



## Understanding Self-Injury

Research by Dr. Janis Whitlock and colleagues in the Bronfenbrenner Center for Translational Research at Cornell University has contributed to our basic understanding of non-suicidal self-injury. Their latest findings shed light on general trends, gender differences, and on the complex association with suicide.

by Amanda Purington and Karene Booker  
Revised by Julia Chapman (March 2019)\*

In 2004, [Dr. Janis Whitlock](#), research scientist at the Bronfenbrenner Center for Translational Research at Cornell University, launched a research program on what is now referred to as non-suicidal self-injury (NSSI). NSSI has been known by many terms: “cutting,” “self-mutilation,” “self-inflicted violence,” “self-injurious behavior,” or simply “self-injury.” It is defined as the deliberate, self-inflicted destruction of body tissue without suicidal intent and for purposes not socially sanctioned. It can include a variety of behaviors, but is commonly associated with scratching, cutting, or carving the skin, banging or punching objects or oneself, and biting oneself. Most common locations for these injuries are arms, wrists, hands, and thighs.

A review of existing research literature at the time revealed there was little information available to answer even basic questions about self-injury in the general population such as how common is it, who does it, and why? Because NSSI so often occurs in private, it can be difficult to detect individuals who are self-injuring unless they are being treated for related conditions, such as depression or anxiety.

“The only research on self-injury was based on clinical populations, prison populations, or very small convenience samples,” Whitlock said. “There was very little understanding of self-injury prevalence and behavior among average young people who were otherwise functioning relatively well and there was no consistency or rigor in how self-injury was defined and measured.”

Since then, Whitlock’s research, along with a growing number of other researchers in this area, has generated novel and useful knowledge about the basic patterns of self-injury and related mental health conditions in adolescents and young adults through large cross-sectional and longitudinal studies and, more recently, through randomized control trials of potentially efficacious interventions.



*“Self-injury is an overlooked public health issue. Far from being a rare fringe behavior, it was surprisingly common among the adolescents and young adults we surveyed.”*

\*Amanda Purington is a research support specialist in the Bronfenbrenner Center for Translational Research. Karene Booker is an extension support specialist in the department of human development. Julia Chapman is a Research Aide in the Bronfenbrenner Center for Translational Research.

### Signs of Self-Injury

- Unexplained or clustered wounds or scars;
- Fresh cuts, bruises, burns, or other signs of bodily damage;
- Bandages worn frequently;
- Inappropriate clothing for the season (e.g., always wearing long pants or sleeves in the summer);
- Constant use of wristbands or other jewelry that covers the wrist(s) or lower arms;
- Unexplained cutting implements (e.g., razor blades or other equipment); and
- Heightened signs of depression, anxiety, or social withdrawal.

### Risks of Self-Injury

- Infection from injuries or sharing implements;
- Accidental severe injury such as life threatening blood loss or infection;
- Scars and disfigurement from healed injuries;
- Worsening shame, guilt, or other painful emotions; and
- An increased risk for suicide.

In 2005, Whitlock and colleagues conducted the first large survey-based study of self-injury in a general population of adolescents and young adults in the U.S. Using a web-based survey of students from two colleges in the northeast, the team examined self-reports of self-injurious practices, age of onset, forms, severity, intention, and help-seeking behavior. Based on responses from 3,069 students, their findings contributed to the emerging profile of self-injury: that it was happening in individuals who had never been in therapy for any reason, was surprisingly widespread, and that few disclosed their behavior and sought help (Whitlock, Eckenrode, & Silverman, 2006).

Whitlock et al. (2011) replicated the study in 2006–2007 with an even larger randomly-drawn sample from eight colleges in the northeast and midwest and found that of 11,529 students, 15.3% of the participants reported a history of self-injury and 6.8% had self-injured within the previous year. Most of the students (86.4%) who had self-injured had done so more than once and nearly half (42.8%) reported self-injuring more than 6 times. The average age for starting self-injury was 15.2 years of age.

A 2014 systematic review by Sarah Swannell and colleagues, based on Whitlock’s studies as well as

a number of other epidemiological studies from around the world, found similar lifetime prevalence estimates, reporting that 17.2% of adolescents, 13.4% of young adults, and 5.5% of adults. These researchers also found no significant differences based on geographic location for the countries that were included in the review.

“Self-injury is an overlooked public health issue,” noted Whitlock. “Far from being a rare fringe behavior, it was surprisingly common among the adolescents and young adults we surveyed.”

In regard to gender, Whitlock et al. (2011) found that females were more likely than males to have reported a history of self-injury, consistent with other studies that have found differences in lifetime prevalence rates by gender. However, males and females were equally likely to have reported self-injuring within the past year, consistent with studies of college prevalence rates.

A 2015 meta-analysis, found that women were 1.5 times more likely to report engaging in NSSI, a relatively small effect size. The same study found that women were more likely to engage in cutting, biting, scratching, pinching, hair pulling, and preventing wounds from healing as a form of self-injury than men. No differences were found in the size of gender difference by age. However, there was a significant difference found in clinical samples compared to community and college samples, such that clinical samples exhibited larger gender differences, with women being more likely to self-injure than men (Bresin & Schoenleber, 2015).

The most significant differences in the prevalence of self-injury among young adults in Whitlock's studies are associated with differences in sexual orientation. Overall, non-heterosexual individuals reported significantly higher levels of self-injury. Other than the finding that mostly heterosexual males were 2.1 times more likely than exclusively heterosexual males to report self-injury, these effects were largely confined to females. Women in all sexual orientation categories were more likely to report self-injury than their male counterparts. However, non-heterosexual women, particularly bisexual women, were at much greater risk. Specifically, heterosexual females were 1.5 times more likely to report self-injury than their male counterparts, mostly heterosexual females were 2.1 times more likely, bisexual females were 6.2 times more likely, mostly gay females were 5.5 times more likely, and lesbians were 2.4 times more likely to report self-injury than their male counterparts.

A 2015 meta-analysis of research on the relationship between sexual orientation and NSSI aggregated findings from 15 studies and found similar results, that sexual minority youth are more likely to self-injure, and that this risk is even higher for those identifying as bisexual.

Researchers suggest that these differences may be attributable to minority stress theory, which suggests

### Healthy Ways to Cope with Stress

- Exercise – physical activity is one of the most important ways to lower stress and lift your mood;
- Eat well – eating regular healthy meals will help you have the energy you need to tackle your day;
- Get enough sleep – a good night's sleep will help you recharge and think clearly;
- Laugh out loud – head off stress by watching a funny movie or cartoons;
- Have fun with friends – friends can help you work through your problems and see the brighter side of things;
- Talk to someone you trust about what's bothering you;
- Take time to relax – do something you enjoy like: read a book, listen to your favorite music, practice relaxation techniques, write in a journal, or work on a relaxing project;
- Manage your time – feeling overwhelmed or unprepared can be stressful; planning ahead and organizing what you need to do can help;
- Help someone – get involved in an activity that helps others;
- Learn ways to better deal with anger – try to calm yourself down before doing or saying anything, tell the other person what the problem is and how it makes you feel, try to think of some solutions and what good and bad results might be; and
- Get help from a doctor, therapist, or support

that stressful experiences such as discrimination and prejudice may lead to detrimental health effects. Individuals who identify as bisexual may face additional stressors, such as feeling like they lack support from both the heterosexual and gay and lesbian communities, and this additional stress may explain the increased risk for NSSI (Batejan, Jarvi, & Swenson, 2015).

In addition, Whitlock's team (2011) found significant differences in the forms that males and females used to self-injure. Females were more likely to endorse scratching and cutting and report injuries to their wrists, arms, and thighs. Males were more likely to endorse punching objects with the intention of hurting themselves and report hand injuries. The authors suggest that the strategies preferred by males can more easily be explained away as outward-focused aggression which may mask self-injurious intent and support the common misperception that self-injury primarily affects females. Similar results were recognized in Swannell et al.'s (2014) systematic review, as well.

Overall, most students with a history of self-injury reported using it as a means of regulating their emotions. The study found females were more likely than males to report using self-injury as self-punishment or experiencing an uncontrollable urge to self-injure. Males were more likely than females to use self-injury for sensation-seeking and to self-injure while angry or under the influence of drugs or alcohol. Males were also more likely to engage in self-injury in a social context rather than self-injuring alone.

Raising concern about assessment and treatment, the study also found that close to a quarter of the students with a history of self-injury indicated that no one knew about it. Even among those who had attended therapy for any reason, only about 17% had disclosed their self-injury to a health care provider.

**Self-Injury and suicide: distinct yet related**

### **What You Can Do If You Suspect Self-Injury**

- Let him or her know you are concerned and would like to help. Be direct and honest about what you are seeing and why you are concerned.
- Respond calmly with what has been termed “respectful curiosity” (e.g., listening and asking questions in a way that demonstrates care and respect). Avoid displaying extreme reactions like shock, pity, or criticism because such reactions will likely limit the opportunity to talk, build trust, and assist in opening the door to recovery.
- Help him or her explore more positive strategies for coping with intense feelings and stress such as talking with a friend, exercising, or participating in therapy. See sidebar on healthy ways of coping with stress.
- Actively help make connections with a professional therapist or counselor. It may be helpful to make an appointment, and accompany the person to the first visit. The S.A.F.E. Alternatives website provides a listing of therapists by state that are trained in self-injury treatment (<http://www.selfinjury.com/referrals/therapists>). Another good resource for finding a local therapist is the American Psychological Association psychologist locator at <http://locator.apa.org>.
- If you or a loved one is suicidal or in emotional distress, you can call the National Suicide Prevention Lifeline 24-hour crisis line at 800-273-TALK (800-273-8255).

Self-injury is not generally meant as a suicide attempt. It is an unhealthy attempt to cope. This is not to say there is no relationship between self-injury and suicide. Findings from Whitlock's research and those of other researchers in the field show that NSSI is associated with increased odds of suicide attempt. In Whitlock and colleague's 2013 study on the relationship between NSSI and suicide, they found that about 40% of individuals who use self-injury also report some suicidal thoughts or actions, consistent with other research in this area (Ribeiro, et al., 2016; Whitlock & Knox, 2007). Notably, they found that any NSSI history prior to STB tripled the risk for concurrent or later suicide behavior even when factors common to both were considered. Increased risk of NSSI was predicted by lifetime NSSI frequency, low presence of meaning in life and history of having been in therapy (this is a proxy for complicated mental health challenges). Identifying parents as a source of comfort when sad, anxious, or depressed was a strong protective factors. These findings led the authors to conclude that self-injury may serve as a "gateway" to suicide by reducing inhibition to self-harm through habituation (Whitlock, et al., 2013).

## Recovery

In recent years, Whitlock and colleagues turned to mixed method investigation of why people stop self-injuring, with a focus on examining the role of parents in the recovery process. Findings from Whitlock's previous work indicate that communication with parents is one of the most important protective factors (and risk factors when absent) in later risk of suicide among individuals with self-injury history (Whitlock et al., 2013). The recovery study was intended to find out why parents are so important in self-injury and mental health recovery and, more importantly, what particular roles they play in these processes.

This line of inquiry led to a set of interviews with parents and self-injurious youth as well as to surveys with parents of youth who self-injure related to the secondary stress they face. The interviews led to a recently published book by Whitlock and her collaborator, Lloyd-Richardson (2019) and to an in-depth look at the various sources of stress parents of self-injurious youth face (Whitlock, Lloyd-Richardson, Fisseha, & Bates, 2017).

"My ultimate goal is to develop interventions aimed at helping parents capitalize on their influence," Whitlock said. "By interviewing young people with self-injury history and their parents, we have learned about common experiences regarding self-injury disclosure, recovery pathways, and the influence parents and families have on these processes. Elizabeth and I wrote *Healing self-injury: A Compassionate guide for parents and other loved ones*" with the aim of supporting parents and guardians since they are both critical allies for youth and so clearly need support for themselves.

"I am concerned about the pressures young people face today and the unprecedented opportunities for sharing maladaptive coping strategies like self-injury through the media. Yet, I am also inspired by the stories of resilience and recovery. As one who has stopped self-injuring said, 'recovery is a long hike, but do it anyway. The view from the top is amazing.'"

## Further Resources

The Cornell Research Program on Self-Injury and Recovery (CRPSIR):

<http://selfinjury.bctr.cornell.edu>

Mayo Clinic:

<http://www.mayoclinic.com/health/self-injury/DS00775>

Self-Injury Outreach and Support:

<http://sioutreach.org/>

S.A.F.E. Alternative (Self-Abuse Finally Ends):

<https://selfinjury.com/>

## References

- Batejan, K. L., Jarvi, S. M., & Swenson, L. P. (2015). Sexual orientation and non-suicidal self-injury: A meta-analytic review. *Archives of Suicide Research, 19*(2), 131-150.
- Bresin, K., & Schoenleber, M. (2015). Gender differences in the prevalence of nonsuicidal self-injury: a meta-analysis. *Clinical Psychology Review, 38*, 55-64.
- Ribeiro, J. D., Franklin, J. C., Fox, K. R., Bentley, K. H., Kleiman, E. M., Chang, B. P., & Nock, M. K. (2016). Self-injurious thoughts and behaviors as risk factors for future suicide ideation, attempts, and death: a meta-analysis of longitudinal studies. *Psychological medicine, 46*(2), 225-236.
- Swannell, S. V., Martin, G. E., Page, A., Hasking, P., & St John, N. J. (2014). Prevalence of nonsuicidal self-injury in nonclinical samples: Systematic review, meta-analysis and meta-regression. *Suicide and Life-Threatening Behavior, 44*(3), 273-303.
- Whitlock, J. (2009). The cutting edge: non-suicidal self-injury in adolescence. Retrieved from Cornell University, Act for Youth Center of Excellence website: [http://www.actforyouth.net/resources/rf/rf\\_nssi\\_1209.pdf](http://www.actforyouth.net/resources/rf/rf_nssi_1209.pdf)
- Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics, 117*(6), 1939-1948.
- Whitlock, J.L. & Knox, K. (2007). The relationship between suicide and self-injury in a young adult population. *Archives of Pediatrics and Adolescent Medicine, 161*(7), 634-640.
- Whitlock, J., Muehlenkamp, J., Eckenrode, J., Purington, A., Abrams, G. B., Barreira, P., & Kress, V. (2013). Nonsuicidal self-injury as a gateway to suicide in young adults. *Journal of Adolescent Health, 52*(4), 486-492.
- Whitlock, J., Muehlenkamp, J., Purington, A., Eckenrode, J., Barreira, P., Baral-Abrahms, G., Marchell, T., Kress, V., Girard, K., Chin, C., & Knox, K. (2011). Non-suicidal self-injury in a college population: General trends and sex differences. *Journal of American College Health, 59*(8), 691-698.

Development of this publication was supported by Smith Lever funds from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed here are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.