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Rates of suicide among males increase steadily from age 11 to 21: Developmental framework and outline for prevention

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Abstract

The paper has three purposes. First, explanations for the steady age-related increase in the rate of suicide among male youth from ages 11 to 21 are offered based on a review of epidemiological- and case-control evidence. It is concluded that depression and substance use disorders are major contributors to the age-related pattern in suicide. A general increased capacity for serious acts of aggression from ages 11 to 21 might also contribute to this pattern in suicide. Second, evidence that substance abuse and depression both contribute to, and are exacerbated by, difficulties in negotiating age-salient tasks is summarized. In this context, suicides among young males are posited to mark the endpoint of the bidirectional interplay of psychopathology and developmental difficulties. Third, informed by this developmental perspective, the authors make recommendations to reduce suicides in male youth, emphasizing strategies that may interrupt cycles of depression and/or substance abuse and developmental failure. Strategies to reduce the potential for fatalities, notably method restrictions, are also discussed.

Keywords: Suicide; Adolescence; Aggression; Depression; Substance abuse

Contents

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Suicide is the third leading cause of death among adolescent males, and shows a steady age-related increase in rates from the ages of 11 to 21. Thereafter, the rate of suicide is fairly stable until rising again in late life. The first purpose of this paper is to offer an explanation for the age-related increase in the rate of suicide among male youth. We review epidemiological and case-control evidence that supports age-related changes in substance use is a major contributor to the age-related pattern in suicide in this population, and that changes in rates of depression also play a role. We also note the similarities between age-related increases in rates of serious forms of violence (particularly lethal acts) and suicide that suggests a general increased capacity for lethal violence from ages 11 to 21 may contribute to both outcomes.

The second purpose of this paper is to examine the relationship between suicide, substance use disorders, and depression from a developmental perspective. We contend that stressful life events preceding suicide do not occur spontaneously but rather often mark the endpoint of a maladaptive developmental trajectory. Further, substance abuse and depression both contribute to and are exacerbated by difficulties in negotiating age-salient tasks. Therefore, in this population suicide marks the endpoint of the bidirectional interplay of psychopathology and developmental difficulties.

The third purpose of the paper is to present prevention and treatment strategies based on these ideas using universal, selective, and indicated prevention frameworks. Universal strategies, notably mental health screening and method restrictions, may be used to lower risk broadly among young males. Selective strategies may interrupt the maladaptive trajectories of males showing a pattern of developmental failure and substance abuse and/or depression. Indicated prevention efforts include interventions for young males with substance use disorders and depressive disorders who have made suicide attempts or have considered suicide.

1. Overview of suicide among male youth

1.1. Epidemiology

Suicide in male youth in the U.S. is an urgent public health problem. In 2002 suicide was the 3rd leading cause of death among males between ages 11 and 21 (National Center for Injury Prevention and Control, 2005a) and 84.0% of suicides among individuals ages 11 to 21 were carried out by males (National Center for Injury Prevention and Control, 2005b). These data indicate that suicide prevention efforts must include a focus on male youth. Further, suicide in this population is overwhelmingly violent, underscoring the relevance of suicide to violence researchers and vice-versa. To illustrate, in 2002, 52.9% of suicides among males ages 11 to 21 were committed with firearms and another 34.7% were by "suffocation," predominantly hanging (National Center for Injury Prevention and Control, 2005b).

Suicide in the first decade of life is rare. Beginning in early adolescence, and continuing until age 21, there is a steep increase in the rate of suicide. For example, in 2002 the rates of suicide per 100,000 among males were: age 11 (0.87), age 14 (3.52), age 16 (9.58), age 18 (14.96), age 21 (20.47) (National Center for Injury Prevention and Control, 2005b). Although fluctuating slightly, thereafter the suicide rate among males remains fairly constant until a dramatic rise is seen again in late life. Although the suicide rates have varied somewhat in the past two decades, the overall age-related pattern is consistent (National Center for Injury Prevention and Control, 2005b). An understanding of suicide necessitates an analysis of the rise in rates of suicide in youth and in late life. It is likely that different mechanisms underlie the escalations in the respective developmental periods. Our focus here is the rise during adolescence and emerging adulthood.

1.2. Roles of substance use disorders and depression

Behavioral disorders in youth may be organized into broad internalizing and externalizing domains or into more specific categories, for example using diagnostic nosology (Krueger, Caspi, Moffitt, & Silva, 1998; Krueger et al., 2002; Pickles & Angold, 2003). We argue that a more specific approach may be most useful to inform suicide prevention