

Risk Factors for Suicide Ideation Differ From Those for the Transition to Suicide Attempt: The Importance of Creativity, Rigor, and Urgency in Suicide Research

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We were invited to comment on the article by May and Klonsky (2016) titled "What Distinguishes Suicide Attempters From Suicide Ideators? A Meta-Analysis of Potential Factors." We were delighted to see the authors calling attention to the fact that the risk factors for onset of suicide ideation differ from those for the transition from suicide ideation to attempt. Our commentary focuses on three points: (a) despite the authors' framing it as such, this is not a new research question, but one with a substantial history; (b) this meta-analysis excludes most of the available data on this topic and focuses instead on results from small and nonrepresentative studies, limiting the validity of the inferences that can be drawn from this analysis; and (c) this meta-analysis was designed in a way that precludes the examination of actual risk factors for the transition from suicidal thought to action. We conclude by discussing some important considerations for future research.

Key words: attempt, ideation, meta-analysis, prediction, review, risk factors, suicidal, suicide. [*Clin Psychol Sci Prac* 23: 31–34, 2016]

Suicide is one of the most perplexing and devastating of all human behaviors. It is consistently among the leading causes of death worldwide, taking the life of another person every 40 seconds. Given the high-stakes nature

of this problem, the field is in urgent need of creative and rigorous research that advances current knowledge.

NOVELTY OF THE RESEARCH QUESTION

May and Klonsky (2016) suggest that they have identified an exciting new idea that represents the future of suicide research. They name it their "ideation-to-action framework" and have described it as a "critical frontier for suicidology research" and "next-generation approach" that should "guide all suicide theory and research." In reality, the fact that there are differences in the predictors of suicide ideation and suicide attempt has been well studied and documented for decades. For example, over 15 years ago, using data from the U.S. National Comorbidity Survey (NCS), Kessler, Borges, and Walters (1999) showed that many known risk factors for suicidal behavior actually predict suicide ideation, but not the transition from ideation to attempt. That transition is predicted by only a subset of the factors that predict ideation. This result has been replicated and extended in literally dozens of large-scale studies, including: nationally representative studies of >100,000 respondents from 21 different countries, nationally representative surveys of U.S. residents (NCS-Replication, NCS-2, NCS-Adolescent Supplement), and large representative samples of military service members (Army STARRS; see Data S1 for earlier articles addressing this research question). The consistent replication of this result in studies totaling over 160,000 participants demonstrates the robust nature of this finding and highlights the importance of attending to this distinction in research and clinical efforts. Moreover, earlier review articles also have proposed this exact idea, suggesting that the next generation of studies on suicide should continue to attend to the distinction between risk factors for ideation and those for the transition to attempts, while also addressing a range of other key gaps in our understanding of suicidal behavior (Glenn & Nock, 2014; Nock et al., 2008). Thus, although this is an important idea, it is not a new idea.

REPRESENTATIVENESS OF THE REVIEW

Given that dozens of recent, large-scale studies have examined this research question, it was surprising to see that the authors did not include them in this

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review. Instead, they restricted their review to a limited number of articles using relatively small and narrowly defined samples. For instance, the largest sample included in this meta-analysis (which accounted for nearly one-third of their total sample) was composed primarily of men charged with a felony in the southeastern United States. Overall, 21 of the 27 articles included in this meta-analysis used nonrepresentative samples (e.g., male twin Vietnam veterans, those with first-episode psychosis). The problem with this approach is that it is unclear to what extent the results from such samples apply to the general population.

In contrast, the authors excluded the large-scale epidemiological studies that have examined this exact research question and met the inclusion criteria described in the article. The concern here is not merely one of failure to cite earlier work, but of the scientific and clinical consequences of such exclusions in limiting the inferences that can be drawn from their results by reducing the representativeness of the data included (limiting external validity), reducing the size of the meta-analytic sample to approximately 25% of what it could have been (limiting statistical conclusion validity), and reducing the number of constructs examined (limiting possibilities for scientific discovery and advancement).

The most striking example of this omission is the exclusion of the extensive series of studies addressing this exact research question published by the World Health Organization World Mental Health Consortium (WMH), a coordinated series of large, epidemiological surveys conducted in 21 different countries across six continents ($N = 109,377$). The authors suggested that they know about these studies but did not include them because “data from the WMH Survey are generally presented in multivariate format and subject to complex sample weighting, precluding most of it from being included” (p. 9). There are several concerns here. First, multivariate effects and weighted data can, of course, be included in meta-analyses. Indeed, this very meta-analysis included several articles that reported only multivariate analyses and used complex sample weighting. Second, many of the articles in question ($N = 109,377$) report results from bivariate analyses in table form before reporting multivariate analyses, precisely so that interested researchers will have this information. Third, intentionally excluding studies that are

designed and weighted to be *more representative* of the general population simply defies logic. The central purpose of a meta-analysis is to obtain a more accurate estimate of a population parameter of interest. This is accomplished by combining information from multiple studies, giving greater weight to studies with larger samples and less error because they are more likely to accurately estimate the population parameter. Here, the authors, unfortunately, did the exact opposite, namely, giving the least weight to the largest studies designed to have the smallest amount of error possible. This is akin to a pollster intentionally ignoring results from large surveys weighted to be representative of the general population and instead basing conclusions on small surveys of prisoners and hospital patients.

Beyond decreasing the statistical power and external validity of these results, this omission has the added consequence of precluding the reader from learning about any putative risk factors not tested in the included studies. This meta-analysis reported on a handful of sociodemographic and diagnostic variables. However, the reader is not informed that a much wider range of risk factors for the transition from suicide ideation to attempt already has been identified, including the following: other mental disorders characterized by anxiety, agitation, poor behavioral control, specific forms of childhood adversities; certain traumatic experiences; and particular physical conditions, family history of several forms of psychopathology, and specific characteristics of suicidal thinking (see Data S1 [available online] for a list of 50 articles describing these and other results). Excluding these findings misinforms scientists, clinicians, and other readers about the progress that has been made in advancing our understanding of this vitally important issue.

NATURE OF ASSOCIATIONS

This meta-analysis nicely shows that several factors known to differ between suicide ideators and attempts differ between suicide ideators and attempts in the studies included. Conceptually, these results indicate that these factors are *correlates* of the outcome of interest. However, this review did not test whether these are actual *risk factors* (i.e., a variable that precedes and predicts increased likelihood of an outcome of interest; Kraemer et al., 1997). This is not merely an academic point. There are many potential explanations for why two vari-

ables are related, and not knowing which represents the truth can lead to misunderstanding and misallocation of resources. For instance, it could be that posttraumatic stress disorder (PTSD; a correlate reported in the meta-analysis) is a *consequence* of making a suicide attempt. In such a case, efforts aimed at using a PTSD diagnosis to predict subsequent suicide attempts, or at targeting PTSD for treatment with hopes of decreasing the likelihood of suicide attempt, would be misconceived.

As such, this meta-analysis is not able to provide information about risk factors for the precise transition that is the putative focus of interest. What is needed are studies testing whether the occurrence of each independent variable is associated with a subsequent increase in the risk of transition from ideation to attempt. Doing so requires either longitudinal studies or retrospective studies that include ages of onset for each independent and dependent variable. This was done in some of the studies included in this meta-analysis, and so the authors could have tested whether their findings hold up when restricting the analyses to studies that are designed to allow for the testing of risk factors. Moreover, each of the large, representative studies mentioned above tested actual risk factors for the transition from ideation to attempt. Designing studies in ways that move us from tests of correlation to the examination of risk factors and causal risk factors is vital for the understanding and prevention of suicidal behavior.

FUTURE RESEARCH

The authors conclude by calling for studies of putative risk factors for the transition from ideation to attempt beyond those included in their meta-analysis. The good news is that a great deal of that work already has been done. Beyond identifying a broader range of actual risk factors for the transition from ideation to attempt, prior research has shown that indices composed of these risk factors can predict which people with a history of suicide ideation will go on to make a subsequent suicide attempt with a fairly high degree of accuracy (see Data S1, available online). Research on the prediction of suicide attempts among people with suicide ideation has progressed well beyond the data and conclusions described in this meta-analysis, and the interested reader is encouraged to review the broader literature on this topic.

Moving forward, it is important to note that the focus on the ideation-to-attempt transition is only one of *many* needed directions for future research aimed at advancing the understanding and prediction of suicidal behavior. We also need to better understand why some people think about suicide as an option to begin with. We need data that reveal what suicidal thoughts and behaviors actually look like (i.e., we have been studying a phenomenon without actually observing its occurrence; new technologies can help correct this). We need to better understand how people move along the entire pathway to suicide: from onset of the thought, to developing a plan and intention, to making preparations, to making a decision to act, and actually carrying out the attempt. For each of these transitions, we need a better understanding not just of correlates, but of risk factors, causal risk factors, mechanisms, moderators, and complex interactions. Suicide is an outcome that results from a complex, nonlinear, and time-varying combination of a wide range of factors, and we need to seriously start treating it in that way.

In order to begin to answer these questions, perhaps most importantly, we need greater creativity among our researchers. Replication is one of the most important principles of science; however, at some point, reporting known findings over and over again becomes redundant; and selectively reporting known findings can be dangerous when the outcome is serious injury or death. Future research should aim not on redundant reproduction of prior findings with a slight twist, but on creatively searching for novel risk factors (e.g., RDoC constructs), new prediction windows (e.g., prediction of suicidal behavior in the coming minutes, hours, days, and weeks), and innovative prediction methods (e.g., use of real-time monitoring, genetic risk scores). Suicide is among the most devastating of all human behaviors, and we must all show greater creativity, rigor, and urgency if we hope to achieve any significant advancement in our understanding and ability to predict and prevent it.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Data S1. References.