



H6 Child and Adolescent Suicide: A Ten-Year (2010–2019) Retrospective Analysis of Medical Examiner Cases in Kentucky

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Learning Overview: After attending this presentation, attendees will understand the trends of suicide-related deaths during childhood and adolescence during a ten-year period and how they correlate with those found at the national level.

Impact on the Forensic Science Community: This presentation will impact the forensic scientific community by identifying trends in suicide methodology, in addition to at-risk populations, in order to benefit future analytical and preventive efforts. The prevention of childhood suicide and the need for further therapy and follow-up are also discussed, as evidenced by the data reviewed.

Introduction: In 2018, more than 48,000 suicides were reported, becoming the tenth-leading cause of death in the United States. A Centers for Disease Control and Prevention (CDC) Vital Signs report found that, between 1999 and 2016, rates of suicide increased by more than 30% in half of the country. More than 6,800 suicides were registered in 2018 and was the second leading cause of death in adolescents (596) and young adults (621). Suicides comprise approximately 13% of the caseload at all regional offices under the Kentucky Office of the State Medical Examiner. A better understanding of the methodologies utilized and the demographics of those involved, in addition to a comparison with previously published data, can provide valuable information and guide recommendations concerning suicide prevention.

Materials and Methods: A ten-year retrospective review of suicide cases of children and young adolescents aged less than 18 years was conducted at the four regional offices of the Kentucky Office of the State Medical Examiner. The study focused on cases of suicide investigated by that office from January 1, 2010, through December 31, 2019. The age, race, and sex of each victim, as well as cause of death and time of year, were recorded. The investigation included analysis of postmortem toxicological findings.

Results: From a total of 24,662 medical examiner cases from all 120 Kentucky counties, 3,214 cases were classified as suicide after a thorough postmortem examination, with subsequent comparison to a previous review conducted by the Kentucky Office of the State Medical Examiner office from 1993–2002. The 131 (13.04%) suicides among ages 10 to 18 years were further subdivided into 12 decedents from ages 10 to 13, 96 decedents from ages 13 to 17, and 23 decedents aged 18.

The majority of decedents in all groups were males (72.7%). By racial composition, 80.68% were Caucasian, 11.90% were Black, and 8% were from other races. Very few Black females committed suicide, consisting of only 4% of victims in all groups. The number of suicides was highest in March (19.76% of cohort) and lowest in August (2.32% of cohort).

Firearm injury was by far the most common method of suicide for child and adolescent age groups, accounting for 70 cases (53.43%). Hanging (37.40%) and substance abuse (3.81%) were also leading methods of suicide.

Compared to the previous review (1993–2002), the percentage of suicides averaged across ten years increased from 12% to 13%, with the highest numbers in the 13- to 17-year age range. This study, in most respects, mirrors previous studies of adolescent suicide regarding race and sex. Regarding the method of suicide, although firearm injuries ranked first, the percentage of these compared to the last study dropped from 72.2% to 53.43%. Hangings remained the second cause for both groups, but the percentage increased from 22.2% to 37.4%.

Conclusions: In summary, the sex, race, and method of suicide were interestingly similar between the adolescents ages 10 to 18 years in this study of medical examiner-investigated cases of suicide. In the current study, firearm injury was the primary cause of death in most decedents in all groups, which was similar to the previous study (1993–2002) conducted.

Suicide is a critical public health problem in the United States that can have long-lasting adverse effects on individuals, families, and communities. An integrated coroner/medical examiner system profits from more comprehensive data retrieval of such cases and analysis for better public health awareness. Overall, forward-looking efforts based on new evidence and past accomplishments are needed to reduce the incidence of suicide and suicide attempts by influencing mitigation and prevention strategies.

Suicide, Child, Adolescent