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Commentary

The tip of the iceberg: Commentary on mental illness and substance use as distal and proximal variables

Morten Hesse*

Center for Alcohol and Drug Research, Aarhus University, Bartholins Allé 10, 8000, Aarhus C, Denmark

*Author for correspondence:
Email: mh.crf@psy.au.dk

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Abstract

Given the widespread taboo surrounding suicide, risk of suicide may become even more difficult to face for clinicians, when linked with substance use, another stigmatized behavior. In this commentary, we shall argue that even though suicides are to be taken seriously, we must also be aware of the rarity of completed suicide, and be careful not to exaggerate risks associated with substance use. The primary risk of suicide appears to occur when a range of distal and proximal factors converge.

Introduction

Historically, suicide has been considered a sin or a crime. In Christian cultures, people who had committed suicide could not be buried in hallowed ground, and in Ireland, suicide officially ceased being a crime as recently as 1993 [1]. Furthermore, suicides may often be ascribed to "other violent deaths" in cultures that strongly condemn suicide, such as Islamic countries [2]. However, suicides may not only be interpreted in light of religion and religious agendas, but also be as part of political agendas, as was the case with the German Democratic Republic, which existed from 1949 to 1989, where exaggerated claims of suicides among dissidents were met by repression of any data on suicide from the government [3]. Finally, studies indicate that suicide especially may be a taboo among men [4].

The fact that suicide is already linked with taboo may be reinforced when it is linked with substance use, another stigmatized type of behavior. Historically, substance use has been a strongly moralized behavior in many countries and societies, and has often resulted in widespread criminalization of especially drug use, and strong negative public perceptions and beliefs about people with substance use disorders [5], where they over the centuries have often been perceived as morally weak [6]. However, there are also good reasons why researchers and clinicians would think that suicide and substance use are connected. Substance use may be linked with suicide and suicidal behavior, both in connection with acute intoxication and chronic substance use disorders, where the mechanisms related to substance use may contribute to an increased risk of suicide, such as the influence on cognition and behavior, which may result in disinhibition and impulsivity, pain, distress and psychiatric conditions, and social marginalization. Thus, in principle, substance use can both work as a distal factor, where it is associated with a long range of factors that eventually lead to suicide, such as loneliness, loss of jobs or health problems [7], or it can work as a proximal risk factor, where acute intoxication either directly causes the suicidal crisis or lowers the threshold for carrying out a suicide plan [8].

There is robust evidence that at least alcohol works as a proximal factor. For instance, alcohol intoxication seems to be associated with suicidal behavior, even in the absence of a long-standing problem with alcohol [9], and especially with very violent means, such as firearms [10,11]. Further, alcohol may simply be used to reduce anxiety associated with suicide attempts, or reduce impulse control that would otherwise stop the suicide or suicide attempt [8]. There is also some evidence that substance use, especially early onset substance use, predicts suicide as a distal factor [12]. However, substance use is often co-morbid with other mental health problems, and even when substance use pre-dates suicidal behavior and ideation, it is not always clear if the relationship is partially or fully causal, or confounded by pre-existing risk factors, such as trauma or other mental health problems.

At the same time, suicide is important for understanding the burden of illness associated with the co-morbidity between substance use disorders and other mental health problems [13].

When these findings are to be translated into evidence-based practice, it is crucial that clinicians and researchers think in terms of the day-to-day questions that they are faced with [14]. Of course, two questions spring to mind: first, what is the actual risk that my patient will die by suicide? This question is, for obvious reasons, important for the near and dear ones of the patient, as well as for the clinician [15]. Second, given what is known about risk factors for suicide, which patients should I focus on in order to minimize the risk of suicide the most for the highest number of people?

The first question depends on one crucial variable, namely the base-rate of suicide. While completed suicide is over-represented in people with substance use disorders, it is still a rare event. Globally, 1.4% of deaths are due to suicide [16], and while every suicide is a tragedy, the rarity of suicide also makes it difficult to grasp at a psychological level and study scientifically. For good reasons, a many studies focus on proxies or risk factors for suicide, such as suicidal ideation and a history of suicide attempts. And while much can be learned from such studies, there are also reasons to be concerned about the generalizability of findings on suicidal ideation and attempts to death due to suicide. Studies on suicidal ideation and attempts usually report that women are more likely to report suicide attempts and thoughts of suicide, but men are more likely to die by suicide [17-19]. Further, in carefully conducted studies, women's suicide attempts are less deadly than are men's [20,21]. In addition, there is evidence that even when suicide attempts are severe enough to land a patient in hospital, it is only the most severe that are associated with eventual risk of suicide [22]. Thus, it may be problematic to generalize from studies of suicidal ideation and suicide attempts to completed suicide.

Some studies have been done to assess risk factors for suicide. Our group has been involved in two studies, one using a national cohort of people in residential rehabilitation and the other using a national database of all people seeking treatment in the public system. The first study showed that people who self-reported psychiatric symptoms had a higher risk of suicide, even on top of risk factors such as criminal involvement, register-based psychiatric history, and drugs of abuse [23]. The study utilized only the Addiction Severity Index Psychiatric composite score, a simple measure based on self-report questions about the past 30 days concerning psychological and emotional problems. Yet, this measure predicted completed suicide, not just suicidal ideation or self-reported attempts. Furthermore, an important thing to note about this study was that only very few people eventually died from suicide according to the registers: less than 30 patients out of nearly 6,000.

The second and more recent study used a range of registers and a much larger sample, and was able to compare the incidence of suicide in the general population with suicide in the people who had been in treatment for drug use disorders [24]. In this study, we additionally quantified differences in the incidence of suicide between four groups: general population without a psychiatric history or drug use disorders, general population with a psychiatric history but no drug use disorder, people with a history of drug use disorder, and people with both a psychiatric history and a history of drug use disorders. Overall, the study supported that mental health problems was a very strong predictor of completed suicide, as people with a psychiatric history were more than 12 times more likely to commit suicide compared to age- and gender-matched controls without a history of treatment for both drug and alcohol use disorders. This pattern was quite similar for people with a history of mental health treatment, with a history of treatment for drug use disorders and without a history of treatment for drug use disorders. We also found that people with a history of treatment for drug use disorders, but no psychiatric history, were approximately seven times more likely to commit suicide than those in the general population with no history of psychiatric treatment and no treatment for substance use disorder.

We believe that three important lessons can be learned from these two studies. One lesson is that mental health problems, whether measured by self-report or by register data, is a considerable risk factor for suicide. Thus, in order to prevent suicides from happening, effective and comprehensive care for mental health problems should be available, regardless of whether people have co-morbid substance use problems. The second lesson is that while drug use disorders to some extent are associated with suicide, the prevalence is still rather small in absolute numbers. Even in high-risk groups, suicide is a rare event.

The two lessons have important implications for both research and practice. For research, it means that studying completed suicide requires large samples tracked over many years, in order to identify relevant predictors of suicide. Since the presence of self-reported suicide attempts or suicidal thoughts is apparently a biased proxy, studying suicide in general, and especially in people with drug use disorders, will continue to require such studies. For practice, it means that is important for clinicians to know that suicide is not a common and expectable outcome for people enrolled in treatment for substance use disorders. However, because suicidal ideation and attempts are indeed common in high-risk populations, asking patients about their mental state is likely to do more good than harm - at the very least, asking the patients a few questions can allow the clinicians to set a plan in motion to reduce the pain of the patient [25]. The low figures for suicide belie the fact that suicide is the tip of the iceberg: underneath a small number of suicides, there are a large number of people who suffer immensely, and even if self-reported suicidal ideation or attempts are not an ideal proxy for this suffering that does not make it any less real. Daring to overcome the taboo of asking clients in primary care, treatment for substance use disorders and psychiatric treatment about their mental state and thoughts about suicide should thus be a high priority. This priority is especially important across cultures, where the taboo and stigmatization taboo can be more or less pervasive [26,27].

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