

Review

## Controlling Access to Suicide Means

Marco Sarchiapone <sup>1</sup>, Laura Mandelli <sup>1,2,\*</sup>, Miriam Iosue <sup>1</sup>, Costanza Andrisano <sup>2</sup> and Alec Roy <sup>3</sup>

<sup>1</sup> Department of Health Sciences, University of Molise, Via De Sanctis, Campobasso 86100, Italy;  
E-Mails: marco.sarchiapone@me.com (M.S.); m.iosue@alice.it (M.I.)

<sup>2</sup> Institute of Psychiatry, University of Bologna, 5 V.le C. Pepoli, Bologna 40133, Italy;  
E-Mail: costanza.andrisano@studio.unibo.it

<sup>3</sup> Psychiatry Service, Department of Veterans Affairs, 385 Tremont Ave., East Orange, NJ 07018,  
USA; E-Mail: alec.roy@va.gov

\* Author to whom correspondence should be addressed; E-Mail: laura.mandelli@unibo.it.

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**Abstract:** *Background:* Restricting access to common means of suicide, such as firearms, toxic gas, pesticides and other, has been shown to be effective in reducing rates of death in suicide. In the present review we aimed to summarize the empirical and clinical literature on controlling the access to means of suicide. *Methods:* This review made use of both MEDLINE, ISI Web of Science and the Cochrane library databases, identifying all English articles with the keywords “suicide means”, “suicide method”, “suicide prediction” or “suicide prevention” and other relevant keywords. *Results:* A number of factors may influence an individual’s decision regarding method in a suicide act, but there is substantial support that easy access influences the choice of method. In many countries, restrictions of access to common means of suicide has lead to lower overall suicide rates, particularly regarding suicide by firearms in USA, detoxification of domestic and motor vehicle gas in England and other countries, toxic pesticides in rural areas, barriers at jumping sites and hanging, by introducing “safe rooms” in prisons and hospitals. Moreover, decline in prescription of barbiturates and tricyclic antidepressants (TCAs), as well as limitation of drugs pack size for paracetamol and salicylate has reduced suicides by overdose, while increased prescription of SSRIs seems to have lowered suicidal rates. *Conclusions:* Restriction to means of suicide may be particularly effective in contexts where the method is popular, highly lethal, widely available, and/or not easily substituted by other similar

methods. However, since there is some risk of means substitution, restriction of access should be implemented in conjunction with other suicide prevention strategies.

**Keywords:** suicide; means of suicide; restriction of means

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## 1. Introduction

Suicide is a major public health problem, representing the 10th leading cause of death worldwide [1]. The incidence rate for completed suicide varies considerably between different countries, from 1.1 per 100,000 inhabitants in Azerbaijan to 51.6 per 100,000 inhabitants in Lithuania [2]. The highest suicide rates are found in Eastern European countries (Belarus, Estonia, Lithuania and Russia); low rates are found mainly in Latin America (Colombia, Paraguay) and in some countries in Asia (Philippines and Thailand), while countries in other parts of Europe, in North America, and other parts of Asia and the Pacific tend to fall somewhere in between these extremes.

Seeking effective intervention strategies for suicide prevention represents an important public health task. Restricting access to means of suicide has been shown to be effective in reducing completion [3], together with strategies aimed to identify and prevent suicidal acts in individuals at risk. In the present paper we examined the empirical and clinical literature on controlling the access to means of suicide.

A large body of literature sustains that the majority of attempters does not die by suicide. On the other hand, rates of death for suicide increase in subjects with repeated and life-threatening attempts [4]. Intensity of intent may be an important indicator. Studies employing scales to measure suicidal intent, reported intensity of intent to die as a major predictor of suicide completion in suicide attempters [5]. The problem in predicting suicide from ideation, attempts, or other risk factors is the predominance of false positives and some have concluded that, despite much research, there is no possibility to reliably predict and prevent suicide in any individual [6]. Many studies have identified risk factors associated to suicide completion, such as gender, previous attempts, suicidal ideation, a diagnosis of a depressive disorder or schizophrenia, but such predictors failed to identify the patients committing suicide [7]. On the other hand, Mann *et al.* [8] stated that “Suicide prevention is possible because up to 83% of suicides have had contact with a primary care physician within a year before their death and up to 66% within a month. Thus, a key prevention strategy is improved screening of depressed patients by primary care physicians and better treatment of major depression”. Many interventions such as pharmacotherapy and psychotherapy, education of professionals and gate keepers, restricting media coverage and reducing access to means, have been indicated by Mann *et al.* [8] as strategies to reduce the frequency of suicide attempts.

There is evidence in literature supporting suicide means reduction as an effective preventive strategy [9,10]. In the present review we aimed to summarize methods of suicide attempts and studies addressing and evaluating the possibility to restrict access to such methods as preventive strategies for suicide attempt.

### *3.2. Restricting Access to Means of Suicide*

A potential problem for suicide prevention by limiting access to methods is the substitution hypothesis: if one suicide method is unavailable, it will be replaced with another. It is recognized that suicidal crisis are usually of short duration and that, if their fatal outcome is prevented by help available in the meanwhile, they will not be repeated. If individuals seem to have a preference for a specific means of suicide and if they essentially experience short-lived crises, restricting access to a specific method should not bring about an increase in the substitution by other means [13]. Therefore, the fundamental assumption underlying restricting access to means of suicide is that, in many cases, it may delay an attempt until the period of high-risk passes. Moreover, if access to highly lethal methods of suicide is reduced, even where substitution occurs, the proportion of people who survive suicide attempts will be increased [22].

Means reduction can occur on a population or on an individual level. Individual level approach involves limiting access to a particular means for individuals at risk of suicide. Population-level means reduction consists in restriction of means availability by trends or policy changes [10]. In some Countries, restrictions of access to common means of suicide, has lead to lower overall suicide rates. Most of the evidence comes from studies examining the association between a population-level decrease in the availability of a given lethal means of suicide and method-specific suicide rates.