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Research report

Attempted and completed suicide: Not what we expected?

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ABSTRACT

Background: Suicide attempters and suicide completers are two overlapping but distinct suicide populations. This study aims to present a more accurate characterization by comparing populations of suicide attempters and completers from the same geographical area.
Methods: Samples and procedure: All cases of attempted suicide treated at the emergency room of the *Corporacio Sanitària i Universitària Tauli Parc de Sabadell* in 2008 ($n=312$) were compared with all completed suicides recorded in the same geographical area from 2008 to 2011 ($n=86$). Hospital and primary care records were reviewed for sociodemographic and clinical variables. *Statistical analysis*: Chi-square, ANOVA, and Mann-Whitney U tests were used to identify characteristics related to suicide completion.
Results: Compared to suicide attempters, suicide completers were more likely to be male (73.3% vs. 37.8%; $p<0.001$), pensioners (73.7% vs. 23.4%; $p<0.001$), and people living alone (31.8% vs. 11.4%; $p=0.006$). Suicide completers more frequently presented somatic problems (71.7 vs. 15.7; $p<0.001$), Major Depressive Disorder (54.7% vs. 27.9%; $p<0.001$), and made use of more lethal methods (74.1 vs. 1.9; $p<0.001$). Suicide completers were more likely to have been followed by a primary care provider (50.0% vs. 16.0%; $p<0.001$). 92.3% of the suicides committed were completed during the first or second attempt.
Limitations: Suicide completers were not evaluated using the psychological autopsy method.
Conclusions: Despite presenting a profile of greater social and clinical severity, suicide completers are less likely to be followed by Mental Health Services than suicide attempters. Current prevention programs should be tailored to the specific profile of suicide completers.

1. Introduction

It is often assumed that suicide attempters and suicide completers represent the same group of distressed individuals evaluated at different stages on the path toward suicide (Blasco-Fontecilla et al., 2010). However, there is compelling evidence that in fact they are two distinct populations that share certain characteristics (DeJong et al., 2010; Fushimi et al., 2006). In fact, the few comparative studies of these suicide populations performed to date have ignored a number of important aspects. For example, some studies report that more than 60% of suicide completers had consulted their primary care physician in the previous month to suicide (Luoma et al., 2002); however, no comparative data on prior control of suicide attempters and completers at primary care or mental health services has been published. This means that preventive strategies focused on subjects with a high frequency of suicide attempts may not be sufficient to prevent suicide completion. Indeed, a better characterization of the distinct suicide subpopulations is required for effective preventive policies that specifically target each of these subtypes of suicidal behavior (Blasco-Fontecilla et al., 2010).

Suicide attempts are between 10 and 40 times more common than completed suicides (Jimenez-Trevino et al., 2012; Kovess-Masfety, et al.; Schmidtke et al., 1996). Among the few studies that have

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compared different subtypes of suicidal behaviors, some suggest that there are certain variables that differentiate the suicide attempters and suicide completers from each other (DeJong et al., 2010; Fushimi et al., 2006; Michel, 1987). Beautrais (2004) proposed that subjects who made medically serious suicide attempts bear many similarities to suicide completers. Fushimi et al. (2006) suggested that age, sex, method used and history of previous attempts are factors that distinguish between the two populations. Finally, DeJong et al. (2010) indicated that the use of alcohol prior to suicidal behavior, as well as work-related and financial problems, could also be differential risk factors.

The aim of this study was to compare the sociodemographic and clinical characteristics of suicide attempters and completers from the same geographical area, specifically focusing on certain factors that have not been fully studied to date (i.e. prior control of suicide attempters and completers at primary care or mental health services; presence of medical pathology). It is our hope that our results will lead to further characterization of these two populations, as well as provide useful data for prevention programs to help improve effectiveness in the future.

2. Methods

2.1. Population and procedure

Three hundred and seventy-seven subjects who presented suicidal behaviors 398 times (attempted or completed suicides) were evaluated. The study was approved by the Ethics Committee of the Corporació Sanitària Parc Taulí and was conducted in accordance with the Declaration of Helsinki.

We selected all cases of suicide attempts ($n=312$) seen at the emergency room of the Corporació Sanitària i Universitària Parc Tauli during one calendar year (1 January to 31 December 2008). This unit sees all emergencies in a reference population of 474,778 inhabitants. Suicide attempters were seen by on-call psychiatrists who completed standard patient care reports. A suicide attempt was defined as an act of self-harm with clear suicidal intent (Silverman et al., 2007), regardless of the degree of lethality. Seven cases were excluded from the initial sample for not presenting clear suicidal intent.

In addition, all completed suicides ($n=86$) between 1 January 2008 and 31 December 2010 were evaluated. Since January 2008, under the aegis of the European Alliance Against Depression (EAAD) (Hegerl et al., 2008), all cases of completed suicides in our hospital's area of reference were recorded. Records for 2008 and 2009 corresponded to the legal district of Sabadell with 300,667 inhabitants. Data for 2010 also included the legal district of Cerdanyola, raising the total population to 474,778 inhabitants and covering all of the hospital's catchment area for emergency care. After any death in which suicide is suspected, forensic experts routinely conducted an autopsy and the forensic examinations necessary to establish the cause of death.

Data on both attempted and completed suicides were recorded retrospectively while the anonymity of the patients was maintained at all times. The sociodemographic and clinical information was obtained from the review of inpatient clinical histories and from emergency and primary care reports. In the case of completed suicides, information reported by forensic experts was also studied.

The following data were recorded using an ad hoc protocol in both sub-populations: sociodemographic factors (age, sex, place of birth, marital status, level of education, employment status and living arrangements), clinical factors (multiaxial psychiatric diagnosis according to DSM-IV criteria, history of previous suicide attempts, psychiatric treatment at the time of the suicidal behavior, previous medical follow-up, and family history of suicide or attempted suicide), characteristics related to the suicide event (type of behavior, trigger, previous warning, method used, date of the attempt, consumption of toxic substances at the time of the act and degree of lethality), and type of medical follow-up prior to the suicidal behavior (primary care and/or mental health care specialist).

2.2. Statistical analysis

The statistical package SPSS for Windows (version 15.0) was used for the statistical analysis. The results of the descriptive analysis are presented as measures of central tendency (mean) and dispersion (standard deviation, SD, or 95% confidence intervals, 95% CI) in the case of quantitative variables and as frequencies and valid percentages in the case of qualitative variables.

The differences between the attempted and completed suicide groups were studied with respect to sociodemographic and clinical factors and the characteristics of the suicidal behavior. The following tests were used in order to evaluate the possible specific risk factors that predispose subjects to one result over the other (i.e., survival or completion): univariate tests of the comparison of the means (one-factor ANOVA), Chi squared comparison of proportions or Mann-Whitney U non-parametric tests, and the calculation of Relative Risks or Odds Ratio (OR).

3. Results

3.1. Descriptive results

Suicide attempts represented 0.2% of the total emergencies attended during the period of the study ($n=155{,}114$) and 9.4% of the psychiatric emergencies ($n=3{,}305$). The completed suicide rate in our area of reference during the period of the study was 8.3/100,000 inhabitants in 2008, 6.6/100,000 in 2009, and 7.2/100,000 in 2010. Suicide attempts were significantly more frequent in women than in men (62.2% vs. 37.8%; $p<0.001$), but completed suicides were more frequent in men (73.3% vs. 26.7%; $p<0.001$). The mean age was 10 years greater in the completed suicide group than in the attempted suicide group (51.71 vs. 41.16; $p<0.001$). Statistically significant differences were also found in other sociodemographic factors (see Table 1).

3.2. Clinical factors (multiaxial classification of the DSM-IV)

Among axis I disorders, Major Depressive Disorder was significantly more frequent in completed suicides than in attempted suicides (54.7% vs. 27.9%; $p<0.001$). In contrast, Adjustment Disorders were significantly more frequent in the attempted suicide group (25.0% vs. 3.1%; $p<0.001$) (see Table 2).

With regard to axis II disorders, a higher incidence of personality disorders was observed in the attempted suicide group (46.2% vs. 31.8%; n.s.). Diagnosis of Cluster B Personality Disorder was also significantly more frequent in the attempted suicide group (38.1% vs. 18.2%; $p=0.01$).

As for axis III and IV disorders, suicide completers were significantly more likely to present medical pathology at the time of the suicidal behavior (71.7% vs. 15.7%; $p<0.001$) and to present diagnoses of axis IV disorders (45.8% vs. 18.6%; $p<0.001$).

3.3. Characteristics of the suicidal behavior (attempt or completion)

Table 3 shows the findings for the characteristics of attempted and completed suicidal behavior. Considering 42.3% of the overall sample had a history of previous attempts, there were no statistically significant differences between the attempted and completed suicide