Impulsivity and Suicide Risk: Review and Clinical Implications

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Suicide and self-harm are often linked to impulsivity, but what do empirical evaluations of this link actually show? This association is discussed and challenged in this article.

Impulsivity, a frequently misunderstood aspect of suicide risk, has long been considered important to the etiology and prediction of suicide. In particular, impulsivity is highlighted for its role in facilitating suicidal actions among those with suicidal ideation. Mann and colleagues[1] developed a clinical model of suicidal behavior which suggests that impulsivity makes individuals “more likely to act on suicidal feelings.” Similarly, Bryan and Rudd[2] state that impulsivity “may actually be a more significant indicator of suicide attempt than the presence of a specific suicide plan.”

Impulsivity has been adopted as a risk factor or warning sign for suicide. The American Association of Suicidology[3] includes impulsivity as both a chronic and an acute suicide risk factor. Impulsivity is also highlighted by the American Foundation for Suicide Prevention and the Substance Abuse and Mental Health Services Administration.[4,5] However, as discussed below, these widely held perceptions about impulsivity do not appear to be supported by research.

The claim that impulsivity facilitates transition from suicidal thoughts to suicide attempts suggests a clear and testable prediction: trait impulsivity should be higher among those who attempt suicide than among those who only consider suicide. However, to the surprise of many, research on the role of impulsivity has routinely failed to support this claim. For example, a 2007 study of young adults by Brezo and colleagues[6] found that attempters scored no higher on the Barratt Impulsiveness Scale than patients with suicidal ideation who had never attempted suicide.

More recently, my colleagues and I examined a military population and found that while both suicide attempters and patients with suicidal ideation scored higher on a measure of impulsivity than those who had never been suicidal, impulsivity scores were equivalent between attempters and patients with suicidal ideation who had never attempted suicide. In other words, impulsivity was moderately elevated in anyone with a history of suicidality (thoughts or behavior), but the study failed to show any further elevation among those who acted on their ideation and progressed to suicide attempts.

On the basis of these surprising findings, we conducted a subsequent analysis using the UPPS Impulsive Behavior Scale. The UPPS developers, Whiteside and Lynam,[8] suggest that impulsivity is a heterogeneous construct. They used a series of factor and psychometric analyses to identify 4 distinct impulsivity-related traits: Urgency (responding rashly to negative emotions), poor Premeditation (difficulties in foreseeing consequences of actions), poor Perseverance (tendency to give up easily), and Sensation seeking (preference for excitement and stimulation).

Using a brief version of the UPPS in a large sample of adolescents and young adults, we found that attempters and individuals with suicidal ideation exhibited equivalent scores on 3 of the dimensions (Urgency, Perseverance, and Sensation seeking) and that attempters scored only very slightly higher on the fourth (Premeditation). Taken together, the findings suggest that suicide attempters and individuals with suicidal ideation exhibit similar levels of trait impulsivity, a pattern that is contrary to clinical beliefs and guidelines.

The studies described above examined impulsivity as a personality trait that could occur at higher or...
lower levels within an individual. However, there is a second body of research that is also relevant to the role of impulsivity in suicide.

This research examines the impulsive nature of the suicide attempt itself. Many different definitions of attempt impulsivity have been used, including degree of forethought, amount of time between the decision to choose suicide and the actual suicide attempt, time spent contemplating the attempt before making the attempt, presence of a suicide plan, and amount of time spent making a plan, among many others. Given the many ways to define or identify an impulsive attempt, it is not surprising that studies on attempt impulsivity produce widely divergent results. For example, the percentage of suicide attempts estimated to be impulsive has ranged from a low of 20% to a high of 85%.9,10

Perhaps one of the most surprising findings is that trait impulsivity and attempt impulsivity appear to be unrelated. In other words, among individuals who have made suicide attempts, those who score higher on personality measures of impulsivity are not the ones making the more impulsive suicide attempts. This pattern has been found and reported by 2 separate research teams and thus appears to be true despite its counterintuitive nature.10,11

Taken together, studies indicate 2 critical limitations of current knowledge. First, when it comes to characterizing impulsivity in suicide, there is a disconnect between clinical guidelines and research. The way impulsivity is described in lists of suicide risk factors and warning signs is not supported—and is in some cases disputed—by empirical research. Second, the field continues to struggle to understand the role impulsivity plays in influencing the likelihood and nature of suicide attempts, as well as how to best understand suicide and suicide risk.

**Understanding impulsivity**

Looking at data from 70 studies, Anestis and colleagues12 examined the association between measures of impulsivity and measures of suicidal behavior (eg, non-lethal attempts, death by suicide). Across all studies, the relationship between impulsivity and suicidal behavior was modest (Hedges’ g = 0.37). However, most of these studies were cross-sectional; current impulsivity was used to predict a history of suicidal behavior. In the studies that explored impulsivity as a predictor of future suicidal behavior, the association was even smaller, barely above 0 (Hedges’ g = 0.09). The researchers conclude that the role of impulsivity in suicide is likely to be small and indirect rather than central or causal.

Anestis and colleagues next proposed a model specifying the role of impulsivity in suicide. In particular, the authors noted work by Joiner13 that suggested that to make a potentially lethal suicide attempt, one must have the capability to make an attempt. Pain and fear of death serve as barriers to making a suicide attempt, and certain kinds of experiences can allow people to habituate to pain and fear of death and overcome these barriers. These experiences are referred to by Joiner as painful and provocative events and can include a variety of experiences and events, such as exposure to violence, nonsuicidal self-injury, and substance use.

Anestis and colleagues12 theorized that rather than a direct relationship, impulsivity has a distal relationship to suicidal behavior by virtue of increasing one’s exposure to painful and provocative events. Indeed, they noted that initial studies have found that painful and provocative events mediate the relationship between impulsivity and suicidal behavior. In short, it appears that impulsivity exhibits its small relationship to suicidal behavior because it facilitates a lifestyle in which painful and provocative events are more likely to be experienced.

If, contrary to commonly held clinical beliefs, impulsivity is not a strong or central predictor of suicide or suicide risk, what may be a more accurate, more useful alternative model?

**The ideation-to-action framework**

The often cited risk factors for suicide, such as impulsivity as well as depression, hopelessness, and most mental disorders, are indeed greater among suicidal populations, but they distinguish poorly between those who attempt suicide and those who consider but never attempt suicide.14 In other words, once an individual is known to have suicidal ideation, assessing his or her depression, hopelessness, psychiatric diagnosis, and impulsivity offers little to no information about the risk of acting on that ideation and making a suicide attempt. This distinction is critical because most individuals with suicidal ideation do not go on to attempt suicide.

This pattern of findings, replicated in numerous studies by numerous investigators, led to the ideation-to-action framework. From this perspective, predictors and explanations for suicide should be classified as to how they address (a) the risk of suicide ideation, (b) the risk of suicide attempts among those with suicidal ideation, or (c) both. For example, depression, hopelessness, impulsivity, and most psychiatric disorders appear to be best characterized as predictors of suicidal ideation.15,17

In contrast, fearlessness and reduced pain sensitivity appear to specifically characterize suicide
impulsivity, it may be fruitful to focus on domains that have been consistently shown to predict and motivate suicidal ideation and suicide attempts, including pain and hopelessness (especially in combination), connectedness, and suicide capacity. Interventions for suicide risk may be most effective when one or more of these domains is improved.

A new model of suicide and suicide risk

A new theory of suicide positioned within the ideation-to-action framework is the 3-step theory (3ST). The 3ST makes 3 central claims, all of which are consistent with existing evidence that is supported by recent findings. First, the combination of pain and hopelessness is what brings about suicidal ideation. The nature of pain is intentionally not specified. Any type of pain that makes daily life aversive, regardless of its source, can be implicated in suicidal ideation. When efforts to engage with life are paired with emotional, psychological, or physical pain, the individual is behaviorally conditioned to want to avoid engaging with life, which, in turn, decreases the desire to live. Furthermore, if the experience of pain is accompanied by hopelessness (over the idea that the pain will never improve), suicidal thinking begins. However, if there is hope that one’s situation can improve, then one will continue to engage with life. It is the confluence of pain and hopelessness that leads to suicidal thoughts. Indeed, pain and hopelessness are the two primary motivations for suicide. More to the point, recent research suggests that it is the combination of pain and hopelessness that matters. Specifically, suicidal ideation was negligible in those low on both pain and hopelessness and was negligible in those either high on pain or high on hopelessness; in contrast, suicidal ideation was elevated only in the subgroup high on both pain and hopelessness.

Second, the 3ST suggests that connectedness prevents suicidal ideation from escalating in those at risk (ie, those experiencing both pain and hopelessness). In other words, if connectedness to life—to loved ones, to a valued role, or to any sense of meaning or purpose—exceeds the pain, suicidal ideation will remain at modest levels. However, if pain exceeds the connectedness to or investment in life, suicidal ideation becomes strong and active. Recent findings support this notion: connectedness was found to be a significant buffer against suicidal ideation only in those with pain and hopelessness; in everyone else, connectedness is negligibly related to suicidal ideation.

Finally, the 3ST states that strong suicidal ideation leads to a suicide attempt if, and only if, one has the capacity to make an attempt. Three specific categories of variables contribute to suicide capacity: dispositional, acquired, and practical. Recent research has found that each of these 3 variables predicts suicide attempt history, even when controlling for past and current suicidal ideation.

Dispositional variables are driven largely by genetics, such as pain sensitivity. For example, someone born with low pain sensitivity will have a higher capacity to carry out a suicide attempt. Indeed, more recent work from Smith and colleagues indicates that capability for suicide may be largely genetic. Acquired variables are experiences associated with pain, injury, fear, and death, and they can lead over time to a higher capacity for a suicide attempt. Practical variables are concrete factors that make a suicide attempt easier. These factors include access to, knowledge of, comfort with, and practice with lethal means. There are countless ways for someone to increase practical capacity. Each of these 3 factors—dispositional, acquired, practical—contribute to the capacity for attempted suicide, and an individual with strong suicidal ideation will only make a suicide attempt if and when he has the capacity to do so.

One reason the 3ST is useful is that it suggests clear clinical implications. To reduce suicide risk, clinicians can reduce pain, increase hope, foster connection, and/or decrease capacity. Although these domains require more study and validation, they may be a useful way to conceptualize how a specific set of interventions with a particular patient can target and impact suicide risk.

Conclusion

Contrary to commonly held beliefs, a large body of research suggests that impulsivity is not a strong predictor or cause of suicidal behavior. Instead, trait impulsivity appears to be a modest and distal predictor of suicide; however, large, prospective studies that could best address this issue are still needed.

Future studies guided by the ideation-to-action framework may be able to specifically test the degree to which the impulsivity-suicidality relationship is explained by impulsivity’s impact on the pain and hopelessness that cause ideation and/or on suicide capacity. Instead of focusing on impulsivity, it may be fruitful to focus on domains that have been consistently shown to predict and motivate suicidal ideation and suicide attempts, including pain and hopelessness (especially in combination), connectedness, and suicide capacity. Interventions for suicide risk may be most effective when one or more of these domains is improved.
Disclosures:
Dr Klonsky is Associate Professor and Ms May is a Doctoral Candidate in the department of psychology at the University of British Columbia in Vancouver. The authors report no conflicts of interest concerning the subject matter of this article.

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