Removing Firearms From the Home After Attempted Suicide Can Be Life Saving

Merete Nordentoft, Dr.Med., Ph.D., Annette Erlangsen, Ph.D., Trine Madsen, Ph.D.

In this issue, Olfson et al. present data showing a 37-fold higher risk of suicide within the first year after nonfatal deliberate self-harm compared with the U.S. population (1). These alarming findings stem from a large national study based on Medicaid data from 45 states. The cohort consisted of 61,297 patients who were clinically diagnosed with deliberate self-harm between 2001 and 2007. Although the study is not likely to be representative of the entire U.S. population, it provides relevant observations that could help improve follow-up after deliberate self-harm.

Olfson et al. found that among persons who presented with nonfatal deliberate self-harm, the suicide rate was 439 per 100,000 person-years and the rate of repeated self-harm was 26,320 per 100,000 person-years over the following 12 months. In absolute terms, this means that 0.4% died by suicide and 19.7% repeated deliberate self-harm within a year of the initial presentation. The high proportion of suicides is confirmed by recent findings from Sweden, where 4.9% of people with deliberate self-harm died by suicide within a median follow-up of 5.3 years (2). Nationwide Danish studies have found that between 0.9% and 1.2% of people presenting with deliberate self-harm had died by suicide within 12 months, and an international meta-analysis reported a proportion of 1.6% (95% CI=1.2, 2.1) (3–5). Nonfatal repetitions were reported to range between 11.8% and 12.2% in the Danish studies, and the meta-analysis reported a repeat deliberate self-harm rate of 16.3% (95% CI=15.1, 17.7) (4). In comparison, in the Olfson et al. study, a slightly lower 12-month postdischarge suicide rate was reported, but also a slightly higher rate of repeat deliberate self-harm.

As in previous studies (6), elevated risks of both suicide and repeat deliberate self-harm were found across *all* types of mental disorders among patients after deliberate self-harm. Considering that 20% repeat deliberate self-harm during the first year, the need for effective treatment irrespective of psychiatric diagnosis is evident. Psychotherapeutic or psychosocial treatment administered to patients with deliberate self-harm may reduce the risk of suicide and repeated nonfatal deliberate self-harm (5), as indicated by a recent Cochrane review (7). The World Health Organization recommends that patients presenting with deliberate self-harm be offered mental health care (8). However, as Olfson et al. highlighted, those who did not survive their initial deliberate self-harm episode were less likely to have received treatment for a mental disorder (whether inpatient or outpatient) compared with those who died of suicide later in the follow-up. They were also more likely to have used a violent method. Hence, the window of opportunity for intervening is smaller for this particular group of patients. In this group, only 41% had received mental health treatment during the 6 months before the initial fatal self-harm. Recent mental health care is a well-established marker of risk of suicidal behavior (9). In particular, the period shortly after discharge from an inpatient unit is linked to excess risk, and it may be crucial to ease transitions between care facility and home (9).

Olfson et al. assessed whether using a violent versus nonviolent method in the initial deliberate self-harm episode was associated with risk of repeating suicidal behavior during the next 12 months. Violent methods were categorized as firearms and other violent methods and nonviolent methods as poisoning and cutting. The lethality linked to violent means is evident; among those who died from the initial deliberate self-harm episode (N=189), 67% used a violent method.

Clearly, it might be considered a life-saving measure to restrict access to violent means of suicide among persons who have already presented with deliberate self-harm.

Among the initial deliberate self-harm incidents with a fatal outcome, 42% were by gunshot. Most often, firearms do not allow for a change of mind, as indicated by the high case-fatality rates, ranging between 61% and 91% (10–12).

The results of the Olfson et al. study repeatedly illustrate the lethality associated with firearms. For example, among those who survived an initial deliberate self-harm by firearm but who later died of suicide, 93% used a firearm again in their subsequent and fatal attempt. Furthermore, the hazard ratio of dying by suicide was almost 16 times higher among those who used a firearm than among those who used poisoning in the initial deliberate self-harm episode. Also, among those who survived the initial attempt, the risk of dying by suicide during the first month after an initial deliberate self-harm episode was 33 times higher (odds ratio=33.1, 95% CI=18.8, 58.1) among those who used firearms than among those who used poison (see Table S5 in the article's online supplement). The risk of dying by suicide during the first month after the index deliberate self-harm episode was 11 times higher in

those who used other violent methods (than firearms) compared with those who used nonviolent methods. This information is clinically very useful as it highlights an important aspect for suicide prevention among persons who have survived a deliberate self-harm episode using a violent method. Clearly, it might be considered a life-saving measure to restrict access to violent means of suicide among persons who have already presented with deliberate self-harm, particularly if a firearm or other violent method was used in the index episode.

Current firearm laws in the United States prevent effective suicide prevention. In 2014, 50% of U.S. suicides were by firearm (http://www.cdc.gov/nchs/fastats/suicide.htm). In the Scandinavian countries, the proportion is much lower; while firearms account for 23% of suicides among Finnish and Norwegian men, only 3% of men in Sweden and Denmark died by firearm suicides (13). Even without compromising the Second Amendment, it is possible to protect people at risk of suicide by removing or locking up their firearms.

Means restriction has often proved successful in lowering suicide rates (14, 15). Firearm suicides are particularly frequent in United States. A recent observational study found that states whose laws relating to handgun ownership are less restrictive—those that do not include universal background checks and a mandatory waiting period—were linked to a more steeply rising trajectory of suicide rates compared with states that maintain more restrictive laws (16). However, previous studies have produced mixed results when it comes to the effect of legal restrictions regarding permission to purchase firearms, waiting periods, safe storage, background checks, and registration guidelines (17).

Whether or not restriction of firearms is accepted as an important part of an effective strategy for universal suicide prevention, it might be a life-saving strategy to remove violent means of suicide among persons after deliberate self-harm. Having suicidal thoughts is for most people a passing phase. It is therefore important to secure the probability of surviving the initial months after a deliberate self-harm episode, as this will heighten the probability of living a long life.

AUTHOR AND ARTICLE INFORMATION

From the Research Unit and the Danish Research Institute for Suicide Prevention, Mental Health Center Copenhagen, Copenhagen; the Department of Clinical Medicine, University of Copenhagen, Copenhagen; the Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore; and the Institute of Regional Health Research, University of Southern Denmark, Odense.

Address correspondence to Dr. Nordentoft (merete.nordentoft@dadlnet.dk).

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