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**Title:** Stop Analyzing Suicides, Drug- and Alcohol-Related Mortality Together: Response to “Are We Undercounting the True Burden of Mortality”

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**Running Head:** Stop Analyzing “Despair” Deaths Together

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Abstract:

A recent article from Spark et al. (Am J Epidemiol. AJE-01123-2021.R3) estimates the undercount of deaths due to suicides, drug- and alcohol-related mortality in a Colorado veteran population and argues for a standardized case definition for the three causes. A case definition for these three causes implies they should be analyzed together. This is problematic given the disparate trends in and historical context behind the three causes of death.

There is a notable phrase missing in the recent article by Spark et al. (1): “deaths of despair.” With data on Colorado veterans, the authors demonstrate that analyzing underlying causes of death, rather than multiple (or contributing) causes of death, undercounts the full burden of mortality related to suicide, alcohol-, or drug-use. They further argue that “a lack of consensus remains regarding which causes of death should be included when looking at these three types of deaths together” (Spark et al. (1): 2), and that “developing a case definition for suicide, alcohol-related, and drug-related deaths is required to improve the quality and validity of emerging research” (Spark et al. (1): 15). However, the authors do not adequately account for the historical context of these analyses, in which these causes have often been analyzed collectively within the umbrella term “deaths of despair.” Several critiques of “deaths of despair” point to important reasons why the three causes *should not be analyzed collectively*.

“Deaths of despair” garnered mass public attention when Case and Deaton (2) argued that rising middle-aged mortality among white Americans was largely due to suicide and drug- and alcohol-related mortality. Case and Deaton argued these trends were the result of growing social and economic distress in this population. Their conclusions and analytical approach have been critiqued, with some disputing the term “deaths of despair” and the strategy of analyzing these causes of death together (e.g., (3)). Subsequent research has consistently found different patterns in each of the three causes, calling into question a common underlying driver.

One important cause is the opioid epidemic that Spark et al. (2022) mention, an epidemic comprised of three waves: 1) the widespread availability and marketing of prescription painkillers, and the subsequent 2) heroin and 3) fentanyl waves (4). Drug-related mortality increased steeply beginning in the late 1990s, continuing to rise to the highest rates ever observed in 2021. In contrast, suicide mortality, also highlighted by Spark et al. (1), increased

slowly across the late 1990s and early 2000s, with more rapid increases beginning in 2006 (5). Finally, alcohol-related mortality has also been slowly increasing since 1999, but concentrated in those ages 25 to 64 (6), albeit less so for younger cohorts (7). Simon and Masters (8) provide explicit evidence that suicides, and drug- and alcohol-related deaths do not move together temporally or spatially in U.S. counties. This is supported by research showing distinct period and cohort trends in the three causes of death (7). The spatio-temporal differences for each of the three causes indicate different underlying drivers and mechanisms for each.

Despite evidence that these three causes of death do not trend together, research in both the U.S. and worldwide continues to analyze these causes together (e.g., (9)). While Spark et al. (1) do not explicitly use the term “deaths of despair,” their work perpetuates the concept by analyzing the three underlying causes of death – suicide, drug- and alcohol-related – and arguing for an expanded and consistent case definition for the three causes. While perhaps unintentional, their analysis highlights a need to move beyond a crude conceptualization of these causes of death as representing the same underlying phenomenon with the same underlying drivers.

I am not disputing the existence of despair, there is plenty of research showing rising rates of mental health distress in the United States (e.g., (10,11)). What I am disputing is the persistent and problematic linear relationship that is often theorized as existing between despair and “deaths of despair.” Analyzing these three causes in tandem, and labeling them as “deaths of despair,” contributes to the inference that the causes of death are inextricably linked to one another and to despair. The association that ensues when the phrases “despair mortality” or “deaths of despair” are used is that of individual suffering that results in death. This does occur in some instances, but it is not the only reason for the rising number of deaths from drug- and alcohol-use, and suicide.

To that end, I urge all researchers to stop analyzing suicide, drug- and alcohol-related mortality as a joint outcome.

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