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Fletch, Jordan E. ***Non-Suicidal Self-Injury in Adolescents***

Abstract

Non-suicidal self injury, suicide ideation, and suicide are exceedingly prevalent in youth. The life-time rate of non-suicidal self-injury has been reported to range from 13% - 23% with the typical onset ranging from 12-14 years old. Additionally, there is an increased rate for suicide ideation and suicide attempts for individuals who engage in self-injury. Identified risk factors include depression, hopelessness, lack of social support, and deficits in problem solving. In addition, the relationship among substance abuse, body image, and eating disorders is examined. Prevention and intervention programs and strategies are discussed, as well as future recommendations for research.

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Chapter I: Introduction

Although the issue of suicide is difficult to discuss, the elevated rates in America bring reason for concern and suggest attention is necessary. Suicide is a complex issue that includes numerous dimensions. Non-suicidal self-injury (NSSI), suicide ideation, and suicide attempts are all factors to consider when discussing suicide. Currently, the Centers for Disease Control (CDC) (2012) reported suicide to be the tenth leading cause of death among Americans, which results in the loss of approximately 36,000 individuals per year. In addition, it has been reported that the amount of individuals who attempt suicide and survive is larger than the individuals who are successful (Centers for Disease Control, 2009). Mental Health America (2012) reported a prevalence rate of 500,000 individuals attempting suicide per year and indicated a ratio of attempts to suicide being around ten to one.

Suicidal thoughts, as well as rates of self-injury, are additional factors that are a serious health concern. Approximately 374,000 people per year are treated for self-imposed injuries (CDC, 2012). It is significant to recognize that this statistic does not account for self injuries that were able to be taken care of outside of emergency rooms. In addition, the lifetime rate has been reported to be relatively high for non-suicidal self-injury (Jacobson & Gould, 2007). It is important to consider non-suicidal self-injury and suicide ideation because research has indicated potential links that may lead to suicide attempts and completions (Glenn & Klonsky, 2009). The immense number of suicide related behaviors and completed suicides imply the scope of the problem is large.

More specifically, suicide, suicide ideation, and self-injurious behavior are also exceedingly prevalent in youth. According to the CDC (2009), “suicide is the third leading cause of death among individuals between the ages of 10-24 and the second leading cause of death

among college students." The result is the loss of over 4,400 individuals per year, which can count for about 12% of deaths in the 15-24 age range. Additionally, a nationwide survey of ninth to twelfth graders indicated that in the preceding year 7% of the students actually had attempted suicide and 15% had seriously considered the option (CDC, 2009).

As mentioned previously, non-suicidal self-injury is exceedingly prevalent. Specifically to adolescents, the lifetime rate of non-suicidal self-injury has been reported to range from 13%-23% with some people suggesting increasing rates (Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2007). In addition, the typical onset of non-suicidal self-injury ranges from age 12-14 years old (Jacobson & Gould, 2007). Because of the onset of age and reported lifetime prevalence, additional research could benefit this specific age group and provide valuable information.

Although individuals who engage in non-suicidal self-injury have different characteristics than individuals who attempt or complete suicide, previous research has indicated that individuals who engage in non-suicidal self-injury are at an elevated rate for suicide ideation and suicide attempts (Glenn & Klonsky, 2009; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006; Nock & Prinstein, 2005). Additionally, non-suicidal self-injury has been considered to be a precursor to further suicidal behavior and suicide attempts (Muehlenkamp & Gutierrez, 2007). Previous research has reported up to 70% of those who engaged in NSSI also reported attempting suicide at least once in their lifetime (Nock et al., 2006).

Statement of the Problem

Non-suicidal self-injury, suicide ideation, and suicide are prevalent among adolescents. It is important to investigate the risk factors associated to provide additional knowledge to the literature that can be used for prevention and intervention strategies.

Purpose of the Study

The purpose of this investigation was to examine the literature, documenting risk factors and potential prevention and intervention strategies of non-suicidal self-injury for adolescents. In addition, strengths, limitations, and gaps of previous research were identified. A comprehensive literature review was conducted during the spring semester of 2013.

Research Questions

1. What are the risk factors associated with non-suicidal self-injury?
2. Is non-suicidal self-injury associated with suicide attempts?
3. What research-based prevention and intervention strategies would be useful for non-suicidal self-injury?

Definition of Terms

For the purpose of this paper, the following terms are defined for clarification and understanding:

Non-Suicidal Self-Injury (NSSI). Deliberate destruction of one's own body tissue without the intent to die (Nock, 2009b).

Risk factor. Anything that increases the probability that an individual will engage in non-suicidal self-injury.

Suicide. Self-harm behavior that results in death (Centers for Disease Control (CDC), 2011).

Suicide Attempts. A non-fatal self-directed behavior, that may or may not result in injury, with any intent to die as a result (CDC, 2011).

Suicide Ideation. Thinking or planning for suicide (CDC, 2011).

Assumptions and Limitations

There are several assumptions and limitations that are present in the current study. First, the research on non-suicidal self-injury has used numerous terms to describe the behavior. For the purpose of this paper the terms self-injury, self-harm, self-mutilation, and non-suicidal self-injury were used when examining previous research. It is assumed that although previous research has used different terms, the behaviors classified are similar. It also can be assumed that the literature on non-suicidal self-jury has been obtained from reliable and valid professional sources.

There also seems to be a lack of research on non-suicidal self-injury that focuses on the school age population. This leads the current literature review to include research from the college population. Variables such as gender and ethnicity, as well as other factors that potentially could contribute to suicide ideation were not considered. An additional limitation is that this paper does not comprehensively address all risk factors that have been related to non-suicidal self-injury. Last, because of the lack of developed evidence-based non-suicidal self-injury prevention programs, this literature review only briefly discusses prevention and intervention strategies.

Chapter II: Literature Review

This chapter will address research regarding potential risk factors in relation to adolescent non-suicidal self-injury (NSSI), and will review the evidence about its possible connection with suicide attempts and suicide. In addition, research-based prevention and intervention strategies will be discussed.

Risk Factors for Non-Suicidal Self Injury

Although it cannot be known for certain what causes an individual to self-harm, research has shown consistent factors that are related to NSSI (Muehlenkamp & Gutierrez, 2007; Brausch & Gutierrez, 2009; MacLaren & Best, 2010; Hoff & Muehlenkamp, 2009). For the purpose of this paper, a risk factor will be considered anything that increases the likelihood of an individual engaging in self-harm. Risk factors for NSSI are important to recognize because they may provide evidence on prevalence and severity as well as provide information that is useful when considering prevention and intervention strategies.

One of the most common risk factor associated with NSSI is depression. Numerous research studies have concluded that adolescents who engaged in self-harm were more likely to report depressive symptoms (Muehlenkamp & Gutierrez, 2007; Hoff & Muehlenkamp, 2009; Ross & Heath, 2002). Jacobson and Gould (2007) did a comprehensive literature review on non-suicidal self-injurious behavior and found depression to be commonly related to individuals who reported NSSI. Additionally, adolescents who had a history of NSSI or were still engaging in NSSI showed greater levels of depressive symptoms compared to those who did not (Muehlenkamp & Gutierrez, 2007; Ross & Heath, 2002). Hopelessness and reasons for living have also been discussed in the literature. A study of adolescents who reported

repetition of self-harm indicated higher levels of hopelessness compared to adolescents who did not report self-harm behaviors (Brausch & Gutierrez, 2010).

Furthermore, adolescents reported depression, feeling alone, and negative views toward the self as reasons for engaging in self-harm types of behavior (Laye-Gindhu & Schonert-Reichl, 2005). It is important to recognize that depression and hopelessness could be correlated with other factors which could then enhance the likelihood for NSSI in adolescents.

An additional factor that has been linked to adolescent non-suicidal self-injury is body image. Research has indicated that adolescents may be more likely to engage in non-suicidal self-injury if they have negative attitudes towards their body (Muehlenkamp, Claes, Smits, Peat, & Vandereycken, 2011; Muehlenkamp & Brausch, 2012). Previous research indicates that adolescents who self-injure reported higher levels of body dissatisfaction and a stronger desire to be thin (Ross, Heath, & Toste, 2009). This suggests that individuals who engage in NSSI may be more likely to dislike their bodies than individuals who do not engage in NSSI. Individuals who self-injured also were more likely to report being overweight regardless of being in the normal height and weight range, suggesting that how they view their body may be distorted (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008). Muehlenkamp et al. (2011) looked at numerous pathways related to NSSI and results showed a significant path from body dissatisfaction to NSSI. Additionally, body image as a mediator between negative affect and NSSI for adolescents was also found to be significant (Muehlenkamp & Brausch, 2012).

Furthermore, eating disorders have been examined as a potential risk factor for individuals who self-injure (Ross et al., 2009). Adolescents who reported NSSI were more likely to have maladaptive eating behaviors such as fasting and binging (Hilt et al., 2008). It has also been shown that adolescents who reported engaging in NSSI thought about binge eating more

often as well as had more frequent bulimic behaviors compared to those who did not indicate self-injury (Ross et al., 2009). A study with an inpatient sample of women with eating disorders examined self-injurious behavior. Approximately 35% of the sample indicated they had self-injured before. Self-injurious behavior occurred before the onset of the eating disorder for 25% percent of the sample, after for approximately 49%, and the remaining indicated the behaviors coincided (Paul, Schroeter, Dahme, & Nutzinger, 2002). The evidence from previous research demonstrates the importance of examining how NSSI and eating disorders co-occur. Additionally, it would be beneficial to consider if eating disorders is a type of self-injurious behavior.

Substance abuse is another important risk factor to consider when examining NSSI. Adolescents who had a history of NSSI reported greater drug and nicotine use in the past year (Hilt et al., 2008). Additionally, individuals who reported engaging in NSSI reported higher rates of alcohol and cigarette use than those who did not report NSSI (Hasking, Momeni, Swannell, & Chia, 2008). MacLaren and Best (2010) examined self-injury and addictive behaviors. Twenty-seven percent of their sample indicated they had self-injured with the more severe self-injurers reporting higher rates of alcohol and drug abuse. More specifically, a study looked at diagnostic correlates of NSSI and found a large percentage (59.6%) of their sample who had a recent history of NSSI had also met criteria for a substance abuse disorder (Nock et al., 2006). Additionally, a study that examined substance abuse and NSSI found 30% of the inpatient sample with substance abuse disorders also reported a history of NSSI, suggesting a pattern of risky behaviors to cope and co-occurrence (Gratz & Tull, 2010, Hasking et al., 2008).

Another potential risk factor that could lead to NSSI is maladaptive coping styles. Individuals who reported NSSI were more likely to ruminate on perceived failures, depressive

feelings, and self-blaming thoughts. This could potentially increase distress in the individual and lead to self-destructive coping (Hoff & Muehlenkamp, 2009). Additionally, individuals who engaged in self-injury were more likely to report more avoidant coping, using negative responses to deal with stress, compared to individuals who did not report NSSI (Hasking et al., 2008; Andover, Pepper, & Gibb, 2007).

Last, self-injuring individuals may use problem solving and social support seeking strategies less often. Nock and Mendes (2008) compared adolescents who engaged in NSSI to adolescents who did not self harm on their ability to tolerate stress and their use of problem-solving skills. Adolescents who engaged in NSSI were more likely to use negative solutions for problem solving and demonstrated a poorer ability to tolerate stress. Last, individuals who reported repetitive NSSI were less likely to perceive social support (Muehlenkamp, Brausch, Quigley, & Whitlock, 2013).

Suicide Attempts

As mentioned previously, individuals who engage in NSSI have different characteristics than individuals who attempt suicide; however, previous research suggests a potential link between NSSI and suicide attempts (Glenn & Klonsky, 2009; Nock et al., 2006; Nock & Prinstein, 2005). Individuals with a history of NSSI could be at risk for further suicide ideation and suicide attempts (Glenn & Klonsky, 2009). Some have suggested that NSSI is on a continuum of suicidal behavior with suicide being the final endpoint (Brausch & Gutierrez, 2010). With additional risk factors and repeated self-harm behavior, individuals could increase suicide ideation and suicidal behaviors resulting in suicide attempts. Research has shown that up to 70% of individuals who have engaged in NSSI are likely to attempt suicide at least once in their lifetime (Nock et al., 2006).

Joiner (2005) suggested that repeated exposure to self-injurious behavior could desensitize an individual to the behavior. Repeated self-injurious behavior could diminish the fear associated with suicidal behavior and result in individuals becoming more courageous and competent to attempt suicide. Research has also presented that individuals who engaged in NSSI often reported the self-injury lacked physical pain (Nock, 2009b; Nock & Prinstein, 2005). Nock (2009) found that individuals who engaged in NSSI were more likely to show pain analgesia on tests of pain tolerance. This could potentially be the result of previous abuse or repeated NSSI behavior, which created a higher pain tolerance. In relation to suicide attempts, research has shown that individuals who indicated less pain during physical injury also reported more suicide attempts (Nock et al., 2006). If individuals repeat self-harm behaviors, they may be more likely to develop a higher pain tolerance that could eventually lead them to be less fearful to attempt suicide.

The severity and prevalence of NSSI could also be linked to future suicidal behavior. Individuals who reported suicide attempts also engaged in NSSI more frequently and used multiple types of self-injurious behavior (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007). In addition, the social context in which the individual is engaging in NSSI behavior could play a role. Higher levels of suicide ideation and suicide attempts were found among individuals who self-harmed alone versus being around others who also were engaging in the behavior (Glenn & Klonsky, 2009).

It is also important to consider the risk factors associated with NSSI. The severity of risk factors could contribute to the likelihood of an individual attempting suicide. For example, adolescents who reported NSSI and suicide attempts reported lower levels of parental support (Brausch & Gutierrez, 2010). This relates to the risk factor of social support, suggesting that

lower levels of family support may increase self-injurious behaviors, as well as contribute to future suicide attempts. Reasons for living have also been cited in the literature. Individuals who self-injure and have increased feelings of apathy, decreased motivation, and an inability to identify things to work towards in the future have a greater risk for attempting suicide (Muehlenkamp & Gutierrez, 2007).

Prevention and Intervention Strategies

Because NSSI has been associated with multiple risk factors and has been linked to suicide attempts, it is important to consider potential prevention and intervention strategies. The typical age of onset has been cited to be around 12-14 years old, which suggests that prevention and intervention strategies should especially target adolescent, as well as younger children (Jacobson & Gould, 2007; Muehlenkamp & Gutierrez, 2007). Prevention and intervention strategies that focus on increasing protective factors and reducing risk factors is ideally what should be emphasized on. Additionally, because NSSI is a complex issue, prevention should focus on multiple areas that may contribute to the likelihood of an individual engaging in self-harm behaviors.

Cognitive treatments are commonly cited in the literature to address interventions for NSSI. When used with individuals who engage in NSSI, cognitive therapy focuses on adaptive ways to cope, positive self-instruction, and ways to be more hopeful and self-efficacious. Teaching the individual less damaging alternative behaviors and modifying maladaptive beliefs are suggested strategies (Nock, 2009a).

More specifically, two cognitive-behavioral approaches, problem-solving and dialectical behavior therapy, have the most empirical support for reducing NSSI (Muehlenkamp, 2006). Problem-solving therapy (PST) teaches individuals coping and problem-solving skills, as well as

helps them recognize and resolve problems in their lives. The goal is to teach skills that will allow the individual to effectively deal with future problems (Muehlenkamp, 2006). As mentioned previously, adolescents who engage in NSSI are more likely to report problem-solving deficits, suggesting that effectively teaching problem-solving skills would be beneficial (Nock & Mendes, 2008).

The results of studies examining PST for NSSI are mixed. Research has demonstrated improvement for symptoms and maintenance of self- injurious behavior, but has not shown immediate reductions in NSSI post treatment (Brausch & Girresch, 2012). Treatments that integrate cognitive, interpersonal, and/or behavioral elements with the problem-solving approach show greater long-term effects in reducing NSSI (Muehlenkamp, 2006). Additionally, studies that have reviewed PST suggest that this type of therapy indirectly reduces self-harm behaviors, but that it may take several months following treatment (Brausch & Girresch, 2012).

In addition, Dialectical behavior therapy (DBT) is another approach that has been used for addressing NSSI. DBT focuses on individuals addressing obstacles, learning to accept themselves, and teaching effective coping and problem solving skills (Muehlenkamp, 2006). The reviews of this therapy show reductions in NSSI behavior, however most studies combine suicide ideation and NSSI without separating the two behaviors. Direct evidence of treatment is lacking; however, adaptations of DBT for adolescents have been effective in addressing factors that co-occur with NSSI (Brausch & Girresch, 2012). DBT can be used to address emotional cues and urges for self-harm, mindfulness, and skill generalization (Nock, 2009 – second).

As mentioned previously, the age of onset for NSSI typically is during the adolescent time period. Because of the age of onset, it is important to address the role schools have in preventing and addressing NSSI. Toste & Heath (2010) express that a common problem in

schools is the underestimation of NSSI. Staff should acquire knowledge that addresses direct and indirect self-harm types of behavior, the differences among self-injury and suicidal behaviors, and the appropriate ways to respond to students who engage in NSSI (Walsh, 2006). It is important to identify individuals who are engaging in NSSI because it often is a sign for more severe difficulties (Toste & Heath, 2010).

At this time, there are no evidence-based school-wide preventions programs for NSSI; however, there are two known programs that exist for implementation within the schools, "Signs of Self-Injury" and S.A.F.E. Alternatives (Toste & Heath, 2010). The "Signs of Self-Injury" program, developed by Jacobs, Walsh, McDade, and Pigeon (2009), as cited in Muehlenkamp, Barent, Walsh, and McDade (2010) is designed to increase adolescents' knowledge and recognition of warning signs in themselves and their peers. The program also focuses on enhancing perceived capability of school staff and students when assisting with individuals who engage in NSSI, as well as enhance help-seeking behavior in adolescents who self-injure. The "Signs of Self-Injury" program uses psychoeducational material to educate about NSSI, including warning signs, appropriate ways to respond, and signs and symptoms. Students also watch video vignettes and practice responding using the ACT model: Acknowledge, Care, Tell (Muehlenkamp et al., 2010)

Muehlenkamp et al. (2010) evaluated the program to test how effective it was on students and school staff. A pre and post-test was used to evaluate the program. The survey addressed lifetime and current rates of NSSI, attitudes towards self-injuring peers, and help seeking behaviors. The results showed significant improvements in adolescent knowledge and attitudes. After the program, adolescents reported being more open to helping an individual who was engaging in NSSI, as well as feeling less discomfort about the situation. This provides valuable

information, because if peers are able to reach out towards their peers, it would enhance social support and allow the individual who engages in NSSI to seek additional help.

The second program, S.A.F.E. Alternatives, is a comprehensive program that helps individuals stop self harm behavior by promoting successful coping strategies (Conterio & Lader, 1988). The program was founded in 1985 with the acronym S.A.F.E. standing for Self Abuse Finally Ends (Conterio & Lader, 1998). S.A.F.E. Alternatives offers a residential treatment program, an outpatient day hospital program, and a weekly outpatient group psychotherapy program. The focus of these programs is to shift control to clients by empowering them to make healthier choices when managing their distress (S.A.F.E. Alternatives, n.d.).

S.A.F.E. Alternatives also provides resources for school professionals, according to S.A.F.E. Alternatives (n.d.). The *Self-Injury: A Manual for School Professionals* is designed for school professionals to learn about self-injuring behavior. The manual identifies various forms and purposes of self-harm, how to assess individuals who may be engaging in the behavior, and detailed intervention techniques and tools. Additionally, the manual provides information on how to work with parents and outside community resources. A student workbook with exercises is provided with the manual and can be used in individual or group settings (S.A.F.E. Alternatives, n.d.). No evidence is provided on the effectiveness of S.A.F.E. Alternatives in the school setting. Additionally, there are no other research studies addressing school-based interventions for NSSI.

A common concern among researchers regarding NSSI and suicide is that individuals will be more likely to engage in self- injurious behaviors after being surveyed on the information (Juhnke, Granello, & Granello, 2011). Muehlenkamp et al. (2010) evaluated “The Signs of Self-

Injury" program and the results indicated no adverse effects as a result of participating. Participating in the program did not increase self-injurious behaviors among participants or frequency and intensity of NSSI. Although further research is needed, the information obtained from Muehlenkamp et al. (2010) suggests that participating in prevention programs does not increase NSSI.

The complexity of NSSI is demonstrated by the numerous risk factors that are related. Previous research indentified depression, hopelessness, maladaptive coping, and lack of social support as risk factors for NSSI (Brausch & Gutierrez, 2010; Hoff & Muehlenkamp, 2009; Muehlenkamp & Gutierrez, 2007; Nock & Mendes, 2008). Additionally, relationships among body image, eating disorders, substance abuse, and NSSI have been examined (Muehlenkamp et al., 2011; Ross et al., 2009; Nock et al., 2006). Research also has identified a greater risk for suicide attempts for individuals who engage in NSSI which demonstrates further concern (Glenn & Klonsky, 2009). Cognitive treatments are most commonly cited in the literature to address NSSI, with only two school-based interventions being reported. The "Signs of Self-Injury" program is the only school-based intervention that demonstrated improvements for students (Muehlenkamp et al., 2010).

Chapter III: Summary, Critical Analysis, and Recommendations

This chapter will include a brief summary, as well as a critical analysis of the literature presented in Chapter II. In addition, the chapter will suggest recommendations for future research and practice.

Summary

The purpose of this paper was to obtain information that addressed risk factors associated with non-suicidal self-injury and investigate the link to suicide attempts. Additionally, literature on potential prevention and intervention strategies were examined.

Previous research has indicated numerous factors that have been linked to NSSI. Depressive symptoms and feelings of hopelessness are two factors that are generally reported in the literature. Individuals who reported a history of NSSI were more likely to feel depressed and hopeless (Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999; Muehlenkamp & Gutierrez, 2007). In addition, body image and disordered eating have become of a particular interest. Individuals with self-injurious behaviors tended to be less acceptant of their body image and reported more eating disordered behaviors compared to those who did not engage in NSSI (Ross et al., 2009). Substance abuse has also been correlated with NSSI. A high percentage of individuals with a history of NSSI reported more alcohol and drug abuse (MacLaren & Best, 2010) Last, maladaptive coping and lack of social support have been cited with NSSI (Hasking et al., 2008).

Previous research has suggested that individuals who engage in NSSI are at greater risk for attempting suicide (Glenn & Klonsky, 2009; Joiner, 2005; Nock et al., 2006; Nock & Prinstein, 2005). Research has cited up to 70% of individuals who have a history of NSSI are likely to attempt suicide at least once (Nock et al., 2006). Because of the high prevalence of

NSSI and the strong association to suicide attempts, prevention and intervention strategies should become more important. Concentrating on eliminating risk factors and increasing protective factors is ideally what should be provided.

The limited evaluation on evidence-based prevention programs is lacking; however there is information suggesting "best practices" for school professionals to develop, implement and evaluate prevention programs. Several researchers recommend that prevention programs addressing NSSI should focus on associated risk factors (Toste & Heath, 2010, Muehlenkamp, 2006). As mentioned earlier, individuals who engage in NSSI have reported less social support and more maladaptive coping styles. According to Lloyd-Richardson et al. (2007), prevention and intervention programs that focus on building skills for effective coping, communication, and stress management could benefit individuals who are more likely to engage in NSSI. For example, individuals who engaged in self-injury were more likely to report more avoidant coping compared to individuals who did not report NSSI (Hasking et al., 2008; Andover et al., 2007). Andover et al. (2007) recommend focusing on coping strategies, in addition to avoidance-based coping, to potentially decrease maladaptive coping skills that are related to NSSI.

Additionally, because NSSI has the potential to lead to suicide attempts, understanding individuals' views about suicide and encouraging reasons for living would be beneficial. When comparing individuals who have only engaged in NSSI with individuals who have a history of NSSI and suicide attempts, the individuals who also attempted suicide reported less reasons for living and were more likely to be experiencing depressive symptoms (Muehlenkamp & Gutierrez, 2007). This provides evidence that individuals' perspectives on life, as well as

identifying reasons for living, are important when considering prevention and intervention approaches.

Although "The Signs of Self-Injury" program is not cited as an evidence-based program, the program is based on the same model as the evidence-based Signs of Suicide program (Screening for Mental Health, 2010). Additionally, it provides useful information for school professionals when addressing NSSI in a school setting and showed effective results when evaluated (Muehlenkamp et al. 2010).

Last, Juhnke et al. (2011) suggested that schools focus on universal prevention strategies. Developing programs that address healthy coping and wellness skills would be beneficial for students. Schools should create a climate that is safe and encourages open communication with adults. Because NSSI is considered a maladaptive coping strategy, education is essential on harmful coping behaviors, such as alcohol and drug use, risky sexual behaviors, and NSSI (Toste & Heath, 2009). Addressing intellectual, emotional, and physical wellness should be implemented in classroom curriculum as a protective factor for NSSI (Juhnke et al., 2011).

Critical Analysis

It is evident through the literature examined that non-suicidal self injury (NSSI) is a complex issue that has numerous facets; the high rates of self-injurious behavior suggest attention is necessary. The literature has provided valuable information that addresses multiple factors and relations that could be correlated with NSSI; it is important to take into consideration that the directionality is not always sourced. This suggests that an individual who self-injures may have multiple reasons for engaging in the behavior or that the behaviors stems from multiple sources.

For example, Paul et al. (2002) assessed the rate of self-injurious behavior in a sample of individuals who currently were diagnosed with an eating disorder. The study clarified the onset of self-injurious behavior in relation to the onset of the eating disorder which provides a better understanding of how they co-occur. Ross et al. (2009) do not specify the onset of NSSI but rather indicated that individuals who self-harmed manifested greater eating pathology. Directionally is not stated, but the proposed study suggests that NSSI and negative eating pathology are results of difficulties in emotional regulation, as well as body objectification.

In addition, substance abuse has been linked with NSSI. MacLaren and Best (2010) examined addictive behaviors and indicated the more severe self-injurers reported higher rates of alcohol and drug abuse; however, they also reported higher rates of disorder eating, sexual compulsivity, and dysfunctional relationships. The study provides evidence supporting the co-occurrence of behaviors, but does not provide information in regards to directionality.

Although directionality is not always stated, it is beneficial to recognize specific factors and relations to NSSI. Behaviors that co-occur with NSSI may provide further understanding of maladaptive strategies for emotional regulation that are commonly associated with individuals who engage in NSSI (MacLaren & Best, 2010).

Although previous research recommends prevention and intervention strategies, there is a lack of developed prevention and intervention programs that can be implemented. More specifically, there are no evidence-based prevention programs for NSSI as designated by United States Department of Education, and only two known prevention programs designed for schools (Toste & Heath, 2010). In addition, interventions targeting NSSI for adolescents are limited. Problem-solving therapy (PST) and dialectical behavior therapy (DBT) are most commonly cited

in the research to address NSSI; however few empirical studies specific to NSSI in adolescents exist (Muehlenkamp, 2006).

Additionally, NSSI has been linked to future suicide attempts and suicide, which enhances the need for developed programs. It is important to recognize the different characteristics between individuals who only engage in NSSI compared to individuals who engage in NSSI and have had a history of at least one suicide attempt. Research suggested that individuals who only self-harm and have not attempted suicide generally have a greater fear of suicide and can report more reasons for living (Muehlenkamp & Gutierrez, 2007). Because individuals may be engaging in NSSI for different reason than individuals who also have a history of suicide attempts, it is important that prevention and intervention strategies focus on reducing risk factors for NSSI, so individuals do not continue future suicide related behaviors.

Although there is limited research on prevention programs, the literature provides valuable suggestions for potential protective factors. Individuals who engage in NSSI are more likely to report maladaptive coping styles and problem solving deficits (Hasking et al., 2008, Nock & Mendes, 2008). The literature suggests building skills for positive coping, communication, and stress management to reduce maladaptive coping (Lloyd-Richardson et al., 2007). Additionally, examining the social context of NSSI could be beneficial because individuals who engage in NSSI alone are at greater for suicide ideation and suicide attempts (Glenn & Klonsky, 2009).

Recommendations

Future research should focus more attention on the adolescent population because of the stated typical onset. Examining potential risk factors and determining how they relate to NSSI, such as directionally, would provide valuable information that could clarify reasons adolescents

engage in suicidal behavior. As mentioned previously, NSSI has been linked to maladaptive coping; research should focus on effective coping styles that reduce stress and NSSI behavior.

Understanding how NSSI is linked to suicide attempts is important for future research to investigate. Research should continue to focus on the differences between individuals who engage in NSSI only and individuals who engage in NSSI and suicide attempts. Because adolescents who self-injure may continue further suicide related behavior, examining the link could provide valuable information that could help prevent future attempts and completed suicides.

Last, the development of prevention and intervention strategies needs to become a priority. More specifically, prevention and interventions that can be implemented in the schools would benefit children and adolescents who may not otherwise be identified as engaging in NSSI. Muehlenkamp et al. (2010) evaluated a prevention program and determined that participation did not result in an increase of NSSI behavior. This is an important point to consider because it potentially reduces the fear school professionals may have of teaching self-injurious behavior to students.

School professionals can use previous research to enhance their knowledge and awareness of NSSI in adolescents. "The Signs of Self-Injury" program focuses on providing information on self-harm behaviors, as well as enhancing perceived capability of school staff and students when assisting individuals who engage in NSSI (Muehlenkamp et al., 2010). School staff should address NSSI by using similar techniques. Educating students and staff about warning signs, signs and symptoms, and appropriate ways to respond could increase knowledge and help-seeking behaviors. Students and staff who are more knowledgeable and aware of NSSI are more likely to identify and appropriately assist students in need. Additionally, S.A.F.E.

Alternatives provides a resource that can be used by school professionals. The manual addresses the various forms of self-harm, assessment procedures, and interventions that can be implemented within the school.

In addition to using the two programs designed for addressing NSSI in school settings, school professionals can use other prevention and intervention strategies that have been cited within the research. Prevention and intervention programs that address NSSI should center on associated risk factors and should focus on building effective skills within students (Lloyd-Richardson et al., 2007). Individuals should acquire the knowledge and skills to successfully identify healthy choices, as well as develop the skills to use adaptive coping and appropriate problem-solving. Additionally, school professional cans teach students how to effectively communicate and manage their stress, as well as provide social support.

As mentioned throughout this literature review, there are numerous factors related to NSSI. Research should continue to identify these factors and develop prevention and interventions that decrease NSSI in adolescents.

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