ORIGINAL ARTICLE

Parasuicide in Rovigo (North of Italy) during the period 2000-2005

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Key words

Parasuicide • Mental Health Service • Emergency Department

Summary

Introduction. *The greatest predictor of eventual suicide is parasuicide, which includes both suicide attempts and deliberate self-harm with no intent to die. The rate of parasuicide is reckoned to be at least ten times the suicide rate.*
Methods. *An observational study of the population of Rovigo Public Health Unit has been carried out to investigate parasuicide cases that presented to a general hospital in the six-year period from 1st January 2000 to 31st December 2005.*
Results. *An incidence of 36.39 parasuicides/100,000/year referred to a general hospital has been estimated, with a majority of female and young subjects. The principal method used was drug poisoning (59.1%); the more frequent diagnoses are mood and personality disorders. Method of attempt distribution is different for age and gender ($p < 0.001$), while diagnosis distribution is different only for age ($p < 0.001$). Comparison between method of attempt and diagnosis distribution indicates a significant difference ($p < 0.01$). In 36.4% of cases there was no contact with the Mental Health Service after parasuicide.*
Discussion. *The present study confirms that parasuicide is more common in females and younger people and that the more probable diagnoses are mood and personality disorders. The finding of a high number of subjects without any previous contact with the Mental Health Service and, especially, after parasuicide, claims attention on primary and secondary prevention of suicidal behaviour.*
Conclusions. *The results appear to be in line with those from literature on parasuicide in Western populations.*

Introduction

Suicidal behaviour, spanning from self-harm thoughts to completed suicide [1, 2], is recognized as a serious public health problem [3, 4]. In Europe, suicide is one of the first three causes of death in 15-44 year-old people [3, 4]. In Italy figures show 6 suicides every 100,000 inhabitants per year [3], with a larger number in Northern regions [5].
Considering parasuicide or completed suicide, epidemiological data show two separate patterns. A clear-cut difference emerges on incidence, age/gender distribution and methods of attempts, but the major risk factors are common: lack of an affective relationship, changes in living situation or living in an institution, unemployment, having a mental disorder, alcohol or substance abuse, low socio-economic status and previous suicide attempts [6].
The greatest predictor of eventual suicide is parasuicide [6-8], which can be found in 40-60% of suicides [9, 10]. The relative risk is much higher in the first year [11, 12], but it remains significantly high even after 15 years [11].
Parasuicide, defined broadly, includes both suicide attempts and deliberate self-harm with no intent to die [13]. Obtaining an estimation of parasuicide rates is not as simple as for suicide. Many cases of parasuicide do not come to the attention of health services while national registers are available only for suicide. The rate of parasuicide is reckoned to be at least ten times the suicide rate [14, 15].

The study is aimed at getting a figure of the actual phenomenon of parasuicide in the area of interest (Rovigo Public Health Unit): this should provide some information for setting up further activities on prevention of suicidal behaviour. An observational study of population has been carried out in order to investigate parasuicide cases evaluated in a general hospital in the six-year period from 1st January 2000 to 31st December 2005.

Methods

The population of the study consists of Rovigo Public Health Unit residents and numbered 171,301 at 31st December 2003. This territory is located in the North of Italy and is a rural area with prevailing agriculture and small industrial activities; population density is 171.72/km^2 and the proportion of elderly people is significantly greater than the Italian rate.
The sample consists of parasuicides committed by area residents who presented to the two general hospitals of Rovigo Public Health Unit during the period 2000-2005. As defined by Linehan [13], it has been considered a case of parasuicide any intentional self-poisoning or self-injury act, irrespective of its motivation. Every case was recorded if found as occurring event and/or as dismissing diagnosis in the electronic files of Emergency Department or of in-patients Psychiatric Department. Variables considered for every parasuicide are patient's age and gender, method of attempt, psychiatric diagno-

sis (according to ICD-9) and previous (from 1995) and subsequent (up to February 2006) contacts registered in the database of the Public Mental Health Service. For analysis purpose, methods of attempts were sorted into five subtypes according to literature and psychiatric diagnoses into five broader diagnostic groups. Software SPSS 12.01 has been used for the statistical analysis: contingence tables have been carried out in order to investigate any relation between categorical variables and comparison analysis between sub-groups (according to age, gender, diagnosis and method of attempts) has been performed with chi-square test.

Results

The total number of parasuicides during the six years is 374. Three hundred and five cases are referred to the Emergency Department: 131 passed to the in-patients Psychiatric Department while 174 were discharged after the visit. Another 69 cases are referred to the Psychiatric Department: these had direct access or passed through other departments (such as Intensive Care). Therefore the total number of in-patient cases scores 200. The total subjects are 305; forty-four had repeated parasuicide several times with an average of 2.56 acts per person. The average rate of parasuicidal acts per year is 62.34 and thus the estimated incidence is of 36.39 cases/100,000/year.

Gender: There are 113 males with 142 acts (38%) and 192 females with 232 acts (62%). M:F ratio referred to the subjects and to the parasuicidal events is 1:1.69 and 1:1.63, respectively.

Age: Average age (± standard deviation) is 42.66 ± 17.27; for male subjects 41.65 ± 17.32 and for females 43.27 ± 17.24. Nearly 80% of acts were done by subjects under the age of 54 and a very low percentage going to elderly people (Table I, last column).

Method of attempts: In the majority of cases the means of parasuicide is drug and/or alcohol poisoning (59.1%), followed by self harm by cutting with sharpened objects (15.5%); less frequent are attempts committed by chemical and/or gas poisoning (6.4%), jumping (5.6%) and hanging (1.3%). In 6.4% of cases the method is not specified and the left 5.6% includes all other methods (e.g., drowning, fire arms). Comparison between method of attempt distribution and gender subgroups shows a significant difference ($p < 0.001$): for every case of self-harm with sharpened objects there are 5 with drug and/or alcohol poisoning in women while for men this ratio is 1:2. There is also evidence of different distribution by age ($p < 0.001$), with higher frequency of attempts by self-harm with sharpened objects in subjects under 34 years.

Diagnosis: Mood disorders are the more represented diagnostic group (33.4%), followed by personality disorders (21.7%), substance abuse (9.6%), adjustment disorders (8.6%) and psychosis (6.7%). Diagnosis is not available in 20.1% of cases: they were all assessed in Emergency Department and discharged after that (Tab. I). Comparison between diagnosis distribution and gender subgroups do not show any difference, while with age subgroups it demonstrates a significant difference ($p < 0.001$) with very low percentages of personality disorders in groups above 55 years (Tab. I).

Mood disorders are the prevailing diagnostic group in drugs and/or alcohol poisoning while personality disorders prevail in cutting with sharpened objects (Fig. 1). Comparison between the distribution of these two variables indicates a significant difference ($p < 0.01$).

Contacts with the Mental Health Service: In 53.2% of cases, subjects had had at least one contact with the public Mental Health Service before the parasuicidal act. Contacts after the attempt were found in 63.6% of cases, thus leaving 36.4% with an immediate drop-out. Attempts with drugs and/or alcohol poisoning had more contacts both before and after the parasuicide if compared to those with sharpened objects (59.7% and 72.8% *vs*. 43.1%, 51.7%, respectively).

Discussion

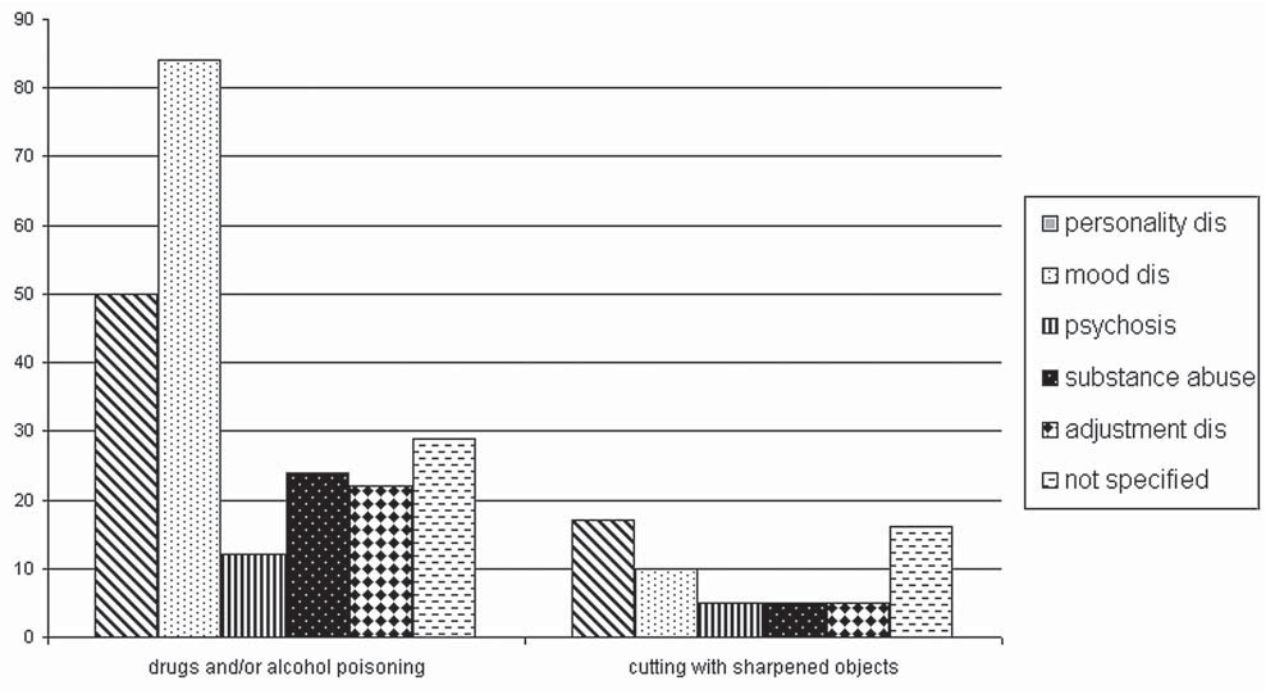
The present study confirms that parasuicide is more common in females and younger people [2, 6, 16, 17]. About three quarters of parasuicides were committed by drug poisoning [18] or by self-harm cutting while very few cases with violent methods were recorded. The frequency of diverse methods shows a difference both for age and gender ($p < 0.001$). The more probable diagnoses are mood and personality disorders with a different distribution by age ($p < 0.001$) (Tab. I). Comparison between the distribution by method of attempts and by diagnosis indicates a significant difference ($p < 0.01$) (Fig. 1). The rate of 53.2% of previous contact with the Mental Health Service is similar to the one indicated in a review about contacts before suicide with care providers [19].

An incidence of 36.39 cases/100,000/per year has been estimated for parasuicides presented to a general hospital. In the Rovigo area, a suicide rate of 11.2

Tab. I. Distribution of psychiatric diagnoses according to age group.

Age	Mood dis N (%)	Personality dis N (%)	Substance abuse N (%)	Adjustment dis N (%)	Psychosis N (%)	Not specified N (%)	Total N (%)
≤ 34	35 (23.82)	42 (28.57)	12 (8.16)	11 (7.48)	4 (2.72)	43 (29.25)	147 (39.30)
35-54	55 (37.67)	36 (24.67)	18 (12.33)	15 (10.27)	7 (4.79)	15 (10.27)	146 (39.00)
55-74	30 (53.57)	2 (3.57)	4 (7.14)	3 (5.36)	8 (14.29)	9 (16.07)	56 (15.00)
≥ 75	5 (20.00)	1 (4.00)	2 (8.00)	3 (12.00)	6 (24.00)	8 (32.00)	25 (6.70)

Fig. 1. Diagnosis distribution in the two major methods of attempt.



cases/100,000/year was recorded during the period 1995-2000 in the local Health-Unit Register [20]. Considering this rate of suicide and considering about 30% of parasuicides referring to a general hospital [14], the estimated incidence seems in line with the mentioned ratio of ten parasuicides every completed suicide.

Two studies, one from Padova [21] and one from Verona [22] can be used as comparison for geographical, cultural and partially demographical features. The incidence found was of 67.1 and 18.8 cases/100,000/per year, respectively. Methodology is different: in the first study there were included also cases seen in Mental Health Service and in General Practitioner facilities, in the other one the analysis was obtained by Police registers. The incidence estimated in the present study refers only to patients who presented to a general hospital.

The major limitation of the study is the lack of information about marital status, living situation, socio-economic status and stressful events. Moreover, the diagnosis is not available for 20.1% of parasuicides, all directly discharged from Emergency Department: thus the percentage of adjustment and reactive disorders could be underestimated.

This study induces to hypothesize some associations: mood disorders with female gender and with drug poisoning; personality disorders with subjects of age under 34 and with cutting self-harm. This may imply two different patterns of parasuicide: more frequently connected with an active phase of illness in mood disorders and with stressful events in personality disorders [23].

Conclusions

The results appear to be in line with those from literature on parasuicide in Western populations [6]. The finding of a high number of subjects without any previous contact with the Mental Health Service and, especially, after parasuicide, claims attention on primary and secondary prevention of suicidal behaviour [24, 25].

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