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Article

Nonsuicidal Self-Injury of Adolescents

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Abstract

Nonsuicidal self-injury (NSSI) is more common in adolescent and young adult populations than in the past. NSSI is typically used to deal with distressing negative affective states, especially anger and depression, and mixed emotional states. Pediatricians; primary care, family medicine, and emergency room physicians; and mental health professionals are faced with the charge of responding to NSSI behaviors among patients. Physicians in family medicine, pediatrics, and primary care settings play an essential role in initiating the beginning step in the treatment process for those who self-injure. All providers can strengthen the care provided to those who engage in NSSI via assessing the risk accurately, understanding the functions of the behavior, and assisting the patient in connecting with treatment. This article provides medical and mental health professionals with an overview of intervention strategies that may be useful when counseling adolescents and their families. In addition, areas for continued research are discussed.

Keywords

nonsuicidal self-injury, treatment, adolescents, emotion dysregulation, cognitive behavioral therapy

Problem Statement

The prevalence of nonsuicidal self-injury (NSSI) in the adolescent population has been on the rise as a typical adolescent presenting problem in our clinic. Medical departments and mental health programs are finding the prevalence of NSSI issues outweighs the available resources to help these clients and families. A recent community health needs assessment for Ochsner Medical Center demonstrated that patients with behavioral and mental health problems were the high utilizing patients in the emergency department.[1] There is a notable rise in the number of adolescents who engage in deliberate self-harm.[2]

This phenomenon is further supported by empirical research that suggests a current trend toward an increasing prevalence of self-injury, especially among adolescents and young adults.[3] This current increase in prevalence makes it highly likely that general practitioners will be the first point of contact for patients presenting with self-injury. Each year, pediatricians, emergency medicine physicians, and mental health providers care for adolescents who deliberately hurt themselves. Roughly 1 in 6 teenagers has tried self-harm at least once.[4] This increased occurrence is made even more likely by the current trend of patients seeking treatment for behavioral disorders from family medicine and primary care physicians first.[5] Most adolescents who engage in NSSI do so without the intent to kill themselves.[3] The focus of this article is on self-injury behavior: Why teens do it and how to help them.

The NSSI adolescent has become a cause for concern in community and clinic settings. One of the primary indicators for suicide is a history of self-injurious behavior,[6] and suicide is the leading cause of death among 15- to-24-year-olds.[7,8] Because engagement in self-injury behaviors can lead to serious injury and even death, it is a common trigger for admission to an acute psychiatric care; this approach is an expensive and restrictive treatment option with a weak evidence base.[9,10] For these reasons, finding effective treatments for the NSSI adolescent has been identified as an important area of study to assist our communities in serving these patients and their families.

Background of the Problem

Klonsky[11] found that NSSI is a behavior that a person can exhibit at an early age. He estimated a lifetime prevalence

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rate of 5.9% among surveyed adults in the United States. Brown and Kimball[12] noted epidemiological studies dating back to 2002 that found a significant increase in adolescents who engage in some form of self-harm. These studies found a 13% to 23.2% prevalence rate in a community sample.[4,12,13]

Another NSSI study from Copenhagen found that 21.5% of surveyed high school students had engaged in some form of direct self-harm behavior. Of those, 16.2% had engaged in self-injury behavior in the previous year.[14] An even more startling figure from a community study in the United States is that 46% of the adolescents surveyed admitted to having engaged in some form of self-injury.[15] Rate reports are similar among North America, Europe, Australia, and Asia, indicating that NSSI is an international phenomenon.[4] Although NSSI has been traditionally associated with girls and women, a 2009 study by Rodham and Hawton[16] suggests there is no gender difference.

Review of the NSSI Adolescent

In the research literature, many descriptors are used to delineate self-harm, which is defined as engagement in intentionally self-injurious behaviors such as cutting, scratching, punching, biting, ripping, carving, and burning.[17] A distinction is made in the research between self-harm with or without suicidal intent in the United States. However, in the United Kingdom and Europe, the term often used in the literature is deliberate self-harm (DSH). The descriptor DSH does not differentiate intent to commit suicide.[7,18]

A common question among clinicians is why do adolescents self-injure? The study by Klonsky[19] shows that the most common function of self-injury is to manage a range of negative emotions or to create a feeling of numbness or emptiness. On further examination, the problem for the patient is feeling unbearably sad, anxious, ashamed, or lonely or not feeling anything at all. Self-injury is a fix that in the short term can be incredibly effective at easing painful emotions. NSSI provides relief immediately and independently of any response from the outside world. Adolescents do not start self-injuring to get attention; rather, many teenagers self-injure in private for months or years before they are discovered and will go to great lengths to hide their behavior.

Once discovered, the NSSI behavior can evolve with a new purpose, contingent on the response they get from others. Teenagers who have deficiencies in regulating emotional skills may quickly learn to use NSSI as a way to affect others. Self-injury can serve to avoid something unpleasant or to provoke a reaction, even if it is a negative one.

Furthermore, many health care providers may release from treatment an adolescent who self-injures as disingenuous. In brief, in our experience, many adolescents who self-injure do so because they do not know what else to do. Learning coping skills is the foundational basis for many of the treatments for NSSI, which aim to teach alternative problem-solving methods.

Some researchers use poor problem-solving skills as an explanation for prevalence estimates of DSH in adolescent community samples that are highly variable,[4] ranging from 4% to 42%.[20] This research is contingent on the sampling method, assessment, and classification system for self-injury. According to the researchers, notable differences were also found on the time frame during which self-injury is assessed, for instance, lifetime versus 6- to-12-month prevalence.[4] Youth self-injury rates were also found to be significantly higher in clinical settings than in community samples. Youths in inpatient settings report rates of DSH as high as 60% to 80%.[21] Numerous studies have examined the risk factors or correlates of self-injury and have implicated a range of sociodemographic and psychosocial factors.[22-26] In studies by Hawton and Harriss[6] and Gratz et al,[25] one of the risks was associated with gender; being female and between the ages of 15 and 18 years has been found to increase the risk of self-injury behavior.

When considering racial and ethnic differences in self-harm, there is a higher prevalence of self-harm and suicidality in youth from lower socioeconomic and impoverished backgrounds.[25,27] There is also a comorbidity factor. Psychopathology—particularly depression, personality disorders, impulsivity, problems with self-esteem, sexual identity issues, trauma histories, and poor familial and interpersonal relationships—have all been found to be associated with adolescent self-injury behavior.[4] When trying to trace the etiology of NSSI, no single causal effect explains the development of NSSI. Several risks factors can contribute to an individual's need to engage in self-injury.[28] A history of abuse, psychological struggles, social and environmental obstacles, and biological factors can contribute to NSSI behaviors. When considering psychological risk factors, several studies have found that traumatic childhood experiences are a reliable indicator influencing a person's ability to manage stress.[29,30] The more frequent and or extreme the exposure to trauma, the greater the risk for developing psychological problems. Early-life traumatic events can have an impact on some areas of the brain and on the ability of adolescents to appropriately process emotions.[31]

Different forms of abuse such as physical or sexual abuse can alter effective pain receptors among those who are at risk. Impulsive and aggressive behaviors are also related to family of origin and environmental factors.

Nonsupportive families and/or environments can increase the possibility of emotional dysregulation. This lack of support can trigger a propensity to engage in self-harm behavior to relieve distress. It is difficult for families to understand the etiologies behind self-injury behaviors along with other mental health disorders, thus making it a challenge for family members to grasp self-injury behavior as a real problem.

Adolescents with a history of psychiatric treatment, hospitalization, suicide attempts, and current suicidal ideation are at a greater risk of engaging in NSSI compared with their peers who are more stable.[15] Until very recently, self-harming behavior has been commonly viewed clinically as a symptom of borderline personality disorder (BPD) rather than as a distinct disorder. However, a recent study found that 80% of the adolescents assessed did not meet the criteria for BPD.[32] Furthermore, the findings of the study by In-Albon et al[32] suggest that self-harming adolescents have comorbidities of major depression disorder, posttraumatic stress disorder, and social phobia disorder. Self-injury was accompanied by high rates of depressive and anxious internalizing. Other proposed risk factors for the etiology of self-injury behaviors can be explained by providing a biological basis for NSSI behaviors and can provide an alternative perspective on the underlying issues involved with the behavior that adolescents and their families could grasp.[13]

Understanding the physiological components of self-injury behavior can explain the role of pain in the management of emotional or psychological stress. A person's genetic background, altered physiological reactivity to stress, levels of neurotransmitters and lipids, and differences in brain activity can provide further explanation for repetitive self-injury behaviors.[33] Having an understanding of the biological vulnerability toward NSSI often leads families to discuss psychotropic medication options with the pediatrician or psychiatrist.

Theoretical explanatory models for self-harm vary depending on the degree of intention and presence of suicidality.[7] Frequently cited motivations for self-harm without suicidal intent include emotion regulation, distress in the feeling state, and trying not to focus on a problem that is negatively affecting them. Treating adolescents who engage in deliberate self-harm behavior is difficult at best. There are still gaps in the knowledge about the different presentations of self-harm: with or without suicidality and suicidality without self-injury. Self-harm has been linked to higher rates of psychopathology and engagement in other health-risking behaviors compared with healthier more stable adolescents.[34] For instance, only a fraction of adolescents who engage in self-injury seek or receive help.[35]

As evidenced throughout this discussion, there is variability in reported gender differences for NSSI. The following statistics are taken from a teen help website developed by concerned parents. Approximately 2 million cases of NSSI are reported annually. Recent self-injury statistics for the United States indicate that 1 in 5 females and 1 in 7 males engage in self-injury. Ninety percent of people who engage in self-harm begin the behavior during their adolescent or preadolescent years. Nearly half of those who participate in self-injury activities have been sexually abused. Females comprise 60% of those who engage in an injurious self-behavior. Many of those who self-injure report learning how to do so from friends or pro-self-injury websites.[36]

In a study by Whitlock et al,[37] 13% to 25% of adolescents and young adults surveyed in schools reported some history of self-injury. Studies of self-injury in college populations suggest approximately 6% of the college population are actively and chronically self-injuring, while many have some history with it. The middle school population—those in sixth through eighth grade—are suspected of having a higher prevalence rate than children in younger and older grades because the middle school years are when most individuals initiate self-injury.[6]

In the *Diagnostic and Statistical Manual of Mental Disorders*,[38] NSSI is recognized as a distinct condition. Research suggests that NSSI can occur independently of BPD, such as in patients with depression and even in those with no other diagnosable psychopathology.[38] Criteria for NSSI require 5 or more days of intentional self-inflicted damage to the surface of the body without suicidal intent within the past year. Patients also must engage in the self-injurious behavior with at least 1 of the following expectations: to seek relief from a negative feeling or cognitive state, to resolve an interpersonal difficulty, or to induce a positive state. The behavior must also be associated with one of the following criteria: interpersonal problem or negative feelings and thoughts, for example, depression, anxiety, premeditation, and ruminating on (nonsuicidal) self-injury. Socially sanctioned behaviors, such as body piercing and tattooing, do not qualify for the diagnosis, nor does scab picking or nail biting. This new diagnosis category for NSSI now delineates from previous diagnosis category by separating criteria for patients who express suicidal behavior within the past 24 months, but who do not qualify for another psychiatric disorder, now fall under the new "suicidal behavior" diagnosis category than in previous years.[38]

The traditional treatment for the self-injury patient population was to treat the underlying depression and suicidal thoughts that were presumed to be at the core of self-injury. Variations on the traditional treatment emphasized biological psychiatry that attempts to control behavior

through drugs. In inpatient units, these patients were often controlled with restraints and kept in an environment where no sharp objects were available. They were monitored by nurses and medical staff 24 hours a day and were administered psychotropic medications, electroshock therapy, and psychotherapy. This approach has not been effective long term and is quite costly. The common theme among most treatment programs, mainly focused on the inpatient treatment model, was the overwhelming effort from the treatment team required to keep the patient safe. The message conveyed by this treatment approach is that the patients cannot be held responsible for themselves or their actions, and others must guard them against their impulses. Conterio et al[39] argue that this treatment approach is counterproductive and not helpful. The authors point out that this authoritarian approach is not practical in any meaningful long-term recovery because it inhibits patients from self-regulation and from taking responsibility for their choices in self-care. The result is the inability to live autonomously because the self-injurers harbor a rescue fantasy that someone will constantly be available and will love them enough to maintain a careful watch on their behalf.[39]

The traditional treatment model will work as long as the patient remains hospitalized; however, this treatment approach is an unworkable strategy for independent living. Many treatment programs use this containment model, but it is not a long-term solution for an individual to become responsible for making healthier choices and learning adaptive coping skills. Thus, relapse is high for readmission.

The S.A.F.E. Alternative Treatment Program, the first nationally recognized treatment for NSSI, was founded by Conterio and Lader in the late 1980s and is committed to ending self-injury.[40] The philosophy involves the reliance on words and the context of relationships as the primary means for managing feelings and gaining self-awareness and self-control. Self-injurers have learned that feelings must be dealt with through physical actions of some kind. This program teaches patients to delay the urge to self-harm, reflect on what they are feeling, and choose an alternative mode of coping. S.A.F.E. calls this process "enlarging the window of opportunity" between the urge to self-injure and the actual act. This window of time frees the self-injurer to try an alternative. The S.A.F.E. Alternative program is based in Chicago, IL, and the treatment information is available at http://www.selfinjury.com.[40]

Theoretical Grounding of Treatment

There are various theoretical orientations in psychotherapy, and all of them can be helpful to the self-injurer. One popular theoretical model for treating NSSI individuals encompasses the combination of insight-oriented or psychodynamic therapy, cognitive-behavioral therapy (CBT), dialectical behavior therapy (DBT), and supportive therapy. The boundaries between these orientations are not rigid; rather, there is great overlap.

Insight-oriented or psychodynamic therapy focuses on understanding the motives for an individual's behavior. The self- injurer's choices are seen as complex outcomes of wishes, fears, memories, unresolved feelings, and conflicts. The individual may or may not be aware of some of these motives that drive behavior. The main idea is that the more the patient learns about his or her unknown inner world, the less he or she will feel compelled to engage in maladaptive strategies to cope with life.

The basic premise of CBT is that the way a person thinks strongly influences how he or she behaves and feels. The focus is on helping the individual recognize and change his or her automatic thoughts, underlying assumptions, and cognitive distortions. The behavior component of CBT combines working on faulty thinking patterns with teaching, training, and guided rehearsal of new coping strategies.[41] Adolescent NSSI has been linked with poor problem-solving, and interventions that focus on improving cognitive distortions and problem-solving skill deficits are worth examining as possible strategies for treating adolescent NSSI.

DBT is a skills-training approach developed by Marsha Linehan[42] as a treatment for BPD. DBT is based on the biosocial model of BPD. This model states that BPD is a pervasive disorder of the emotional regulation system that develops as a result of a transactional relationship between caustic and abusive conditions in one's developmental environment and a genetic predisposition toward rapid cycling between emotional extremities and intensities.[43] The DBT approach can be helpful for managing intense and overwhelming emotions that present right before the self-injury behavior. Thus, the individual learns to have emotional awareness and to manage new adaptive behaviors.[42]

Interventions and Best Practices

Teenagers have a variety of problems that they are trying to solve, and some teens are less well equipped than their peers who are more functional and stable. The clinician and practitioner role is to evaluate the context and severity of self-injury to set the stage for further successful treatment. Working with adolescents who engage in NSSI and their families is both arduous and psychologically taxing. Supervision and/or consultation with other professionals may assist in maintaining objectivity and

effectiveness.[44] For some patients, discontinuing NSSI behaviors may be relatively easy, while for others, discontinuation may be more challenging and frustrating.[45] Some adolescents welcome and accept professional assistance to stop the self-harming behavior, while others present with anger and resist giving up this maladaptive yet effective coping strategy. Improperly addressing the NSSI can cause the adolescent to continue and possibly increase the behaviors.[46] Treatment interventions include a host of modalities such as medical and psychiatric referrals, assessments, and traditional counseling techniques.

The literature is inconclusive regarding best practices in working with adolescents who self-injure. However, there are similar characteristics among the techniques identified as being successful with the population; all include the necessity for consistent therapeutic contact for a relatively long time. The suggestions below are meant to provide health care providers such as pediatricians and mental health counselors with a plan of action to maximize their effectiveness when working with adolescents who engage in self-harming behaviors.

The principles of multidisciplinary management are to be considered when assessing and treating the youth presenting with NSSI. An adolescent who self-injures requires a referral to a mental health professional. It is important to assess the level of risk for the adolescent patient.

All adolescents face various risks due to the fast changing developmental period of adolescence. Those who are more fragile are more at risk for self-harm compared to those adolescents who have good coping skills, are engaged with others, and have structure through academic and nonacademic activities. Those whose families have few resources will warrant a referral urgently to a mental health provider.

Establish a Therapeutic Alliance

Creating a strong therapeutic alliance with clients is imperative. Research indicates the counselor/client relationship can be as healing as other counseling interventions when working with adolescents who participate in self-injury behavior.[47] Although a positive alliance is beneficial in all counseling situations, with clients who engage in NSSI, the relationship is crucial. While this point may seem obvious, many mental health professionals fail to keep sight of this essential concept when challenged with the cuts, scratches, burns, and blood associated with NSSI. Several issues can inhibit the helping relationship, such as a lack of understanding, feelings of inadequacy, liability concerns, compassion fatigue, countertransference, and a sense of helplessness, and can contribute to counselors not having an effective helping relationship. When medical professionals or mental health counselors focus on behavior instead of the individual, they can come across as insincere, judgmental, and uncaring.

Determine the Reason Behind the Behavior

The focus of DBT is on the examination of the emotional dysregulation and identification of possible trauma symptoms that manifest in adolescents' behavior as an expression of their underlying issues. DBT does not view the self-injury as the primary problem but rather as the obstacle that keeps the individual from effectively coping with his/her problems.

Address Thoughts and Beliefs

Therapeutic interventions include a range of skills: mindfulness, emotion regulation, grounding techniques, thinking styles, and relaxation and meditation skills. These skills have been found to be helpful in managing emotion related to traumatic experiences and increasing the general ability to regulate emotional states effectively.

Address the Behavior

By increasing the patient's awareness that he or she may not be able to control life situations, the patient learns that his/her power involves developing abilities by identifying options and making a choice for how to deal with stressful or negative events. Using operant conditioning principles, the practitioner can develop a list of reinforcements or alternate, nondestructive behaviors that can be used to reduce the frequency or severity of the NSSI.[47]

Strengthen the Support System

Adolescent patients at risk for NSSI typically have issues with attachments, difficulties with peer relationships, ineffective communication with their families, and, in particular, strained or difficult relationships with primary caregivers. The treating clinician wants to promote overall awareness and education with their caregivers and/or involved family members. The patient needs to work on healthy engagement and learn how to make and maintain friends. Accessing community support groups is considered a critical component of preventing NSSI.[45]

Treatments

Psychodynamic Psychotherapies

Transference-focused psychotherapy (TFP) was originally developed for intensive treatment for patients with

BPD. This treatment approach shares the common goals of treating suicidal behavior, self-injury, and interpersonal chaos and improving affective regulation and behavioral control. In general, TFP aims to help patients change their emotional and behavioral responses to stress, especially in an interpersonal context, by providing extensive opportunities for discussion of the patient-therapist relationship during regular therapy sessions twice per week for 1 year.[48] The relationship is conceptualized as both a microcosmic representation of how the patient approaches other relationships in his or her life and as a holding environment in which the patient can safely express himself/herself without fear of losing the therapist.[49] Through an intensive focus on the therapy relationship as the primary content of sessions, the patient can learn new understandings of and responses to interpersonal relationships as well as the necessary affective and behavioral control techniques required for fostering healthy interpersonal relationships.[49]

Mentalization-based therapy (MBT) is another treatment for BPD derived from the psychodynamic theory of attachment. MBT aims to increase the patient's ability to have mindfulness, to focus attention on and understand thoughts and emotions in an attempt to interpret accurately one's own and others' behaviors, thereby improving interpersonal functioning.[50]

The general theoretical premise of MBT is that the dysfunction results from a patient's lack of insight into the relationships between thoughts and emotions, which adversely affects interpersonal attachments. This therapy is achieved by an 18-month partial hospitalization program that consists of a 1-hour individual psychoanalytic therapy session, three 1-hour group analytic psychotherapy sessions, a 1-hour psychotherapy session aimed at teaching psychodrama techniques, 1-hour weekly community meeting, a monthly meeting with a caseworker, and a monthly medication management meeting with a psychiatrist.

Across all treatment modalities for self-injury interventions, one common theme is regular therapeutic contact during a relatively long-term course of treatment. TFP, CBT, PST, DBT, and MBT all require intensive contact with a treatment provider for an extended period of time unlike standard short-term therapies. Another recurrent theme is the acquisition of new skills during treatment. The success of the treatment depends on the patient's ability to learn how to cope differently.

Conclusion

For some patients, adolescence is a time of discord. It is a time to distinguish between parental values and one's values. The process can be agonizing and disconcerting at times and can result in the adoption of some maladaptive coping mechanisms such as self-harming behavior. The information above provides pediatricians, health care providers, and mental health professionals with resources useful for helping clients who self-injure. The goal for medical and mental health care is to establish a safe doctor-patient relationship that will help the patient accept services and participate actively in treatment. Helping adolescents who self-harm is challenging for all health care professionals. A nonjudgmental and respectful stance toward the adolescent is the best approach. Forming a trusting and safe relationship with the adolescent increases the chance of being effective for health care professionals with this population.

Strategies are provided for pediatricians, family practitioners, and mental health clinicians to use when working directly with adolescents who self-injure. Once NSSI is identified, it is essential to make the appropriate referrals to psychosocial and behavioral therapies. As indicated by Kerr et al,[5] behavioral health providers are best suited to treat the self-injurer from a long-term perspective, and it is advisable for pediatric, family medicine, and primary care practitioners to make the appropriate referrals. With that being said, treatment of self-injury among primary care patients begins with an effective patient-physician relationship. Pediatricians, family medicine physicians, and primary care physicians have a unique opportunity to monitor the patient over a longer period of time than a psychotherapist might. This type of rapport may allow for effective follow-up and substantial reinforcement of new skills learned in therapy.

There is a need for research into the effectiveness of treatment for NSSI exclusively and for studies that use a purely adolescent sample. This review highlights the gap in knowledge regarding adolescent NSSI; there is no strong evidence for the efficacy of any specific treatment. Additional research is warranted so that health care providers and mental health professionals can effectively treat the adolescent patient with NSSI.

Author Contributions

Both authors contributed to the manuscript drafting. SL wrote the final manuscript.

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