimate that the majority of students do not intentionally SI; “17% of students reported purposely hurting themselves without wanting to die.

Females (22.1%) were significantly more likely than males (11.9%) to purposely hurt themselves without wanting to die” (Ohio Department of Health, 2007). Also stated in the 2007 results: “there were not significant differences by grade level or race... no significant differences in the percentage of students who hurt themselves between 2005 and 2007” (See Appendix D) (Ohio Department of Health, 2007). The 2011 Ohio high school YRBS questionnaire surveyed 1,442 students. The estimated prevalence findings for 2011 are documented in a detailed table by total percentage, gender, age, grade, and race or ethnicity (See Appendix D). The table estimates that 16.5% of all students in Ohio participated in NSSI behaviors and of this approximation, females (20.4%) were more likely to report NSSI behavior than males (12.9%) (Ohio Department of Health, 2011).

These results are representative of all students from Ohio who participated in NSSI behavior from 2005 to 2007 and in 2011. Unfortunately, data was not weighted in 2009, which creates a two year window of unknown prevalence and frequency rates. The estimated prevalence rates from 2005 to 2007 are 18.1% (with a standard deviation of 1.05) and in 2011, prevalence is estimated at 16.5%, with females consistently more likely than males to report that they have participated in NSSI behavior.

## **Vermont**

The Vermont Department of Health publishes YRBS information on its website, which is accessible to the public. Vermont has participated in the YRBS since 1993 with weighted results from 1993 to 2011 (See Appendix A). Vermont has asked the targeted question, “During the past 12 months, how many times did you do something to

purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” from 2007 to 2011.

Vermont’s 2007 high school YRBS questionnaire was given to 8,453 students. The summary report shows total percentages in a table by gender and grade regarding the “percentage of students who did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months?” The results are shown in a table, which estimates that 15% of all students who attend high school in Vermont participated in one or more NSSI acts in 2007 and of these students’ females (21%) were more likely than males (10%) to report NSSI (See Appendix D) (Vermont Department of Health, 2007). In 2009, 11,427 students participated in the Vermont YRBS; the table estimates that 15% of all students who attend high school in Vermont participated in one or more NSSI acts in 2009, and of these students, females (21%) were more likely than males (9%) to report NSSI (See Appendix D) (Vermont Department of Health, 2009). In 2011 8,654 students participated in the Vermont YRBS, which is documented in a graph describing gender, year, and overall totals. The results graph estimates that 13% of all students who attend high school in Vermont participated in one or more NSSI acts in 2011, and of these students, females (18%) were more likely than males (8%) to report NSSI (See Appendix D) (Vermont Department of Health, 2011).

The average estimated overall prevalence of NSSI behavior in Vermont between 2007 and 2011 among adolescents who did something to purposely to hurt themselves without wanting to die (NSSI) is approximately 14.3% (with a standard deviation of 0.94). Females also had a significantly higher prevalence of NSSI behavior than males



from 2007-2011. These percentages are representative of all Vermont high school students between 2007 and 2011.

## **New Jersey**

The New Jersey Department of Education publishes YRBS information on its website, which is accessible to the public. New Jersey has participated in the YRBS since 1991, with unweighted participation from 1991 to 1993, weighted participation in 1995, unweighted participation from 1997 to 1999, weighted participation in 2001, unweighted participation in 2003, weighted participation in 2005, unweighted participation in 2007, and weighted participation in 2009 (See Appendix A). New Jersey does not ask the targeted question, but asked in 2007, “During the past 12 months, did you purposely injure yourself by using a sharp object to scratch or cut your skin deep enough to draw blood?” with yes and no answers (New Jersey Department of Education, 2007). This question shows that an SI question is asked on the 2007 New Jersey YRBS. However, this question does not clarify the intention of the act (without wanting to die); therefore New Jersey is not fully analyzed in this analysis. Also, the data for the 2007 YRBS is unweighted and therefore does not represent all students in New Jersey.

### **Efforts to Control NSSI from Results of YRBS**

The researcher explored the following online state level data bases for information pertaining to programs or interventions in school based environments for SI without wanting to die:

- Arizona Department of Education

- Florida Department of Health
- Maine Department of Education and Department of Health and Human Services
- Massachusetts Department of Elementary and Secondary Education
- New Jersey Department of Education
- Ohio Department of Health
- Vermont Department of health

Through these departmental databases, the researcher did not find any indication of interventions or programs being used in these states to target the behavior of SI without wanting to die (NSSI). The researcher communicated through email and phone calls with each of the above states, asking why each state addresses the targeted question, how does each state benefit from asking the targeted question, and are there any programs within each state that have been formed from the targeted question. Regarding the data, each state responded similarly, stating that the use of the data is to increase the understanding of the problem and is included in subsequent surveys to monitor trend changes. Ohio stressed that this data is crucial for assessing mental health services for adolescents, but this behavior problem of SI without wanting to die (NSSI) is tremendously understudied and underfunded. These departmental agencies also stated that there have not been any programs or interventions developed due to the results of the targeted question. Efforts to control SI without wanting to die (NSSI) through standardized programs in school-based environments in these states are non-existent and students are referred to their primary care physician or other clinical facilities (A. Norton, J. Zimmerman, J. Brosseau, C. Milligan, M. Jagger, J. Ajamie, personal communication, February, 2012).

## CHAPTER 5: CONCLUSION AND IMPLICATIONS

This analysis of this exploratory thesis is based upon two purposes: 1) to contribute research knowledge of prevalence and frequency percentages among school-based adolescents' ages 14 to 18 and 2) to identify efforts to control NSSI among adolescents in school-based environments. This analysis primarily focuses on high school populations with NSSI behaviors of cutting and related outer superficial tissue damage. This analysis utilized scholarly journal articles, a national survey instrument (YRBS), and state level data bases to accomplish the above goals.

### Conclusions

Research within SI without the intention to die (NSSI) consistently shows studies relating this behavior to suicide and diagnostically related to BPD. However, to my knowledge, there are no studies within the parameters of this analysis that show a direct relationship to completed suicide. This acknowledges that NSSI is distinctive and researchers are recognizing this behavior as a separate health behavior problem. Also to my knowledge the targeted question has only been asked in Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont. This analysis describes prevalence among adolescents (14 to 18 years old) in school-based environments from “isolated” populations and general adolescent populations.

The researcher concludes from the “isolated” and general population data that the majority of adolescents in school-based environments do not engage in non-suicidal self-

injurious behaviors. These populations also show varying prevalence rates, which leads to the conclusion that NSSI is an understudied health behavioral problem that has been swept under a rug and into the shadows of BPD and suicide. Shaffer et al. (2009) state, “As long as the DSM classifies NSSI only as a symptom of BPD, or as a manifestation of suicidality, researchers will be encouraged to study NSSI only in those contexts, resulting in incomplete or misleading findings” (p.3). The researcher also finds that females do report NSSI more than males as shown by the data. However, males have been understudied with respect to this behavioral problem (Moya, 2007) and may not self-report this behavior because males are viewed as “tough guys”.

Within the “isolated” populations studied in Table 1, prevalence rates are widely dispersed from a mean of 17.8 (with a standard deviation of  $\pm 10.449$ ) estimating a range of approximately 7.5 to 28.2% of adolescents who have participated in NSSI. This dispersion is due to the varying methodologies used to measure NSSI, but also because the selected populations are from different socioeconomic statuses and environmental regions.

The conclusions based on the general population are representative of all adolescents from the six states between 2003 and 2011. The first conclusion within the general population through YRBS result data sets estimate the average prevalence as 17% (with a standard deviation of  $\pm 2.781$ ) meaning that the range of the estimated prevalence is approximately 14.3 to 19.8%. This estimate shows that each percentage is clustered closer to the mean as compared to the “isolated” population studies where they are further dispersed. Secondly, the analysis of the YRBS result data also addresses gender differences. Female adolescents consistently have higher rates of NSSI behavior as

compared to males. Differences in race or ethnicity and age were not examined as this analysis focused mainly on general prevalence and gender frequency, and exposing efforts to control NSSI. The final conclusion drawn from the analysis of the general population is that as of 2012, standardized programs and interventions for NSSI in school based-environments in the six states are non-existent.

Public health experts utilize the national YRBS questionnaires as key benchmarks for prevalence when studying school-based adolescents (Shaffer et al., 2009). The mental health section in the national YRBS questionnaire does not identify NSSI as a priority health risk and therefore does not require the participating states to add questions pertaining to NSSI. However, the researcher found that Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont utilize the targeted question: “During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?” This question is stated very briefly in an attempt to cover multiple aspects that encompass NSSI. This question does not clearly define NSSI, but does attempt to separate NSSI from suicide and mentions only a few methods of SI. These are conclusions drawn from the way the question is stated; however, this question attempts to reveal NSSI prevalence, but only in the six states. On the other hand, until NSSI becomes an actual diagnosis with standardized definitions and criteria, prevalence rates may continue to vary. This national survey instrument (YRBS) from the CDC does provide this analysis with uniform methods of instrumentation, data collection, protection of human participation and adequate response rates to represent all adolescents 14 to 18 years old in school-based environments in each state that asks the targeted question.

## **Implications for Future Research**

NSSI among adolescents in school-based environments is an extremely underfunded and understudied behavioral health problem. Pre-existing literature indicates that there is insufficient research in the field of NSSI, and as the DSM-5 adds NSSI as a separate diagnosis, researchers will be able to truly understand the magnitude of the problem. The following suggestions revolve around various pre-existing research studies. Many highly experienced medical professionals who work with adolescents offer advice based on experience, yet any intervention or prevention program starts with detection. There are limited studies that actually address detection, intervention and treatment strategies, as most studies focus on causes.

A needs assessment for research surveillance of NSSI is necessary for addressing epidemiological indicators (quantitative and qualitative). Quantitative indicators needing to be addressed are not only incidence, prevalence, morbidity, and mortality rates, but also qualitative indicators like awareness of NSSI and accessibility, availability, and affordability of services. This needs assessment is a tool for understanding the functionality and antecedents of NSSI. However, the use of a standardized definition is needed to clarify exactly what NSSI entails. Few studies in the literature use longitudinal designed studies which could offer insights into the developmental trends and predictors of NSSI.

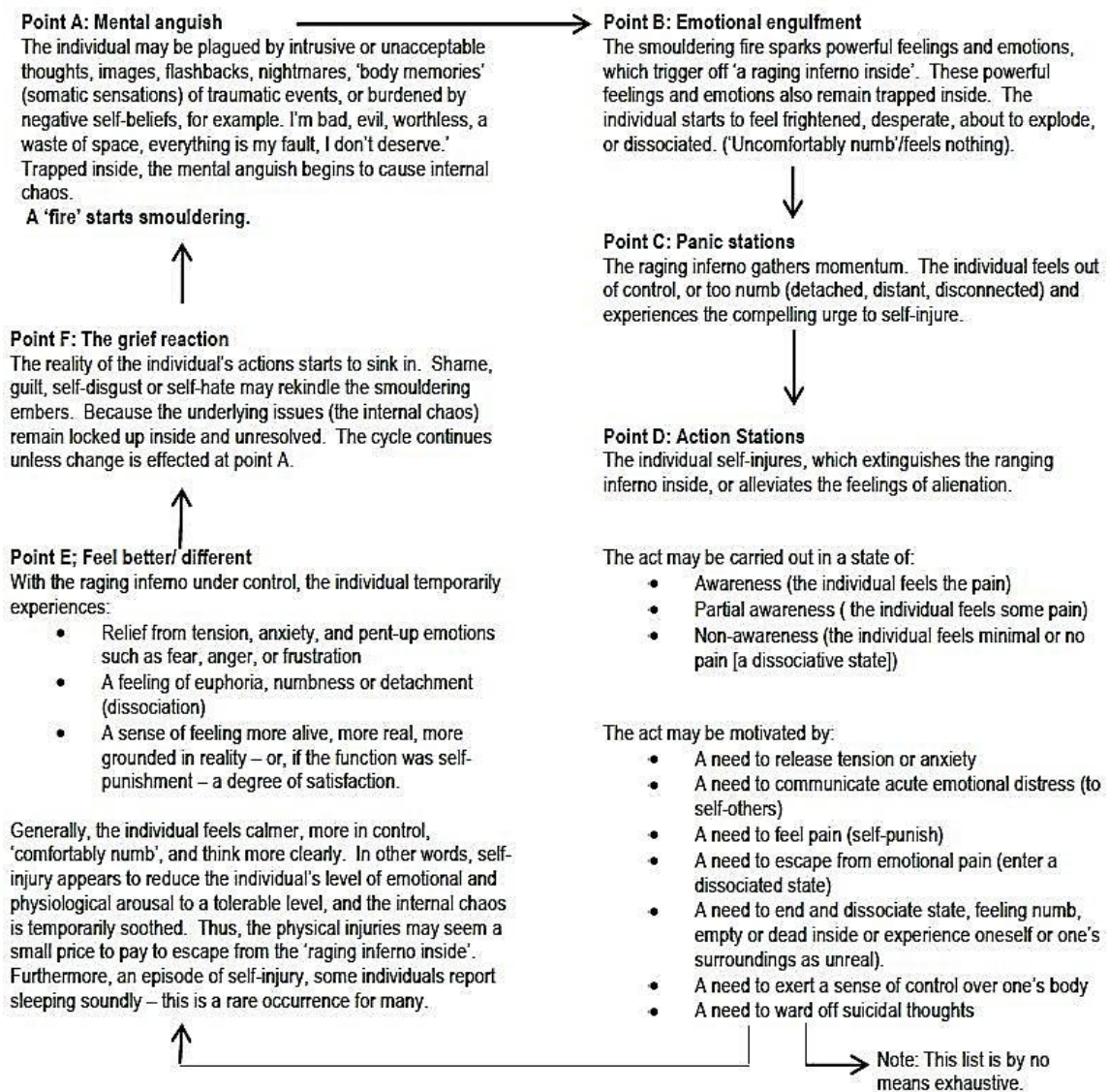
The YRBS is a great start to identifying prevalence among adolescents. Creating a subdivision in the mental health section of the national YRBS that includes questions pertaining to NSSI may help in establishing accurate prevalence rates. Utilizing the national YRBS will aid in differentiating intention and motivation of NSSI and suicide,

which according to Shaffer et al. (2009), could reduce the rate of self-reported suicide attempts in adolescents.

Another avenue for further research is to understand how adolescents in school environments conceptualize the cycle of self-injury, author and counselor Jan Sutton describes this cycle in Figure 3.

**Figure 3**

*The Cycle of Self-Injury*



(Jan Sutton, 2005)

Figure 3 touches on points established in Chapter Two (context and psychological characteristics), researching the points (mental anguish, emotional engulfment, panic station, action stations, feel better/different, and grief reaction) individually will aid in the process of how adolescents feel and to what level he or she understands the cycle.

Standardized intervention and prevention programs are desperately needed for NSSI. This exploratory research analysis does not focus on intervention or prevention programming. However, with the knowledgeable data of prevalence rates from Arizona, Florida, Maine, Massachusetts, Ohio, and Vermont a focus group study of snowballed participants could offer insights into what adolescents who participate in NSSI may need or want for prevention and intervention from a school-based environment. Establishing parental involvement may also provide critical information for launching a social marketing campaign to bring awareness of risk factors of NSSI, identifying NSSI behavior among peers, and informational resources. Detecting NSSI may be the overall challenge for any future studies because these behaviors are silent and private and many adolescents may not report this behavior. The cycle of non-reporting also keeps a researcher busy trying to figure out actual prevalence and frequency rates among this population.



## APPENDICES

**APPENDIX A: High School Youth Risk Behavior Survey, 1991–2009  
Participation History and Data Quality by  
State and Year**

**APPENDIX B: EXTRAPOLATED QUESTIONS FROM VARIOUS YRBS  
QUESTIONNAIRES BY STATE AND YEAR**

**APPENDIX C: YRBS MATRIX**

**APPENDIX D: YRBS RESULTS**

APPENDIX A

HIGH SCHOOL YOUTH RISK BEHAVIOR SURVEY, 1991–2009  
PARTICIPATION HISTORY AND DATA QUALITY BY  
STATE AND YEAR

● Weighted<sup>1</sup> ○ Unweighted<sup>2</sup> -- Did not participate

States	1991	1993	1995	1997	1999	2001	2003	2005	2007	2009
Alabama	●	●	●	●	●	●	●	●	○	●
Alaska	--	--	●	--	●	--	●	○	●	●
Arizona	○	○	○	--	--	--	●	●	●	●
Arkansas	--	○	●	●	●	●	○	●	●	●
California	○	○	○	○	○	--	--	--	--	○
Colorado	○	○	●	○	○	○	○	●	○	●
Connecticut	--	--	○	●	○	--	○	●	●	●
Delaware	--	○	○	○	●	●	●	●	●	●
Florida	○	○	--	○	○	●	●	●	●	●
Georgia	●	●	○	○	○	○	●	●	●	●
Hawaii	○	●	●	●	●	○	○	●	●	●
Idaho	●	●	○	○	○	●	●	●	●	●
Illinois	--	●	●	--	○	○	--	○	●	●
Indiana	--	--	--	--	--	○	●	●	●	●
Iowa	○	○	○	●	○	○	○	●	●	○
Kansas	--	○	○	○	--	○	○	●	●	●
Kentucky	--	○	--	●	○	○	●	●	●	●
Louisiana	--	●	○	●	○	○	○	--	--	●
Maine	--	○	●	●	○	●	●	●	●	●
Maryland	○	--	--	--	--	--	--	●	●	●
Massachusetts	--	●	●	●	●	●	●	●	●	●
Michigan	--	○	○	●	●	●	●	●	●	●
Minnesota	--	--	--	--	--	--	--	--	--	--
Mississippi	--	●	●	●	●	●	●	○	●	●
Missouri	--	○	●	●	●	●	●	●	●	●
Montana	○	●	●	●	●	●	●	●	●	●
Nebraska	●	●	○	○	○	○	●	●	○	○
Nevada	--	●	●	●	●	●	●	●	●	●
New Hampshire	○	●	●	○	○	○	●	●	●	●
New Jersey	○	○	●	○	○	●	○	●	○	●
New Mexico	●	○	○	--	○	--	○	●	●	●
New York	●	●	--	●	●	○	●	●	●	●
North Carolina	--	●	●	○	--	●	●	●	●	●
North Dakota	--	--	●	○	●	●	●	●	●	●
Ohio	--	●	○	●	●	--	●	●	●	○

Oklahoma	--	--	--	--	--	--	●	●	●	●
Oregon	○	○	○	○	○	--	○	○	○	--
Pennsylvania	○	--	--	--	--	--	--	--	--	●
Rhode Island	--	--	○	●	○	●	●	●	●	●
South Carolina	●	●	●	●	●	○	○	●	●	●
South Dakota	●	●	●	●	●	●	●	●	●	●
Tennessee	○	●	○	○	●	○	●	●	●	●
Texas	○	○	--	--	○	●	●	●	●	●
Utah	●	●	●	●	●	●	●	●	●	●
Vermont	--	●	●	●	●	●	●	●	●	●
Virginia	--	○	--	--	--	--	--	--	--	○
Washington	○	--	--	--	○	--	--	--	--	--
West Virginia	--	●	●	●	●	○	●	●	●	●
Wisconsin	○	●	○	●	●	●	●	●	●	●
Wyoming	○	○	●	●	●	●	●	●	●	●
<b>Total</b>	26	40	39	38	41	37	43	44	44	47
<b>Participating Total</b>	17	18	17	14	19	15	11	4	5	5
<b>Unweighted Total</b>	9	22	22	24	22	22	32	40	39	42
<b>Weighted Percent</b>	36.0	55.0	56.4	63.2	53.7	59.5	74.4	90.9	88.6	89.4

1. Weighted results mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying the school response rate times the student response rate. Weighted results are representative of all students in grades 9–12 attending public schools in each jurisdiction. With weighted data, it is possible to say, for example, "X% of students in state Y never or rarely wore a seat belt when riding in a car driven by someone else."

2. Unweighted data represent only the students who completed the survey.

## APPENDIX B

### EXTRAPOLATED QUESTIONS FROM VARIOUS YRBS QUESTIONNAIRES BY STATE AND YEAR

State	Question
<b>Arizona</b>	<p><b>2007</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times</p> <p><b>2009</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or more times</p>
<b>Florida</b>	<p><b>2007</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times</p>

	<p><b>2009/2011</b></p> <p>During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?</p> <p>A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or more times</p>
<b>Maine</b>	<p><b>2005/2007</b></p> <p>During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?</p> <p>A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times</p>
<b>Massachusetts</b>	<p><b>2003</b></p> <p>During the past 12 months, how many times did you hurt or injure yourself on purpose? (For example, by cutting, burning, or bruising yourself on purpose.)</p> <p>a. 0 times b. 1 or 2 times c. 3 to 5 times d. 6 to 9 times e. 10 to 19 times f. 20 or more times</p> <p><b>2005</b></p> <p>During the past 12 months, how many times did you hurt or injure yourself on purpose without wanting to die? (For example, by cutting, burning, or bruising yourself on purpose.)</p> <p>a. 0 times b. 1 or 2 times c. 3 to 5 times d. 6 to 9 times e. 10 to 19 times f. 20 or more times</p>

	<p><b>2007</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose? A. 0 times B. 1 or 2 times C. 3 to 5 times D. 6 to 9 times E. 10 to 19 times F. 20 or more times</p> <p><b>2009</b> During the past 12 months, how many times did you do something to purposely hurt or injure yourself without wanting to die, such as cutting, burning, or bruising yourself on purpose? A. 0 times B. 1 or 2 times C. 3 to 5 times D. 6 to 9 times E. 10 to 19 times F. 20 or more times</p> <p><b>2011</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose? A. 0 times B. 1 times C. 2 or 3 times D. 4 or 5 times E. 6 or more times</p>
<b>New Jersey</b>	<p><b>2007</b> During the past 12 months, did you purposely injure yourself by using a sharp object to scratch or cut your skin deep enough to draw blood? A. Yes B. No</p>

<p><b>Ohio</b></p>	<p><b>2005/2007</b>  During the past 12 months, how many times did you do something to purposely hurl yourself without wanting to die, such as cutting or burning yourself on purpose?</p> <p>A. 0 times  B. 1 time  C. 2 or 3 times  D. 4 or 5 times  E. 6 or 7 times  F. 8 or 9 times  G. 10 or 11 times  H. 12 or more times</p> <p><b>2011</b>  During the past 12 months, how many times did you do something to purposely hurl yourself without wanting to die, such as cutting or burning yourself on purpose?</p> <p>A. 0 times  B. 1 time  C. 2 or 3 times  D. 4 or 5 times  E. 6 or more times</p>
<p><b>Vermont</b></p>	<p><b>2007/2009/2011</b>  During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?</p> <p>a. 0 times  b. 1 time  c. 2 or 3 times  d. 4 or 5 times  e. 6 or more times</p>

## APPENDIX C

### YRBS SURVEY QUESTIONS AND PARAMETERS

State/ References	YRBS Question	Frequency	Unit of Analysis	Sample Size	Accessible population	Instrumentation	Protection of Human Participants
<b>Arizona</b>  Department of Education <a href="http://www.ade.az.gov/sa/healthdata.asp#youthRiskBehavior">http://www.ade.az.gov/sa/healthdata.asp#youthRiskBehavior</a>	<b>2007/2009</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?	Biennial (Odd numbered years)	Students in Grades 9-12  In Arizona public schools	<b>2007</b> <i>N= 3,095</i>  <b>2009</b> <i>N= 2,596</i>	Multistage Random Sample (by schools and classes within school) Students in fifty percent of the sampled classes are asked to complete the YRBS. Students in the other fifty percent of the sampled classes are asked to complete the Arizona Youth Tobacco Survey.	School staff administered the YRBS	Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary
<b>Florida</b>  Department of Health <a href="http://www.doh.state.fl.us/disease_ctrl/epi/Chronic_disease/YRBS/Intro.htm">http://www.doh.state.fl.us/disease_ctrl/epi/Chronic_disease/YRBS/Intro.htm</a>	<b>2007/2009/2011</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?	Biennial (Odd numbered years)	Florida public high school students (9-12 grade levels)	<b>2007</b> <i>N= 4,523</i>  <b>2009</b> <i>N= 5,684</i>  <b>2011</b> <i>N= 6,212</i>	The YRBS is based on a two-stage cluster probability sample design. First, a random sample of public high schools is selected for participation in the survey. Second, within each selected school, a random sample of classrooms is selected, and all students in those classes are invited to participate in the survey. The responses of the survey participants are weighted to be representative of all Florida public high school students.	School staff administered the YRBS	Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary



<p><b>Maine</b> Department of Education and Department of Health and Human Services</p> <p><a href="http://www.maineeshp.com/survey.html">http://www.maineeshp.com/survey.html</a></p>	<p><b>2005/2007</b> During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?</p>	<p>Biennial (Odd numbered years)</p>	<p>Maine public high school students (9-12 grade levels)</p>	<p><b>2005</b> N=1,375</p> <p><b>2007</b> N= 1,324</p>	<p>A Random Sample from 23 public High Schools in Maine.</p>	<p>School staff administered the YRBS</p>	<p>Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary</p>
<p><b>Massachusetts</b> The Massachusetts Departments of Elementary and Secondary Education (ESE) and Department of Public Health (DPH)</p> <p><a href="http://www.doe.mass.edu/cnp/hprograms/yrbs/">http://www.doe.mass.edu/cnp/hprograms/yrbs/</a></p> <p><a href="http://www.doe.mass.edu/cnp/hprograms/yrbs/05/default.html">http://www.doe.mass.edu/cnp/hprograms/yrbs/05/default.html</a></p>	<p><b>2003/2005</b> During the past 12 months, how many times did you hurt or injure yourself on purpose? (For example, by cutting, burning, or bruising yourself on purpose.)</p> <p><b>2007/2009/ 2011</b> During the past 12 months, how many times did you do something to purposely hurt or injure yourself without wanting to die, such as cutting, burning, or bruising yourself on purpose?</p>	<p>Biennial (Odd numbered years)</p>	<p>Massachusetts public high school students (9-12 grade levels)</p>	<p><b>2003</b> N=3,624</p> <p><b>2005</b> N=3,522</p> <p><b>2007</b> N= 3,131</p> <p><b>2009</b> N=2,707</p> <p><b>2011</b> Results Pending</p>	<p><b>2003</b> Conducted in the spring of 2003 in 50 randomly selected public high schools</p> <p><b>2005</b> Administered from February to June 2005 in randomly selected public high schools across the state. In total, 51 of 59 randomly selected high schools across the state participated in the survey.</p> <p><b>2007</b> Administered in a random selection of 124 public secondary schools.</p> <p><b>2009</b> A random sample of 121 public secondary schools</p> <p><b>2011</b> Results Pending</p>	<p>School staff administered the YRBS</p>	<p>Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary</p>

<p><b>New Jersey</b></p> <p>New Jersey Department of Education</p> <p><a href="http://www.state.nj.us/education/students/yrebs/">http://www.state.nj.us/education/students/yrebs/</a></p>	<p><b>2007</b></p> <p>In the last 12 months have you purposely injured yourself by using a sharp object to cut deep enough to draw blood?</p> <p>YES NO</p>	<p>Biennial (Odd numbered years)</p>	<p><b>2007</b></p> <p>Administered to a sample of public high school students during the spring of 2007 by the New Jersey Department of Education (NJDOE)</p>	<p><b>2007</b></p> <p>N= 1,677</p>	<p><b>2007</b></p> <p>Administered in a random selection 29 public high schools. Classes were then randomly selected in a manner which assured that all students were eligible for selection into the sample</p>	<p>School staff administered the YRBS</p>	<p>The law requires active parental consent for student participation which means that students could only participate if they returned a signed consent form from a parent/guardian.</p>
<p><b>Ohio</b></p> <p>The Ohio Department of Health</p> <p><a href="http://www.odh.ohio.gov/odhprograms/chss/adhth/youthrsk/youthrsk1.aspx">http://www.odh.ohio.gov/odhprograms/chss/adhth/youthrsk/youthrsk1.aspx</a></p>	<p><b>2005/2007/2011</b></p> <p>During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?</p>	<p>Biennial (Odd numbered years)</p>	<p><b>2005/2007/2011</b></p> <p>Ohio high school students (9-12 grade levels)</p>	<p><b>2005</b></p> <p>N=1,411</p> <p><b>2007</b></p> <p>N=2,527</p> <p><b>2011</b></p> <p>N=1,442</p>	<p><b>2005</b></p> <p>Administered to a random selection of 49 Ohio public and non-public high schools.</p> <p><b>2007</b></p> <p>Administered in random selection to 101 Ohio high schools during the spring semester of 2007</p>	<p>School staff administered the YRBS</p>	<p>Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary</p>

**Vermont**

Vermont Department of Health

<http://healthvermont.gov/research/yrbs.aspx>

**2007/2009/2011**

During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

Biennial (Odd numbered years)

**2007/2009/2011**  
Vermont high school students (9-12 grade levels)

**2007**  
N=8,453

**2009**  
N=11,427

**2011**  
N=8,654

**2007**  
Twenty Vermont high schools of varying sizes; were randomly selected for the state sample (1:3 systematic sample after sorting by enrollments).

**2009**  
Twenty high schools of varying sizes were randomly selected

**2011**  
Students at 66 high schools took the 2011 Vermont High School YRBS

School staff administered the YRBS

Local parental permission procedures were followed before survey administration. Survey administrators followed strict procedures to safeguard students' privacy and anonymity. School and student participation was voluntary

**APPENDIX D**  
**RESULT MATRIX**

State	Result By Year									
<b>Arizona</b>	<b>2007</b>									
	QN94: Percentage of students who did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months									
		Percentage	Total 95% confidence interval	N	Percentage	Male 95% confidence interval	N	Percentage	Female 95% confidence interval	N
	Total	20.8	( 18.3 - 23.5)	3,072	15.8	( 13.9 - 17.9)	1,525	26.1	( 22.2 - 30.3)	1,533
	<b>Age</b>									
	15 or younger	22.4	( 18.7 - 26.5)	1,035	15.4	( 11.8 - 19.8)	495	29.3	( 23.7 - 35.6)	535
	16 or 17	20.6	( 17.7 - 23.9)	1,536	16.0	( 12.7 - 19.8)	741	25.3	( 21.5 - 29.7)	791
	18 or older	17.1	( 13.0 - 22.2)	493	16.1	( 12.7 - 20.1)	287	19.0	( 12.2 - 28.3)	204
	<b>Grade</b>									
	9th	23.4	( 19.3 - 28.0)	753	15.9	( 11.3 - 21.7)	364	31.5	( 25.3 - 38.5)	385
10th	21.7	( 17.4 - 26.8)	886	16.1	( 12.2 - 20.9)	449	27.5	( 21.5 - 34.6)	434	
11th	19.6	( 16.3 - 23.4)	690	15.3	( 11.0 - 20.8)	322	24.0	( 18.7 - 30.1)	366	
12th	16.7	( 13.0 - 21.2)	687	14.1	( 10.3 - 19.0)	361	19.5	( 14.4 - 25.8)	326	
<b>Race/Ethnicity</b>										
Black*	11.1	( 5.6 - 20.6)	141	-	-	70	-	-	70	
Hispanic/Latino	21.5	( 17.9 - 25.6)	1,287	14.0	( 10.9 - 17.7)	625	29.1	( 23.8 - 34.9)	661	
Native American	32.5	( 26.0 - 39.7)	179	-	-	94	-	-	85	
White*	18.5	( 15.3 - 22.3)	1,173	13.9	( 10.7 - 18.0)	593	23.4	( 18.9 - 28.6)	578	
All other races	-	-	88	-	-	42	-	-	44	
Multiple races	-	-	95	-	-	41	-	-	52	

## 2009 General

Q97. During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

Total	Age				Grade				Race/Ethnicity						
	Total	15 or younger	16 or 17	18 or older	9th	10th	11th	12th	Black*	Hispanic/Latino	Native American	White*	All other races	Multiple races	
0 times	%	80.2	78.8	79.5	85.2	76.6	81.2	79.0	83.8	87.9	80.7	69.4	80.5	-	-
	N	1,849	594	890	363	481	396	456	488	103	974	76	545	51	42
1 time	%	6.2	6.6	6.6	4.0	7.4	6.1	7.0	4.5	6.2	6.6	11.3	5.2	-	-
	N	166	63	88	15	53	42	39	31	10	82	12	47	2	9
2 or 3 times	%	7.1	7.9	7.4	4.4	9.0	7.8	6.9	4.8	3.5	7.6	11.3	6.8	-	-
	N	167	64	79	23	58	43	38	28	4	96	11	47	1	5
4 or 5 times	%	1.8	2.0	1.6	1.9	2.2	1.4	1.1	2.5	0.5	1.3	2.9	1.9	-	-
	N	45	17	21	7	16	8	9	12	2	22	3	13	2	3
6 or more times	%	4.7	4.7	4.8	4.5	4.8	3.5	6.0	4.4	1.9	3.8	5.1	5.7	-	-
	N	137	50	68	18	39	29	43	22	3	59	6	55	5	3
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-
	N	2,364	788	1,146	426	647	518	585	581	122	1,233	108	707	61	62

## Males 2009

Q97. During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

Male	Age				Grade				Race/Ethnicity					
	All males	15 or younger	16 or 17	18 or older	9th	10th	11th	12th	Black*	Hispanic/Latino	Native American	White*	All other races	Multiple races
0 times	% 84.6	84.1	83.0	89.7	83.4	85.4	82.5	86.9	-	87.4	-	83.2	-	-
	N 1,010	330	468	212	271	229	229	264	54	513	48	306	35	17
1 time	% 5.4	5.0	6.1	4.5	4.5	7.0	6.1	4.6	-	4.6	-	5.1	-	-
	N 66	22	35	9	16	19	15	16	4	29	5	20	2	5
2 or 3 times	% 5.3	5.7	6.4	1.5	6.5	5.8	6.4	2.6	-	5.0	-	4.7	-	-
	N 61	23	32	6	20	20	13	8	4	30	6	18	0	1
4 or 5 times	% 1.5	1.5	1.3	2.0	1.9	0.0	1.4	2.7	-	0.9	-	1.8	-	-
	N 15	5	6	4	5	0	3	7	0	7	2	5	0	1
6 or more times	% 3.2	3.8	3.2	2.3	3.6	1.8	3.6	3.1	-	2.1	-	5.2	-	-
	N 34	14	13	7	9	6	8	9	0	13	0	20	1	0
Total	% 100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	100.0	-	100.0	-	-
	N 1,186	394	554	238	321	274	268	304	62	592	61	369	38	24

## Females 2009

Q97. During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

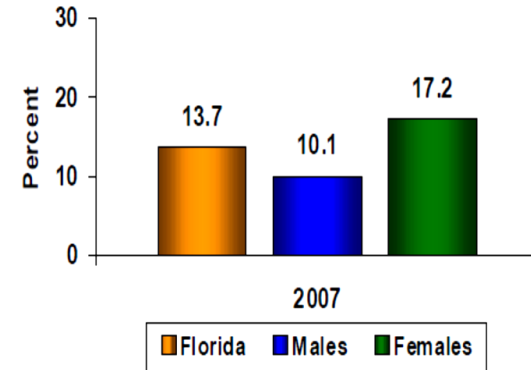
Female	Age				Grade				Race/Ethnicity						
	All females	15 or younger	16 or 17	18 or older	9th	10th	11th	12th	Black*	Hispanic/Latino	Native American	White*	All other races	Multiple races	
0 times	%	75.6	73.3	76.3	78.9	69.4	76.7	75.9	80.5	-	74.6	-	77.6	-	-
	N	834	263	421	149	209	166	226	223	49	460	28	237	16	25
1 time	%	6.9	8.3	7.0	3.5	10.4	5.3	7.5	4.4	-	8.4	-	5.2	-	-
	N	98	41	51	6	37	23	23	15	6	53	7	27	0	4
2 or 3 times	%	9.0	10.3	8.4	8.3	11.7	9.9	7.4	7.1	-	10.0	-	9.1	-	-
	N	106	41	47	17	38	23	25	20	0	66	5	29	1	4
4 or 5 times	%	2.1	2.5	1.9	1.9	2.5	2.8	0.9	2.3	-	1.7	-	1.9	-	-
	N	30	12	15	3	11	8	6	5	2	15	1	8	2	2
6 or more times	%	6.3	5.7	6.4	7.5	6.0	5.3	8.4	5.8	-	5.4	-	6.1	-	-
	N	101	35	55	11	30	23	35	13	3	45	6	34	4	3
Total	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	100.0	-	100.0	-	-
	N	1,169	392	589	186	325	243	315	276	60	639	47	335	23	38

# Florida

2007

### Self-injured, without wanting to die\*

In 2007, approximately 96,800 students (13.7%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. Females (17.2%) were more likely than males (10.1%) to purposely hurt themselves.

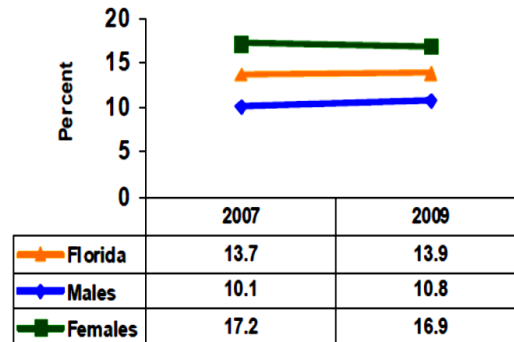


\*Question first asked in 2007

2009

### Self-injured, without wanting to die\*

In 2009, approximately 106,730 students (13.9%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. Females (16.9%) were more likely than males (10.8%) to purposely hurt themselves.



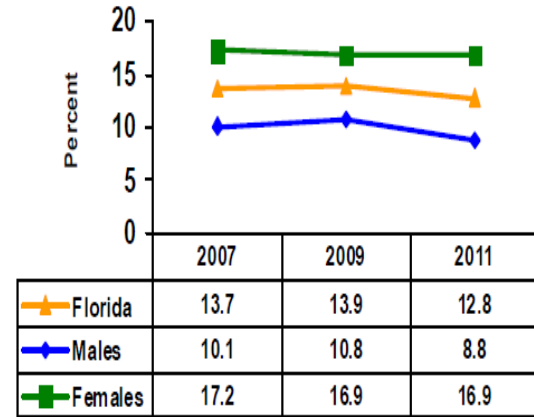
\*Question first asked in 2007



2011

**Self-injured, without wanting to die\***

In 2011, approximately 100,700 students (12.8%) did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months. From 2007 to 2011 there was not a significant change in the prevalence of this behavior. Females consistently had a significantly higher prevalence of this behavior than males.



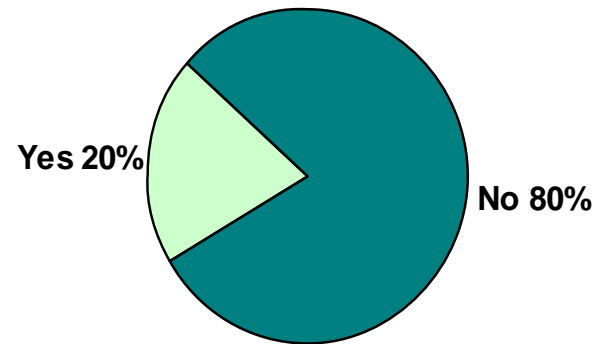
\*Question first asked in 2007

# Maine

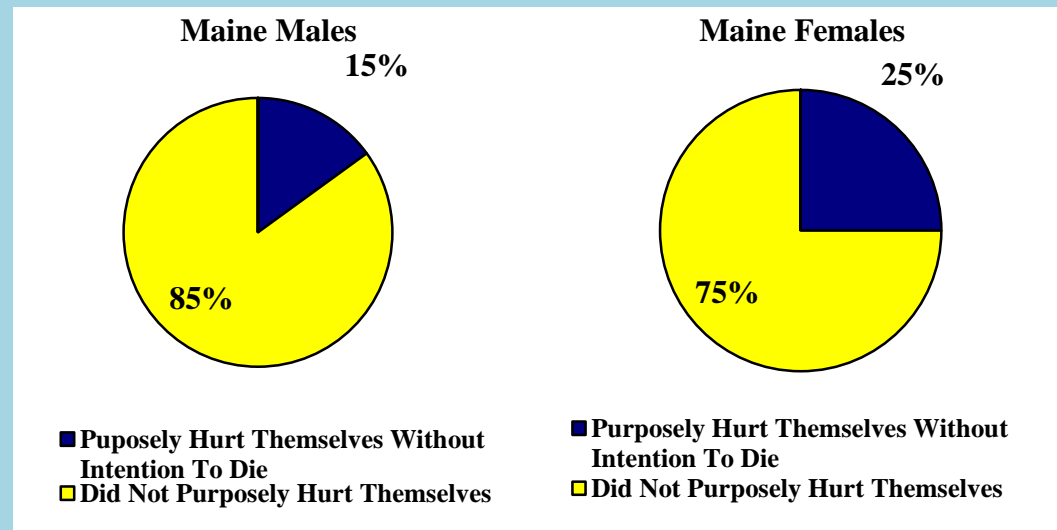
2005

- One in five high school students (20 percent) reported that they had purposely hurt themselves without wanting to die in the 12 months prior to the survey.

**Figure C: Percentage of High School Students Who Have Purposely Hurt Themselves Without Wanting to Die in the 12 Months Prior to the Survey**



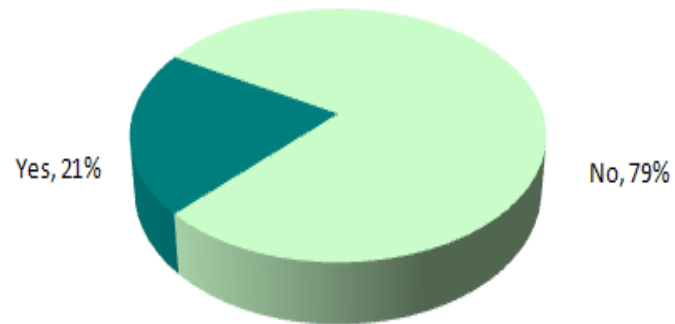
- Female high school students (25 percent) were more likely to report this behavior than male high school students (15 percent).



## 2007

- Two in ten (21%) high school students reported that in the past 12 months they did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose (Figure C).
- Female high school students (27%) were significantly more likely than male high school students (15%) to report cutting/burning behavior.

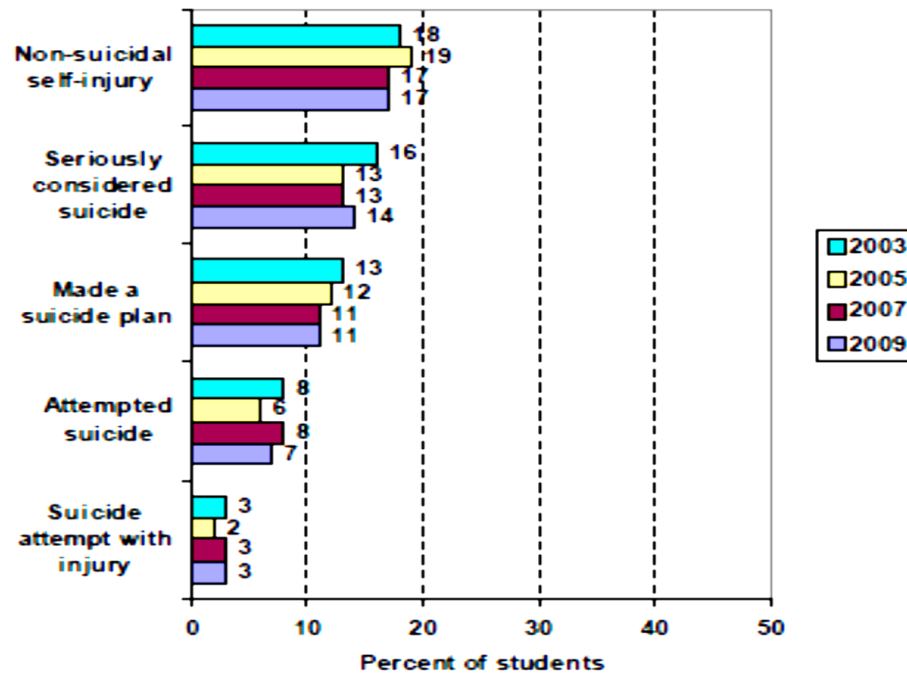
Figure C: Percentage of High School Students Who Have Purposely Hurt Themselves Without Wanting to Die in the 12 Months Prior to the Survey



# Massachusetts

2003/2005/2007/2009

**Figure 31: Suicidality and Non-Suicidal Self-Injury Among MA High School Students, 2003-2009**



Data source: MYRBS 2001-2007

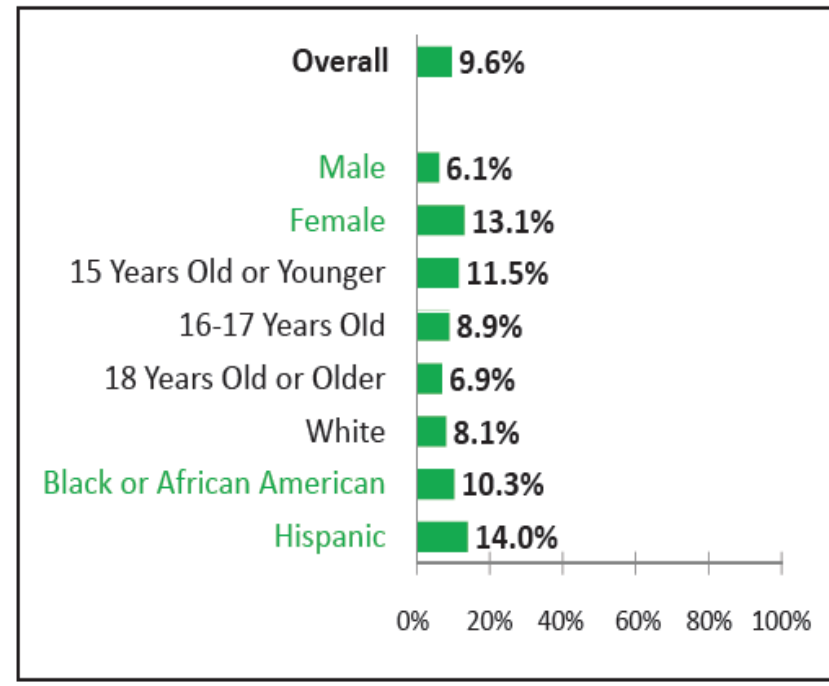
2011  
Results Pending

# New Jersey

2007

- Since rates of adolescent cutting and/or self-mutilation practices have been on the rise, a question was added to address these occurrences. Estimating the rate of self-mutilation among adolescents is difficult, but studies generally estimate an incidence rate of 15-20%.

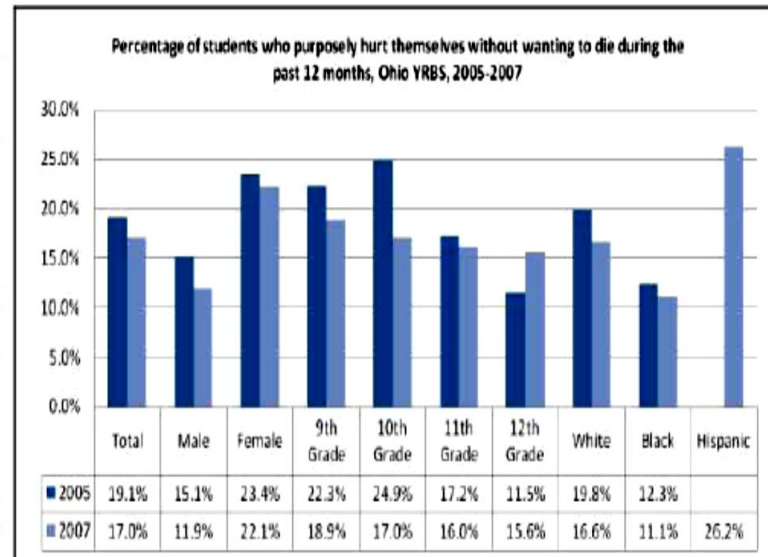
**Figure 5.8: Self-Injurious Scratching or Cutting in Last 12 Months**



## • Violence: Self-injury

During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?

- In 2007, most students reported they did not intentionally hurt themselves
  - 17.0 percent of students reported purposely hurting themselves without wanting to die
  - Females (22.1 percent) were significantly more likely than males (11.9 percent) to purposely hurt themselves without wanting to die.
  - There were no significant differences by grade level or race.
- There were no significant differences in the percentage of students who purposely hurt themselves between 2005 and 2007.
- This question was not asked in 1999 or 2003.



## 2011

QN90: Percentage of students who did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months

	Percentage	Total 95% confidence interval	N	Percentage	Male 95% confidence interval	N	Percentage	Female 95% confidence interval	N
<b>Total</b>	16.5	( 13.4 - 20.2)	1,435	12.9	( 10.2 - 16.2)	716	20.4	( 16.3 - 25.3)	712
<b>Age</b>									
15 or younger	18.8	( 13.7 - 25.2)	522	13.2	( 8.3 - 20.3)	242	24.1	( 17.0 - 33.1)	276
16 or 17	15.8	( 11.5 - 21.4)	696	12.1	( 8.3 - 17.2)	355	20.0	( 14.0 - 27.7)	338
18 or older	14.3	( 9.9 - 20.3)	216	14.6	( 9.6 - 21.5)	119	-	-	97
<b>Grade</b>									
9th	19.8	( 14.8 - 26.0)	400	13.2	( 8.8 - 19.4)	203	26.9	( 18.6 - 37.3)	195
10th	16.5	( 11.1 - 23.7)	407	10.5	( 5.7 - 18.5)	191	22.7	( 15.9 - 31.3)	214
11th	15.5	( 9.7 - 23.8)	303	14.1	( 7.7 - 24.3)	159	16.9	( 10.2 - 26.7)	144
12th	14.0	( 10.0 - 19.4)	294	13.8	( 8.1 - 22.5)	146	14.3	( 9.7 - 20.5)	148
<b>Race/Ethnicity</b>									
Black*	14.7	( 8.4 - 24.6)	382	13.6	( 7.5 - 23.6)	180	15.8	( 7.8 - 29.3)	202
Hispanic/Latino	28.0	( 18.5 - 39.9)	101	-	-	44	-	-	55
White*	15.9	( 13.0 - 19.3)	794	12.3	( 9.9 - 15.1)	414	19.9	( 15.7 - 25.1)	378
All other races	-	-	33	-	-	18	-	-	14
Multiple races	-	-	71	-	-	32	-	-	39

Note: There were 7 students who were excluded from the analysis for QN90.

N = Number of students.

\*Non-Hispanic.

- = Less than 100 students in the subgroup.

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# Vermont

## 2007

- Self-harm is more common among females than males. Twice as many females as males reported hurting themselves during the past 12 months (21% vs. 10%).

	GRADE					GENDER		ALL	
	8	9	10	11	12	F	M	2007	2005
Percent of students who, during the past 12 months, purposely hurt themselves(e.g., cut or burned) without wanting to die	16	17	16	14	13	21	10	15	NA

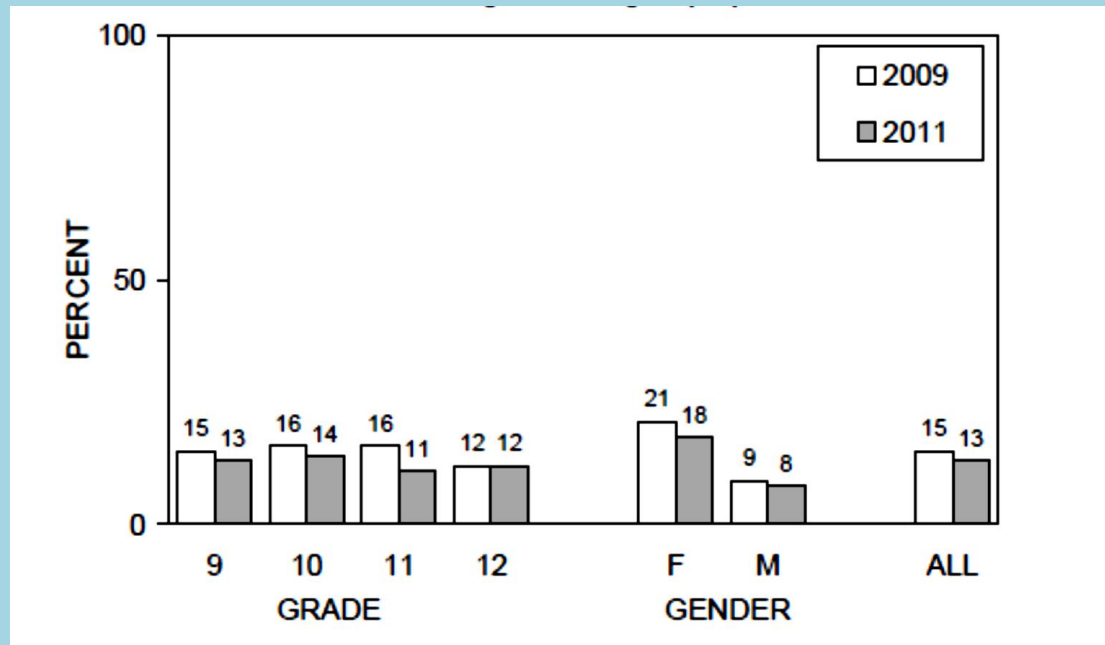
## 2009

	All		Grade					Gender	
	2007	2009	8	9	10	11	12	F	M
Percent of students who, during the past 12 months:									
Purposely hurt themselves(e.g., cut or burned) without wanting to die	15	15	15	15	16	16	12	21	9

**2011**

- Overall, 13% of students reported hurting themselves without wanting to die, such as by cutting or burning on purpose, in the past 12 months.
- Females were significantly more likely to report purposeful harm than males. There were no differences by grade.

**Percent of students who one or more times during the past 12 months purposely hurt themselves without wanting to die, such as cutting or burning on purpose**



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