Language that could be clues to suicide differ between men and women, study finds

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The suicide rate for men is about four times higher than for women. While men make up 50% of the population, they account for 80% of the suicides. Yet, suicide risk in men often goes unnoticed.

Now new research may offer hope. A UCLA-led study of public health records has identified a vocabulary associated with events surrounding male suicides that could be useful in spotting individuals who need follow up care, and in improving public health messaging.

The study, published in the *American Journal of Public Health*, examined 271,998 suicides over a period of 17 years in the U.S. National Violent Death Reporting System, a database maintained by the Centers for Disease Control and Prevention. Research revealed large differences in the language used in the database's police reports and public health records to describe the circumstances surrounding male and female suicides.

Less than half of suicide decedents in the database had a documented mental health condition, and even fewer had evidence of having ever received mental health or substance use treatment. In addition, a much larger percentage of those who had received such treatment were women than men.

Language related to mood, psychological state, and previous or ongoing treatment for mental health problems appeared far more frequently in the records of women than men. Words and phrases related to interventions, such as "intensive care unit," "therapy," and "welfare check," also appeared more frequently for women. These are the types of terms mental health professionals are trained to recognize as early warning signs of suicide.

Words associated with male suicides, on the other hand, were far more likely to reference job loss, alcohol abuse, financial stress, and unusual behavior around the time of death.

The records related to men who did mention mental health struggles were less likely to note that the person received treatment, and when

treatment was mentioned, they were more likely to add that the patient had been non-compliant. Male narratives also more often included a topic reflecting emergency or police-based interventions.

Ten terms related to mental health that more often appeared in the narratives of men than women were:

- chronic mental health conditions
- undiagnosed
- strange behavior
- agitation
- making mistakes
- seeming like
- cognitive difficulties
- signals of mental and physical health issues
- self-injury
- cognitive indecision

"Many studies have shown that men are less often diagnosed with or treated for depression and other mental health issues so it's not surprising we see fewer of those kinds of terms in the records," said co-author Vickie Mays, a UCLA professor of psychology and health policy and management. "What we've done is uncover a language of suicide that can help health care workers and others catch more men before they go through with it."

The findings offer a new approach to understanding and identifying early warning signs for suicide by mining texts, possibly using artificial intelligence, for signals emitted by those close to committing suicide.

"Health care workers could reach out to these people with offers of support, and the data could be used to train suicide hotline workers, first responders, and health care professionals to recognize and intervene with

troubled men. The language could also be used in public health messaging and in workplace wellness programs," said Susan Cochran, a professor of epidemiology at the UCLA Fielding School of Public Health and the Department of Statistics and Data Science.

Mays noted that women interact with the health care system more routinely than men, usually around reproductive health. These visits typically include screening for depression and can lead to referrals for treatment.

"If a man is only going to a doctor every so often, there are fewer chances he'll be referred for treatment. We think that by identifying gendered language around suicide, we can get more help for men who need it," Mays said. "For example, interventions could be directed at a man who is distraught about losing a job, since that was one of the key indicators pointing toward suicide for men."

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