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Suicide Among Males Across the Lifespan: An Analysis of Differences by Known Mental Health Status

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Abstract

Introduction: Suicide among males is a major public health challenge. In 2019, males accounted for nearly 80% of the suicide deaths in the U.S., and suicide was the eighth leading cause of death for males aged ≥10 years. Males who die by suicide are less likely to have known mental health conditions than females; therefore, it is important to identify prevention points outside of mental health systems. The purpose of this analysis was to compare suicide characteristics among males with and without known mental health conditions by age group to inform prevention.

Methods: Suicides among 4 age groups of males were examined using the 3 most recent years of data at the time of the analysis (2016–2018) from the Centers for Disease Control and Prevention's National Violent Death Reporting System. Decedents with and without known mental health conditions were compared within age groups. The analysis was conducted in August 2021.

Results: Most male suicide decedents had no known mental health conditions. More frequently, those without known mental health conditions died by firearm, and many tested positive for alcohol. Adolescents, young adults, and middle-aged males without known mental health conditions more often had relationship problems, arguments, and/or a crisis as a precipitating circumstance than those with known mental health conditions.

Conclusions: Acute stressors more often precipitated suicides of males without known mental health conditions, and they more often involved firearms. These findings underscore the

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SUPPLEMENTAL MATERIAL

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importance of mitigating acute situational stressors that could contribute to emotionally reactive/impulsive suicides. Suicide prevention initiatives targeting males might focus on age-specific precipitating circumstances in addition to standard psychiatric markers.

INTRODUCTION

Suicide prevention is a public health priority. In 2019, males accounted for ~80% of suicide deaths in the U.S.; suicide was the eighth leading cause of death for males aged ≥10 years.[1] Males less often have known mental health conditions (KMHCs) than females who die by suicide.[2,3] Many factors could contribute to this: less help seeking,[4] impulsive reactions to stressors, traditional gender roles,[5] and greater access to highly lethal means.[6] Characteristics of suicides among males with and without KMHCs were compared by age group to inform prevention.

METHODS

The 3 most recent years (2016–2018) available in the Centers for Disease Control and Prevention's National Violent Death Reporting System (NVDRS) (Appendix Text 1, available online) were examined. NVDRS combines death certificates, coroner/medical examiner, and law enforcement reports abstracted using standardized Centers for Disease Control and Prevention guidance.

All variables included were based on standard NVDRS variables. *Suicides* were defined as deaths of persons aged ≥10 years from intentional self-harm (ICD-10 codes X60–X84, Y87.0, U03). Age groups included adolescents (aged 10–17 years), young adults (aged 18–34 years), middle-aged adults (aged 35–64 years), and older adults (aged ≥65 years). The NVDRS variable diagnosed mental health problem (Appendix Text 2, available online) was used to define the presence of a KMHC.

Chi-square and Fisher's exact tests were used to compare males with KMHC with those without KMHC. Unless otherwise noted, all comparisons reported below were between these 2 groups (ref group: those with KMHC) within age groups. Statistical significance was set at α=0.001 to account for multiple comparisons. All significant differences refer to chi-square and Fisher's exact test results. Logistic regression was used to estimate ORs with 95% CIs to measure effect size and direction. The analysis was conducted in August 2021.

RESULTS

NVDRS captured suicides of 70,376 males from 2016 to 2018. Overall, 60% of male suicide decedents had no KMHCs. Significantly greater proportions of each racial/ethnic minority group other than ≥2 races had no KMHC. A significantly greater percentage with no KMHC had less than high school education (OR range=1.2–1.4). A greater proportion of suicides among young, middle-aged, and older adults without KMHCs occurred in rural areas (OR range=1.3–1.5) (Appendix Table 1, available online, provides detailed results).

Males without KMHC significantly more often died by firearm suicide across age groups (OR range=1.5–1.9). Substance use problems were common for young and middle-aged

adults in both groups (range=32%–40%) but significantly more common among those with KMHC. Many young and middle-aged adults in both groups tested positive for alcohol (range=43%–48%); this was significantly more common among young adults with no KMHC (OR=1.2).

Relationship problems were a common circumstance (range=25%–59%) and were significantly more prevalent among adolescents, young adults, and middle-aged adults without KMHC (OR range=1.3–1.5). Intimate partner problems were significantly more common for young and middle-aged adults with no KMHC (OR range=1.3–1.6). Family problems were the most common type for adolescents in both groups. Arguments were common across age groups and were significantly more prevalent among young and middle-aged adults without KMHC (OR=1.4–1.5), particularly suicides that occurred during the argument itself (OR=1.4–1.5).

Overall, significantly fewer males without KMHCs had a history of suicidal ideation (OR=0.5) and/or attempts (OR=0.3) than those with KMHC. Young and middle-aged adults without KMHCs significantly less often disclosed suicidal intent.

About 10% of males with KMHCs were recently released from an institution compared with ~5% without KMHC. Those without KMHC were significantly more often recently released from jail/prison (young adults: OR=4.8; middle-aged adults: OR=3.8) or hospitals (older adults: OR=3.1); those with KMHC were more often recently released from psychiatric hospitals.

Recent/impending crisis was also a top circumstance overall (32%) and significantly more common among young, middle-aged, and older adults without KMHCs (OR range=1.3–1.4). Overall, physical health problems were a leading circumstance for older adults (58%) (data not shown) but significantly greater among older adults with no KMHC. Suicides among middle-aged adults with no KMHC were significantly more frequently precipitated by eviction/home loss (OR=1.3). Suicides of young, middle-aged, and older adults with no KMHC were significantly more often precipitated by recent criminal/legal problems (OR range=1.6–1.8) than the suicides of those with KMHC.

DISCUSSION

Most male suicide decedents had no KMHC. Those with no KMHC more often experienced precipitating crises (e.g., interpersonal, legal, physical health problems) and/or had positive alcohol toxicology compared with males with KMHCs. Consistent with the findings of other studies, males without KMHCs less often expressed suicidal thoughts/behavior and were more likely to use firearms.

Determining KMHC among suicide decedents is challenging. It is often cited that ≥90% of people who die by suicide had a diagnosable mental health condition.[7] This statistic is based on psychological autopsy studies involving in-depth interviews with next of kin,[7] often with the intent to ascribe diagnoses. This approach may be prone to biases such as recall bias and attribution bias.[8] This study's estimates rely on diagnoses from investigative reports, which may be less prone to these biases, but it is possible that some decedents

without KMHC may have an undiagnosed or unrecognized mental health condition. The absence of KMHCs was more prevalent among minority, lower-education, and rural male decedents, suggesting potential disparities in identifying suicide risk in these populations and in accessing/delivering mental health care/supportive services.[9]

According to the literature on gender roles and emotion, males often experience anger/irritability rather than sadness when faced with emotional difficulties.[10] Mood disorders are half as common in males, and men are less likely to acknowledge symptoms and/or report them as less severe,[11] perhaps because these symptoms do not fit established gender norms,[12] suggesting a possible under-recognized silent crisis in men's mental health.[11] Psychosocial stressors such as unemployment, divorce, and other life transitions have been found to elevate suicide risk in men.[11] In this study, arguments were a common precipitant for suicide, many of these occurring during or within a day of the argument. Future research can go beyond typical depression symptoms to examine emotional volatility as a risk for males' suicide.

Limitations

NVDRS data have several limitations. NVDRS data are not yet national: the 2018 data were from 39 states and the District of Columbia, reflecting 72% of the U.S. population, and Puerto Rico. Data from previous years included fewer states. Toxicology practices vary among jurisdictions, and not all substances are routinely tested; the most commonly tested substance, alcohol, was tested for 51% of decedents. Data on circumstances and mental health derived from investigative reports; their accuracy and completeness are affected by informants' knowledge.

CONCLUSIONS

The results of this study provide an important contrast between the characteristics of suicide among males with and without KMHC. These findings underscore the importance of improving environmental and social conditions to decrease suicide risk such as mitigating the effects of acute situational stressors that could contribute to emotionally reactive or impulsive suicides, particularly when substance misuse and access to highly lethal means are present. This highlights the potential benefits of a range of strategies to create protective environments, provide support during stressful transitions, and enhance coping and problem-solving skills across the lifespan.[13] Suicide prevention initiatives for males might benefit from comprehensive approaches focusing on age-specific stressors reported in this study in addition to standard psychiatric markers.[13]

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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