

# Study finds increase in number, severity of suicide-related calls to US Poison Control

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Over-the-counter (OTC) analgesics like acetaminophen, ibuprofen, and acetylsalicylic acid (aspirin) have long been a staple in households for managing pain, fevers, and other common ailments. However, the accessibility of these medications can make them easy to take in dangerous amounts. In a new study, researchers at the Center for Injury Research and Policy and the Central Ohio Poison Center at Nationwide Children's Hospital analyzed the 549,807 calls made to Poison Control Centers (PCCs) in the US for suicide-related cases involving OTC analgesics from 2000 through 2018 and found that both the overall number and rate of these cases increased significantly by 57% and 34%, respectively, during this period. This trend was driven primarily by the increasing exposures among 6-19-year-old females.

The study, published in *Pharmacoepidemiology and Drug Safety*, found that children between the ages of 6 and 19 years accounted for half of all suicide-related OTC analgesics cases (50%) and females represented 73% of cases among individuals of all ages.

In addition to the increase in the number and rate of cases, there was also an increase in the severity of the exposures. The proportion of calls resulting in a serious medical outcome or admission to a health care facility increased significantly (a 64% increase and 29% increase, respectively) over the study period. The proportion of cases resulting in a serious medical outcome or admission also increased with increasing age.

"Because they are easy to purchase and can help alleviate a variety of symptoms, many families have over-the-counter pain relievers readily available in their homes, often in large quantities," said Alexandra Funk, PharmD, D.ABAT, co-author of the study and director of the Central Ohio Poison Center at Nationwide Children's. "Unfortunately, the easy access to these medications is likely a big part of the reason that they are used in suicide attempts and deaths. The fact that they are being used more often with more serious outcomes is cause for concern."

Nearly half (48%) of cases involved acetaminophen alone, followed by ibuprofen (33%), and [aspirin](#) (19%). Acetaminophen and aspirin disproportionately accounted for 65% and 33% of deaths, respectively. In addition, aspirin resulted in the greatest proportion of serious medical outcomes (36%) and admissions to a health care facility (68%) when compared with the other analgesics. The rates of suicide-related cases involving acetaminophen and ibuprofen increased during the study, while the rate of aspirin cases decreased.

Almost one-third of cases involved exposure to multiple substances (32%), and those cases were twice as likely to have a serious medical outcome and almost twice as likely to be admitted to a health care facility compared with individuals exposed to a single substance.

"An important first step to reduce the suicidal use of over-the-counter analgesics would be to require unit-dose packaging, or 'blister packs,' for all solid forms of acetaminophen and aspirin sold to consumers. Because suicidal ingestion is often a highly impulsive act, this would deter overdoses by limiting the amount of medication that can be extracted at one time," said Gary Smith MD, DrPH, senior author of the study and director of the Center for Injury Research and Policy at Nationwide Children's. "In addition, the US should follow the lead of other countries that have successfully reduced suicidal ingestions of these medications by limiting the package size and quantity that can be purchased by an

individual at one time." Dr. Smith added, "Remarkably, the top three substance categories associated with suicide-related ingestions in the US are antidepressants, over-the-counter analgesics, and antipsychotics, and of these, over-the-counter analgesics is the only one readily available without a prescription or other restrictions."

Provided by Nationwide Children's Hospital

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