

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
Substance Abuse and Mental Health Services Administration
(SAMHSA)**

**Suicide Prevention Branch's
Research Highlights Podcast Series**

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Presenter: Dr. David Klonsky**

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PROCEEDINGS

THE OPERATOR: This is the conference coordinator. I'd like to advise all parties that today's conference is being recorded. If you do have any objections, you may disconnect at this time. Thank you. You may proceed.

MS. CHELSEA BOOTH: Thank you very much. So welcome, everyone, to the Research Highlights Podcast Series, presented by the Substance Abuse and Mental Health Services Administration, Suicide Prevention Branch. This series is part of an effort to bring research findings with crucial public health significance to the prevention and treatment community. My name Chelsea Booth, Public Health Advisor at SAMHSA, and I'm your host today.

So today's episode features Dr. David Klonsky, associate professor of psychology at the University of British Columbia in Vancouver. He is the past president of the International Society for the Study of Self-injury, associate editor for the Journal of Suicide and Life Threatening Behavior, author of the book, *Non-Suicidal Self-Injury*. His research examines self-injury and suicide, as well as associated disorders of emotion and personality.

Dr. Klonsky's research has been recognized by awards from several organizations, including the Society for Clinical Psychology, American Psychological Foundation, and the Association for Psychological Science. Dr. Klonsky, we are absolutely delighted to have you here today.

DR. DAVID KLONSKY: Thank you very much for the opportunity. I will be talking about non-suicidal self-injury, and in particular, focusing on the nature of non-suicidal injury. But also paying special attention to the overlap between NSSI and suicide.

And so here's what I'll be covering. First, to make sure we're on the same page, I'll talk about what is self-injury, then discuss who self-injures, including the psychological characteristics of people who engage in self-injury, followed by the question of why people self-injure, which is in some ways the most interesting and important question, in part because on the face of it, self-injury can seem like a counterintuitive behavior. And in part, because understanding why people self-injure has direct relevance for prevention and treatment.

And finally, I'll turn attention to the question of what is the relationship to suicide, in particular, how does non-suicidal self-injury and suicide attempts, which, on the surface seem similar, how are they different, to the way they co-occur and how do we understand that relationship.

A preliminary note, before we begin, is that throughout the presentation, I will be making sure to distinguish what we know, information that we know, and this is based on a situation where when we have many, many studies that all converge on a particular kind of finding or conclusion. And distinguishing what we know from what we think, which is when we have one or two studies, for example, telling us something. And finally, what we don't know, but what we might have an educated guess about, what we might speculate on. And it's certainly okay to have educated guesses, but the real key is to

distinguish what we know from what we think, from what we don't know, and I'll be making a concerted effort to do that.

So starting with what is self-injury, the typical definition is that self-injury involves self-inflicted damage to one own's body tissue that is done intentionally. So on purpose. And without suicidal attempt. So this not a suicide attempt, by definition. If we put these different components together, we might get a definition such as this, intentional direct injuring of one's body tissue, without suicidal attempt. And some people are adding the phrase, "For purposes not socially sanctioned." I'll talk more on that in a moment.

There are lots of names for self-injury. I'll be using non-suicidal self-injury, at which also includes the acronym, NSSI. But people have used terms such as self-mutilation, self-injurious behavior, self-wounding, deliberate self-harm, parasuicide, and many others. And sometimes some of these terms are used for meanings that are broader than self-injury. For example, deliberate self-harm is often used to include all forms of self-harm that are intentional, including suicide attempts, including self-injury.

So the key is when having conversations about this topic or when reading papers on this topic is to pay attention to how the behavior is defined because unfortunately, there is this confusion around terminology. In recent years, however, the field seems to be more or less coalescing around the term "non-suicidal self-injury," NSSI.

The kinds of methods involved in self-injury are many. Skin cutting is certainly a

prototypical example. We also see burning, scratching, rubbing skin against rough surfaces, interfering with wound healing, needle sticking. There are many methods of self-injury. We typically do not include behaviors such as overdosing, where the tissue damage is not direct. We don't include eating disorder behaviors, such as bingeing or purging, or alcohol or substance use. Yes, those activities can sometimes cause tissue damage, but the idea is that the tissue damage is more indirect. And when it comes to body piercings and tattoos, these are usually excluded because they fit as more socially sanctioned forms of self-harm.

There is an asterisk there because in talking to people who self-injure, they'll usually agree that by default, piercings and tattoos are not self-injury, but so often say they can be used for self-injury. So sometimes the boundaries can get blurry. Sometimes it might depend on intent. It's also important to keep in mind that there is tremendous variation in how self-injury manifests, and among people who engage in the behavior.

For example, people who self-injure can differ in how frequent, how often they self-injure and the kinds of methods they use, and in the number of methods they use. And how much medical damage is caused as a result of this self-injury. They can differ in terms of the context in which they perform self-injury; for example, doing it only in private, as opposed to self-injuring in the presence of others. The motivations, as we'll talk about in some detail later on, motivations can differ for self-injury.

So people can differ quite substantially in their desire to stop. Most people who self-injure make frequent efforts to resist self-injurious urges, but there is certainly a subset

of people who self-injure who could argue quite intelligently that self-injury works for them. They're not hurting anybody else. They're not suicidal, and they express no desire to stop engaging in the behavior.

So now turning to the issue of who self-injures. I'm going to start by showing some images are quite familiar to many of us. These are people who disclosed self-injury histories. They include Princess Diana, Angelina Jolie, Christina Ricci, Drew Barrymore, and not just women: Johnny Depp, Eminem. And I show these examples in part because self-injury can be associated with a lot of stigma. People can think of self-injury as meaning impairment. So I want to remind us that people who self-injure can also be very successful, very talented, very kind and charitable, very attractive. And that we want to be careful about attaching too much stigma or too many negative assumptions to the term of self-injury.

A very nice example of this is Dr. Marsha Linehan, who is one of the preeminent researchers and psychologists over the last several decades. For those who don't know, she developed dialectical behavior therapy, which is one of the most effective treatments for suicide and self-injury, and also borderline personality disorder. Dr. Linehan, not long ago, disclosed in a *New York Times* interview, an extensive history of self-injury, and is another reminder that having history of self-injury and having an incredibly productive, meaningful, positive life are not mutually exclusive.

Here's another example of a well-known self-injurer. Obviously not a human; this is Dobby, a character from both the movie and the books of Harry Potter. And Dobby

self-injures on multiple occasions; sometimes burning his hands, sometimes hitting himself in the head. He does it specifically when he feels he's done something wrong and feels very upset about that. And I mention this because more and more we're seeing self-injury portrayed in the media, whether it's movies or music, or magazines or websites. And there is some evidence that media can play a role in leading people to come upon the idea of self-injuring, potentially in normalizing self-injury, and there are some good people, such as Stephen Lewis at the University of Guelph and Janis Whitlock at Cornell, who study this. This could be a whole other talk, but this is an important context to keep in mind, especially for those who treat adolescents who self-injure and who are plugged into various forms of media.

Turning to some data on who self-injures. Here are some prevalence rates. These are best estimates, based on several different studies. Young adolescents, there appears to be about an eight percent lifetime rate. That rate increases to 14 to 15 percent in the high school students, and approximately 17 percent in University students. These rates are for people who have ever self-injured. So if we were to focus only on people who self-injure frequently or habitually, the numbers would be lower. Still, even with this more liberal definition, these rates might be higher than some people might anticipate.

Best estimates in general adult population are about four to six percent. And what's interesting about this is it might indicate a cohort effect, such that previous generations engage in self-injury less than the current generation of adolescents and young adults. At the same time, this lower rate in adults might simply be a memory or recall effect. It might be that for a lot of people who self-injure a few times in their teens, if you ask

them 20, 30, 40 years later, they simply don't remember.

What's clear though is that rates are highest in adolescent clinical samples, especially adolescent psychiatric inpatients, where routinely about half or sometimes more than half has histories of self-injury.

Turning to the psychological characteristics of people who self-injure and we were fortunate enough to be able to draw from dozens and dozens of studies on this topic, the one theme is the presence of negative emotions or emotionless regulation. People who self-injure experience more intense and more frequent negative emotions than other people. This includes depression. This includes anxiety. This includes anger at themselves and others. But in particular, and we're learning this more in recent years, there seems to be a pronounced self-directed flavor to the negative emotion, self-directed anger, for example.

There also is a large overlap with suicidal ideation and attempts. We will address this more later, but it's important to be upfront about that, even though there are very good reasons to treat these behaviors separately, they also quite often co-occur, and so self-injury should be thought of as one of the strongest risk factors for suicide attempts.

Intense self-directed negative emotion might be the one phrase where if we had to limit ourselves to one phrase, this might be the phrase that best identifies those who self-injure. We've known about the negative emotion, generally, for many years. In recent years, there's been a lot of research, including some very nice studies by Joe Huley

(ph) at Harvard University, showing that many different populations, including an indirect self-harm population, such as substance use, for example, are high on negative emotionality, as are self-injurers. But variables, such as self-criticism or self-directed anger, self-degradation, those seem to be particularly pronounced in unique ways in people who self-injure. So that might be, in some way, a gateway variable to choosing self-injury, as opposed to many other methods to cope with negative emotions.

Turning to the question of abuse histories. There is certainly a long tradition in the theoretical literature, going back several decades to implicate childhood abuse and the etiology, or the development or the maintenance of self-injury. Here are some examples, where self-injury is described as a form of reenacting abuse perpetrated on people or self-injury as a manifestation of sexual abuse. Here at the bottom we see the conclusion that abuse contributes heavily to the initiation of self-destructive behaviors.

But it looks like this relationship is being overstated, somewhat. Here results from a fairly large meta-analysis of 44 different studies. And the median FIFO coefficient, which could be thought of as a correlation, is .23. And this is quite small by any standard. It's above zero, but it's small. And so this might be the best way to think about the role of abuse histories, is that abuse histories, yes, can contribute to the negative emotions driving self-injury. The negative emotions in general that may be self-criticism in particular, but many who self-injure don't have abuse histories. And many with abuse histories don't self-injure. So it's important that we not link these two phenomenon too closely together.

And I do know of a situation, for example, an adolescent girl who self-injured, seeking treatment was being asked repeatedly by her therapist, if she's sure that she hasn't been abused by a parent. Just a really sort of terrible set of questions to be asked when it's not relevant and it certainly is not useful. It certainly does not feel good for someone who you misunderstood by having it be assumed that they have an abuse history.

Turning to the question of why people self-injure. And again, I really think this is, in some ways, a key question. We spend most of our lives trying to avoid pain and injury. And so it can seem counterintuitive to people that there is subset of individuals who engage in self-injury and get something out of it. So making clear, in a very practical and useful way, that motivations for self-injury are very useful for understanding the behavior, and of course, very useful for knowing how to best help people who self-injure.

Now, until about 10 years ago, give or take, most of what was published about self-injury was theoretical. And here is a sampling of those theories. Starting from the top, we see anti-disassociation, the idea that self-injury is used to end the experience of depersonalization or disassociation; in other words, that they'll feel real again in some way. We see anti-suicide; that self-injury is a way to replace or compromise with the urge to commit suicide.

Emotion regulation, that self-injury is used to alleviate intense negative emotions.
Intrapersonal boundaries, that self-injury is a means of asserting one's identity or

independence from others. Inter personal influence, that self-injury is about seeking help from others, manipulating others, or in some way seeking attention or desired responses from others. Self-punishment, that self-injury is essentially a way to punish oneself or express anger towards oneself. Sensation seeking or excitement-seeking, that self-injury is akin to bungee jumping or skydiving; something done for the thrill. And some sexual theories from psychodynamic traditions, that self-injury is used to control or distract from uncomfortable sexual urges.

And the key point is that some of these theories may sound more plausible than others, but we really don't know which theories are the most accurate, which theories are the most widely relevant, until we actually do the research. Fortunately, in the last 10 years or so there has been an explosion of research on this question. And as you'll see, we were able to make some fairly definitive statements about motivation.

So first, it's important to consider how we would investigate this. And there have been three primary sources of evidence. The first is simply studies that ask people to report on the reasons or their motivations. Typically, these studies will have long lists of possible reasons or motivations and will ask people who self-injure to identify the ones that are relevant for them.

Second, we have studies that address the experience of self-injury. What are the events? What are the thoughts? What are the feelings that precede self-injury, and then what happens after self-injury and how can we use that information to understand why people engage in the behavior. And third, we have laboratory studies of self-injury

proxies. Sometimes people have done laboratory studies where they'll use pain tasks, such as the cold pressor test, and other kinds of pain tasks to try to capture the effects of self-injury in controlled settings. Often these studies will have different kinds of mood inductions so we can look at the relationship between simulated self-injury and mood.

So we have three different kinds of evidence. And what we're going to talk about next is what we've learned from these kinds of studies. Now, here is a graph, a figure which attempts to show all in one slide, everything we've learned from decades of research. So that is a bit difficult. And as a result, the slide is a bit busy. But what we see here on the left are these different theories. And on the right is indication of evidence for the theory. The type of letter simply indicates the type of evidence that was examined. So R stands for studies of reasons for self-injury. P stands for phenomenology, which is just a fancy word for saying they studied the experience of self-injury. And L stands for these laboratory studies of self-injury proxies or simulations.

And in letter is capitalized, if these studies are on strong evidence of the motivation, in particular, if the motivation was relevant for a majority of the sample. And the letter is lowercase if the evidence seemed to be relevant for some people who self-injure, but not the majority. So what should stand out on this slide, first and foremost, is the evidence for emotion regulation. Not only does emotion regulation have more support than other studies, but every study to examine emotion regulation not only found some support, they found strong support. And this includes several studies of reasons, several studies of the phenomenology of the experience, and several laboratory studies.

Now, we do see evidence for some other motivations as well, self-punishment, disassociation and intrapersonal influence stand out to some extent. So now let's talk in some more detail about the findings from these studies. I'm going to give illustrations of studies from the two primary sources of evidence, starting with a study on reasons or the motivations for self-injury. Now, here's a, first, actually, a summary of the evidence. This is aggregating across a couple dozen studies. And across a couple dozen studies, emotion regulation is the only motivation to be endorsed by a majority of self-injurers as indicated on the slide.

In any given study that examined this, between 50 and 95 percent of self-injurers endorsed the motivation. And there are some examples of this motivation below that to release emotional pressure that builds up inside me, to get rid of intolerable emotions, to control how I am feeling. Overwhelmingly, emotion regulation, and in particular, regulation of negative emotions is the primary motivation people report.

In second place, so to speak, are self-punishment oriented motivations. These are endorsed, on average, by more than half of self-injurers. Not quite at the same overwhelming rate as emotion regulation, but it's the only other motivation that tends to be endorsed by a majority of people who self-injure. And this includes reasons such as to express anger at myself, to punish myself.

And I should make clear here those different motivations are not mutually exclusive. In fact, just like anything we do, take the example of eating; you might ask people why do

you eat? Well, certainly, one motivation might be for the energy and to stay alive, but we also might eat because it tastes good. We also might eat because it provides a nice social venue to interact with others. Sometimes we eat for religious rituals. So there are many motivations; and the same for self-injury. There are often many motivations. The key is to find out which are the most common, and then also to find out what are some of the ways where different motivations might overlap, conceptually. And we'll talk more about that soon.

So back to the task at hand, we've covered the two most common motivations; emotion regulation, followed by self-punishment. On average, what appears to be the third most common reason is anti-suicide. Examples include: to avoid the impulse to attempt suicide, to stop suicidal ideation, or attempts to stop me from killing myself. Anti-disassociation is approximately the fourth most common. "I know I am capable of physical pain." "I feel like myself again." "I self-injure to feel real." And now we start getting into some motivations that are less common. Still endorsed by some people, but a minority of people and intrapersonal influence examples of this include: "To let others know what I'm going through;" "To get those around me to understand what I'm going through;" "To get reactions out of people."

For many who are unfamiliar with self-injury, they'll assume that self-injury is all about intrapersonal influence. That self-injury is mainly to get attention in some way. Our best available data do not support that. They say that self-injury can be used for this motivation, but most often is not. I suspect one thing that's happening is that when people happen upon someone's self-injury, they might notice strong reactions in

themselves and sometimes what we do, if we have a strong reaction to something, we leap to the assumption that the person did the behavior to elicit the strong reaction. But it appears that that's not, on average, accurate. A small minority of people will use self-injury for sensation or excitement seeking to feel exhilarated. I thought it would be fun. But this is relatively rare already.

Now, turning to a second primary source of evidence: the experience of self-injury. There have been a few studies on this topic. And the convergence among the different studies has been impressive. So what I'm going to do is show results from one study that illustrate the kinds of information that is obtained, both to illustrate the phenomenon in general, but also because this study included some extra detail analyses at the end that help us make sense of the relationship between the experience of self-injury and help us link that experience to factors that actually encourage self-injury more directly.

So this study was interested in the emotions people experience. And the study aimed to be very exploratory. The study did not want to come in with assumptions about what emotions would be most relevant, and did want to come in looking at only a subset of emotions in a way that could bias the outcomes of the study. So this study looked at 40 different emotions as they were reported to occur by people who self-injure before, during, an instance of self-injury. And so examples include negative emotions such as angry, sad, lonely, frustrated, and so on.

The study also examined positive emotions, like happy, relieved, hopeful, or satisfied; also more neutral or maybe ambiguous emotions like bored, or restless, or apathetic;

and, even some emotion states that are more dissociative in nature, like feeling unreal or mesmerized or in a trance.

And here were the findings. Before self-injury, people most often reported feeling overwhelmed, sad, and hurt, emotionally. During the self-injury, people felt angry at themselves; perhaps to giving into the urge of self-injure. Still hurt emotionally and isolated, perhaps for engaging in a behavior that's not typically socially accepted. And after self-injury, people felt relieved and calm, even if they also felt angry at themselves.

If I could only show one slide to capture what we know about self-injury, it probably would be this slide. If people can go from feeling overwhelmed, sad and hurt, emotionally, and very quickly, as a result of the behavior, feel relieved and calm, even if also angry at themselves, that gives a very practical and a clear explanation for why people might engage in this behavior.

Here, we're going to look at some figures to illustrate how not all negative emotions are behaving similarly. In this example, we have a low arousal negative emotion, such as sad and lonely. And what we see is not much of a decrease from before self-injury to after self-injury. People are around the level of a three on this scale for how often they experience these emotions before self-injury and maybe a little lower, but essentially, roughly around the three after self-injury. But if we turn to some high arousal negative emotions, like overwhelmed or anxious, we see much more of a drop. And this effect is roughly around the full standard deviation; so pretty large effect by psychological, scientific standards.

And if we look at low arousal, positive emotions, in this case, relieved and calm. We see the largest effects, the largest increases. So it looks like we can be a little more specific than just negative emotion is going down in general. It looks, in particular, like it might be negative arousal, going down, in general and being replaced with low arousal states like calm and relief.

Here are these changes reported in terms of effect size. Relief goes up more than two standard deviations. Calm goes up more than one standard deviation, and overwhelmed and anxious both decrease quite a bit. And for those of you not familiar with Cohen's d as an effect size, typically anything .8 and above is considered large. So these range from large to extremely large changes.

You might recall when we were discussing a moment ago, reasons for self-injury. That the first reason listed for emotion regulation was to release emotional pressure that has built up inside of me. And that item in particular gets endorsed a lot. And so what we might be seeing reflected in the endorsement of that item, the emotional pressure piece, is also this high arousal piece. In short, it might not just be negative emotions in general that decreases as a result of self-injury. Self-injury might be, in particular, an intervention for these high arousal, high agitation, and high-pressure emotion states.

So if we turn back to our different theories, we can be somewhat specific about the theories that are most and least relevant. And in particular, emotion regulation appears to be relevant to almost everybody who engages in self-injury to alleviate intense

negative emotions. And we can be even a little more specific and say that self-injury is most often used to alleviate intense, negative arousal.

But also, a majority of people who self-injure endorse these self-punishment kinds of motivations. So we don't want to lose sight of the fact that there are multiple motivations and that it's not exclusively about emotion regulation.

So where are we and where might we want to go? While we've discussed how there are these multiple motivations and we have not, however, yet discussed how these different motivations may overlap, conceptually, or might overlap, empirically. So we could benefit from having an organized and conceptual framework for these different functions. We also might benefit from a valid and comprehensive method for assessing these functions. The various studies that I've cited have used many different kinds of measures for motivations or for reasons. Most of them were lists that are created for the purposes of the study, where people just put a bunch of potential reasons onto a questionnaire and went with it.

None of the lists are comprehensive in covering all the different kinds of motivations that we've been talking about. And they also tend to lack typical psychometric qualities that we expect from measures, such as scales getting at different motivations with known reliability and validity. In short, it would be great for both research and clinical purposes to have a valid and comprehensive method of assessing these different functions.

So out of those considerations came the inventory of statements about self-injury, which is a measure of assessing self-injury motivations. This measure, the I-SAS assesses 13 functions of self-injury. There are three items per function. So there is a -- this is a 39 item measure. And the properties of this measure were initially published in 2009 in non-clinical samples, but have since been reported in numerous other studies and clinical samples in both adolescents and adults, in other languages, other than English.

And here on the left are the different motivations examined on this measure. And on the right are sample items. So for example, on the left, you'll notice affect regulation, which is being used as a synonym for emotion regulation, self-punishment, anti-suicide, anti-disassociation, intrapersonal influence, sensation seeking. These are some of the motivations that we've already discussed and that have been examined in the literature. But also on the left you'll see motivations that we have not yet talked about but that are often seen clinically, like peer bonding, self-care, moving towards the bottom, toughness, revenge.

Here's how the I-SAS works. All the items begin with the stem, "When I harm myself I am..." And so for example, starting with affect regulation, if we look to the right, we see a sample item, "When I harm myself, I am calming myself down." And people can rate that as being highly relevant for them, somewhat relevant, or not at all relevant to their self-injury.

These are data from an initial sample, and this is a college sample of those who self-

injure, who were given the I-SAS, a sample of 235. But fortunately, and I will show some data to this effect briefly as well, these results have replicated in different samples, including clinical samples. But I wanted to illustrate how the measure works because it addresses some of those other fundamental questions we just raised, such as can we have an organized and conceptual framework for these many different motivations?

So what you see here are the results of a factor analysis of the different functions. The functions are on the left. And on the right, you see what turned out to be a very robust two-factor solution. And essentially what we have are social functions, and these have to do with peer-bonding or influencing others. Sensation seeking is on that scale because it turns out when people do this sensation seeking form of self-injury, it tends to be a roundup of people, where they're all engaging in some activity.

And then on the right, the far right, we have what are labeled as intrapersonal functions. These are more self-focused functions. And this has to do with regulating one's own emotion, regulating one's own dissociative experiences, regulating one's own suicidal urges, punishing oneself.

And so it looks like that these different motivations indeed do fall into a very clear superordinate structure; social focused functions and self-focused functions. It's also worth noting that emotion regulation, affect regulation, and self-punishment in this study are the two motivations with the highest mean endorsement. This is consistent with the data from the review paper I presented earlier, where emotion regulation and self-

punishment are the only two motivations that seem relevant to a majority of self-injurers. So it's always nice to see the same pattern repeat itself because it increases our confidence that we actually have learned something reliable.

Now, one reason why it's important to consider this two-factor structure of social and self-focus or social and intrapersonal functions is that they do seem to have different clinical implications. And here's a slide showing associations between frequency of different NSSI behaviors and endorsement of social versus intrapersonal functions. And what we see here, for example, is that social functions are, for the most part, unrelated to how often people self-injure, whereas, the self-focus, the intrapersonal functions have correlations with a number of behaviors: more frequent cutting, more frequent needle-sticking, more frequent carving, more frequent banging and hitting oneself.

And if we look at the individual motivations and their correlation with cutting, in this example, we see at the top of the slide we have correlations from all the self-focus, all the intrapersonal motivations: emotion regulation, anti-disassociation, anti-suicide and so forth; whereas, the social functions are not relating to frequency of cutting. And we see a similar pattern when we look at clinical variables that are not directly self-injury related, but that have to do with things like depression or anxiety or borderline personality disorder.

We see that in this case, social functions have small correlations. So in general, if people are reporting more reasons, including social reasons for their self-injury, they will

also tend to be reporting more psychopathology like depression, anxiety and personality disorder. But if we look to the right, the correlations for endorsement of intrapersonal functions of these self-focused functions, those are particularly strong. And in the case of depression and borderline personality, they are significantly stronger relationships. So it does appear to be these self-focused motivations for self-injury that also signal the more pernicious clinical presentation.

And we see this again here when it comes to suicidality. On the left here we have suicidal ideation, a history of suicidal plans, and a history of suicide attempts. And all three of those suicidality variables correlate more strongly with the intrapersonal, with self-purpose motivations for self-injury.

I'm not going to spend too much time on this, but what I do want to make clear is that the I-SAS has been examined in other populations. This is a sample of psychiatric patients from a psychiatric hospital in Chicago. And we again see this same kind of two-factor structure. These are data from an adolescent psychiatric sample in New York. And we again see more or less the same two-factor structure. So this is something that's replicating. This is something that seems to generalize self-injury in various contexts.

And this is a different measure. These are data from the FASM, which is the Functional Assessment of Self-Mutilation. This was a measure developed by Dr. Elizabeth Floyd Richardson, and it's been used in several self-injury studies. And here too, the items group themselves through factor analysis into two broad dimensions, the social and the

intrapersonal; or the social and the self-focused. So I know I'm moving through these slides quicker than the others, but the take home message is that we find the same things in different samples, but we're also finding the same thing regarding self-injury motivations, even using different measures.

So here's a summary of this knowledge about self-injury functions. The first is that we do appear to have these two different motivational dimensions: the self-focused one, which includes the emotion regulation, anti-disassociation, anti-suicide, marking distress and self-punishment. The second has these more other focused, these more social focused, like influencing others, bonding with peers, and so forth. And it appears that of the two dimensions, it is the self-focus dimension that is endorsed more commonly, in terms of what motivates self-injury, and that is associated with more self-injury, more psychopathology, and more suicidality.

So turning to the final question of what is the relationship of self-injury to suicide, in particular to attempted suicide. Now, for starters, it's important to emphasize their differences. These behaviors differ in a lot of ways. First and foremost, they differ in terms of intent, by definition. So if non-suicidal self-injury is performed without suicidal intent, they also differ in terms of medical severity. NSSI is often very mild medical severity and rarely requires any kind of formal medical attention. Suicide attempts, more often are medically severe, requiring medical intervention.

I should also note that in addition to intent to medical severity, we can point to many other differences. NSSI is much more frequent. People who engage in NSSI might

self-injure dozens of times. Sometimes hundreds; whereas, attempted suicide is performed once or twice, even if people who attempt multiple times, even three, four, five is considered a lot. So frequency is another very important dimension in which these behaviors differ. And there is some very recent work, which I don't have time to cover in this presentation, showing that they are also meaningfully different psychological and psychiatric correlates for NSSI, versus attempted suicide.

The point being that they differ in many ways. So they are not the same behavior. And at the same time, they do commonly co-occur. So we find ourselves in the situation where the stakes are high and we need to avoid oversimplified conclusions about these behaviors. There is clearly a complex relationship here that needs careful study, careful consideration. And fortunately, we have learned a lot about this in recent years, due to findings from a number of different investigators. Now, this is important because if self-injury is mistaken for attempted suicide, there are all sorts of negative repercussions, such as unnecessary hospitalizations, harm and case conceptualization, misallocating valuable resources. It's of course, very important when someone attempts suicide that we mobilize emergency response to keep people safe, to give people the care they need.

But we also have to recognize that this is expensive, in terms of money, in terms of manpower. And so we do not want to be mobilizing these resources for someone who engages in NSSI if they're not in imminent danger of hurting themselves or others. So that's just one reason why we want to get these straight. There is also some recent evidence that some epidemiological studies on attempted suicide over the last 10 to 20

years, particularly epidemiological studies focusing on suicide attempts and adolescents and adolescent girls might have heavily inflated rates of attempted suicide because they did not separately assess non-suicidal self-injury, and that a lot of the endorsement for what was supposedly attempted suicide, was actually people endorsing -- or reporting on their non-suicidal self-injury. So the more that we can clarify the distinction between these two behaviors and publicize this distinction, the better we can tailor our research and the better we can tailor our clinical resources.

This is also important because as we'll discuss, NSSI conveys valuable information regarding suicide risk. That just because they're different, doesn't mean we want to ignore their relationship and the information we can glean about this relationship. And so what I'm going to present next is results from four studies that address the question, "Does NSSI predict attempted suicide?"

Now, the truth is I'm going to really answer questions that are more sophisticated than that. Not "does" self-injury predict attempted suicide, but how strongly does it predict attempted suicide. And are how do we understand those associations, in terms of how other risk factors are related to suicide and then can we say something about why this relationship is what it is.

So here's the first sample. These are 139 adolescent psychiatric inpatients. And what we're looking at are the relationship of different variables to a history of attempted suicide. So these data are cross-sectional. And to provide a context, I first report the relationship of suicidal ideation to a history of attempted suicide. Not surprisingly, it's a

pretty strong relationship. And this is a five-coefficient equivalent to a correlation coefficient of .55. It's on the higher side.

If we look at the relationship of NSSI to the history of attempted suicide, we see .50, which is not that far behind. And to put this in context, here are the findings for some traditional suicide risk factors: borderline personality disorder, depression, anxiety, impulsivity, all clinical phenomenon that are frequently included on lists for suicide risk assessment and they all are related to suicide attempt history, but yet it's noticeable -- or it's notable that self-injury has stronger prediction than these traditional risk factors for suicide.

Here are data from a sample of 426 high school students. Again, starting with the ideation and the NSSI relationship. Suicidal ideation, again, has the strongest relationship, .51. Self-injury is not so far behind, at .38. And then we see other commonly cited risk factors, having positive but smaller prediction, as compared to self-injury.

Here are data from a very large sample, over 1,300 undergraduates. Again, we see suicidal ideation with the strongest prediction, followed by self-injury, and followed by borderline personality disorder, depression, anxiety and impulsivity, again with lower predictions. So you can see the theme here. Here is data from the final sample. This is a random digit-dialing sample of United States adults. And we see suicidal ideation coming in at .36, and self-injury right behind suicidal ideation.

In this particular sample, we don't have data on the other risk factors. So what do we make of all this? Well, first of all, self-injury does relate to attempted suicide, clearly. But more than that, self-injury relates to attempted suicide more strongly than other risk factors relate to attempted suicide. And in fact, self-injury is similar to suicidal ideation and conferring risk for suicide. Self-injury isn't greater than suicidal ideation, and usually is a little bit lower, but self-injury is more similar to suicidal ideation and the magnitude to its relationship to attempted suicide than its association as compared to the other risk factors.

And yet it's important to keep in mind that like suicidal ideation, many or most who engage in self-injury have not attempted suicide. So most people who have suicidal ideation don't actually make the suicide attempt. So that's why we don't equate the two. And even more so, many or most people who engage in self-injury have not attempted suicide. So we need to stop short of equating the two, while at the same time acknowledging there is a special relationship going on here that we need to understand.

And hence, the question mark, what's going on here? How do we understand this? Why does self-injury have such a strong relationship to attempted suicide, particularly since the evidence is overwhelming that they are indeed different behaviors? I think this is where we can draw upon Thomas Joiner's Interpersonal-Psychological Theory of suicide. And in particular, the desire/capability framework that Joiner introduces. And the idea here is that to make a suicide attempt, particularly a potentially lethal suicide attempt, you need both desire for suicide, which is similar to saying you need the presence of ideation, but you also need the capability to act on that desire. And it is

frankly, scary to attempt suicide, even if you have high suicidal desire, even if you have high suicidal ideation. Everything about us is wired to avoid pain, avoid injury, avoid death. And so this is a significant barrier to attempting suicide, and Joiner's point is that you need both to actually progress to potentially lethal action.

And something that I'd like to point out is that most of our suicide risk factors, if we think about them from the perspective of a desire/capability framework, most of these risk factors only confer desire, like depression, like, hopelessness, suicidal ideation. These are all variables that might lead one to think about suicide, if you're very depressed, if you're hopeless, you're not enjoying life. You might think that maybe being alive isn't for me. Maybe you have suicidal thoughts, but these are not risk factors that would increase capability. Other risk factors might only increase capability for suicide. For example, an example I like to use, which is pretty straightforward, is access to lethal means, or maybe having knowledge about how to use lethal means. That would make you more capable of acting on suicidal desire, compared to someone who doesn't have access to lethal means, like a firearm or doesn't know how to use them.

Another example that might be related to capability is combat exposure in the military. That being exposed to pain and death and injury, in a sense helps somebody habituate to pain and death and injury, and a little bit less fear than somebody else, in terms of being able to act on suicidal thoughts, on becoming capable of making a suicide attempt.

So how does this relate to self-injury? Well, I would suggest that self-injury is relatively

unique, in that its presence indicates both desire and capability for suicide. Or at least its presence indicates heightened risk for both desire and capability. The desire comes from the fact that self-injury, its strongest correlate is intense frequent negative emotions. And so if you have self-injury, you have someone who is likely experiencing intense and frequent negative emotions, which, on average, will increase the chances for suicidal desire or suicidal ideation.

At the same time, self-injury increases one's capability. Self-injury, whether it's intended or not, gives someone practice or experience with self-inflicted violence, self-inflicted pain, self-inflicted injury, and helps people habituate to self-inflicted violence. And this was pointed out in a paper by Matthew Nock and colleagues, including Joiner, in a 2006 psychiatry research paper. So what this means is that self-injury is relatively unique among risk factors for suicide and that it represents double-trouble. And this term "double-trouble" was coined by Dr. Barent Walsh, author of the book, *Treating Self-Injury: A Practical Guide*. And that's a fancy way -- I'm sorry; not a fancy way -- that is a simple way to indicate the fact that self-injury confers risk for both suicidal desire and capability. And that is unusual.

So what have we learned? Is self-injury a form of suicidal behavior? Well, no, it's not. It's quite different in many ways. Is self-injury unrelated to attempted suicide? No. It's actually quite strongly related. The take home message, I think, is that self-injury is different from attempted suicide, but confers strong suicide risk because it represents double-trouble: because it represents increased risk for both suicidal desire and capability.

So clinical take home message, suicide is not attempted suicide, but people who self-injure are at greater risk for suicidal ideation. And people who self-injure are more capable of acting on suicidal thoughts, should they occur. There is only so much information that can be covered in a webinar. And for more information, there is a fairly concise user-friendly guide published specifically for health professionals, called *Non-Suicidal Self-Injury*, published by Hogrefe.

There are always many people in many organizations involved in supporting the kind of research that allows us to know the information that I've shared today, so I would like to acknowledge those, including several graduate students, and several funding sources. And thank you for your attention today.

DR. CHELSEA BOOTH: Well, thanks to you, Dr. Klonsky, for your wonderful presentation. I'm sure our audience will appreciate your very nuanced approach to self-injury and suicide. And to our audience, I thank you for listening to this edition of the Suicide Prevention Branch's Research Highlights. If you have questions about today's presentation or suggestions for topics you'd like to see highlighted in future editions, please feel free to email me at the email address on your screen.
Chelsea.Booth@samhsa.hhs.gov.

So on behalf of the Substance Abuse and Mental Health Services Administration, Suicide Prevention Branch, I thank you all for listening and for your continued interest in suicide prevention. We look forward to seeing you again for our other research

highlights.

(End of podcast)

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