



## Suicide and suicides attempts in Italian prison epidemiological findings from the “Triveneto” area, 2010–2016



Giulio Castelpietra<sup>a,b,\*</sup>, Leonardo Egidi<sup>c</sup>, Marina Caneva<sup>d</sup>, Sara Gambino<sup>d</sup>, Tamara Feresin<sup>a</sup>, Aldo Mariotto<sup>a</sup>, Matteo Balestrieri<sup>e</sup>, Diego De Leo<sup>f</sup>, Lisa Marzano<sup>g</sup>

<sup>a</sup> Primary Care Service Area, Central Health Directorate, Region Friuli Venezia Giulia, Riva Nazario Sauro 8, Trieste, Italy

<sup>b</sup> Department of Medicine, Surgery and Health Sciences, University of Trieste, ple Europa 1, Trieste, Italy

<sup>c</sup> Department of Economics, Business, Mathematics and Statistics ‘Bruno de Finetti’, University of Trieste, ple Europa 1, Trieste, Italy

<sup>d</sup> Triveneto Penitentiary Headquarters, Ministry of Justice, Piazza Castello, 12, Padova, Italy

<sup>e</sup> Unit of Psychiatry, DAME, University of Udine, Piazzale Santa Maria della Misericordia, Udine, Italy

<sup>f</sup> Griffith University, 170 Kessels Rd, Nathan, QLD, Australia

<sup>g</sup> Faculty of Science and Technology, Middlesex University, The Burroughs, London NW4 4BT, UK

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### ABSTRACT

The aim of this observational study was to assess rates of suicide and suicide attempts, in relation to gender, age, place of birth and security levels, in north-eastern Italian prisons during 2010–2016, and investigate associations with prison overcrowding, offence type and prior self-harm and suicide attempts. The study was based on individual data on suicides and suicide attempts from 16 prisons, with an average yearly number of 3900 inmates during the study period, for all prisons combined. Descriptive and binomial regression analyses were performed.

Rates of suicide and suicide attempts in Triveneto prisons were 1 and 15 per 1000 inmates, respectively. > 90% of suicides and suicide attempters were men aged between 21 and 49 years old, and most had committed violent offenses. Only half the prisoners who died by suicide and 30% of those who made a suicide attempt in custody were Italians. ‘Cooperative witnesses’ had the highest mean suicide attempt rate (30/1000 inmates). Fourteen per cent of suicides and 19% of attempters had a prior history of suicide attempts and self-injury. In binomial regression analyses, predictors of suicidal behaviour were being a male inmate in standard security conditions, with a mean age of 30 years.

The study highlighted that there is a need for suicide prevention policies in Triveneto; these should take into account predictors of suicidal behaviours and individual characteristics of suicidal inmates. More research is warranted in order to both evaluate the effectiveness of prevention plans and better assess risk of suicide in specific groups, such as cooperative witnesses.

### 1. Introduction

Suicidal behaviours in prison are a major global public health problem (Fazel, Ramesh, & Hawton, 2017; World Health Organization, 2007). Recent international research has shown that rates of suicide in prison are up to seven times higher than in the general population (Rabe, 2012). Suicide attempts have also been observed to be more frequent in inmates than non-inmates (Jenkins et al., 2005; Sarchiapone et al., 2009; Wichmann, Serin, & Motiuk, 2000). Previous suicide attempts and self-injury are among the main risk factors for suicide in inmates (Carli et al., 2011; Fazel, Cartwright, Norman-Nott, & Hawton, 2008; Fruehwald, Matschnig, Koenig, Bauer, & Frottier, 2004; Hawton, Linsell, Adeniji, Sariaslan, & Fazel, 2014; Humber, Webb, Piper,

Appleby, & Shaw, 2013; Roy, Carli, Sarchiapone, & Branchey, 2014; Verdolini et al., 2017). Other risk factors appear to be specifically related to the prison environment (Dye, 2010; Fazel et al., 2008; World Health Organization, 2007). Indeed, suicidal behaviours in prisons are likely due to complex interactions between individual-level (such as the types of crimes committed before incarceration (Fazel et al., 2008; Hawton et al., 2014; Rabe, 2012; Verdolini et al., 2017), and ecological factors (Jenkins et al., 2005), including the nature and quality of prison environments and regimes (Dye, 2010; Fazel et al., 2017). However, there remains little conclusive evidence in relation to the latter, and their role in precipitating or mediating suicidal behaviour in prisoners. For example, prison overcrowding has been shown to be both a risk factor for suicide (e.g. because associated with more restrictive regimes

\* Corresponding author at: Primary Care Service Area, Central Health Directorate, Region Friuli Venezia Giulia, Riva Nazario Sauro 8, Trieste 34100, Italy.  
E-mail address: [giulio.castelpietra@regione.fvg.it](mailto:giulio.castelpietra@regione.fvg.it) (G. Castelpietra).

and reduced ‘purposeful activity’ (Leese, Thomas, & Snow, 2006) and a potentially protective factor (e.g. by reducing the likelihood of a vulnerable prisoner being housed in a single cell (Fazel et al., 2017).

The relationship between prisoner suicide and different levels of custodial security (e.g. whether an establishment is designated to hold prisoners for whom the very highest conditions of security are deemed necessary, versus those for whom less restrictive, or even ‘open’, conditions are considered appropriate) is also an especially important – but relatively unexplored – area for investigation, as different security levels are in turn associated with potentially key factors such as staffing levels, time out of cell and in solitary conditions, purposeful activity, and more or less austere built environments. Findings from United States (Dye, 2010) and Canada (Wichmann et al., 2000) suggest that maximum security conditions may be associated with a higher risk of suicidal acts, possibly due to higher levels of deprivations and isolation. However, these findings are yet to be replicated in other countries, including ones such as Italy, where special security levels exist (e.g. those provided to inmates as part of witness protection programmes).

In Italy, suicide deaths were recently reported to be 12 times more likely in prisoners than in the general population (Fazel et al., 2017). These findings echo earlier data relating to 1990–2002 (Preti & Cascio, 2006). Unfortunately, despite such high rates of suicide in Italian prisons, few individual-based studies have been carried out in Italy in order to investigate suicide risk factors in inmates (Carli et al., 2011; Roy et al., 2014; Sarchiapone, Carli, Di Giannantonio, & Roy, 2009; Sarchiapone, Jovanovic, et al., 2009; Verdolini et al., 2017). Nonetheless, efforts to enhance prevention strategies in prisons were recently carried by the Italian government through the approval of a national action plan on suicide prevention in prisons (Conferenza Unificata Stato-Regioni, 2017). This has also led to existing regional action plans being updated, and new regional action plans being developed, tailored to local needs and realities. For example, the Veneto region is currently updating its regional suicide prevention plan (Giunta Regionale regione Veneto, 2012) and Friuli Venezia Giulia (FVG) recently approved its own plan (Giunta regionale Regione Friuli Venezia Giulia, 2017). These regions belong to the so called “Triveneto” area, which is made up of three regions: Veneto, Trentino Alto Adige and FVG, and has a population of approximately 7,200,000 inhabitants.

As rates of suicide and suicide attempts in FVG (Giunta regionale Regione Friuli Venezia Giulia, 2017) and Veneto (Giunta Regionale regione Veneto, 2012) prisons appear to be high compared to the rest of the country, the Triveneto Penitentiary Department has released for analysis epidemiological and individual-level data on inmate suicidal behaviour. Furthermore, it is of particular interest to enhance knowledge of potential risk and protective factors related to the prison environment, such as security level. Such data can help improve identification of inmates at high risk of suicide and inform the design and implementation of effective suicide prevention strategies (Barker, Kolves, & De Leo, 2014; Marzano et al., 2016), with potentially important implications nationally as well as internationally (Fazel et al., 2017).

Thus, with the present study we aimed to: 1) assess rates of suicide and suicide attempts, in relation to gender, age, place of birth and security levels, in Triveneto prisons during 2010–2016; 2) investigate levels of prison overcrowding and offence type in all suicides and suicide attempts occurred during the study period; and 3) assess whether suicides and suicide attempters had previous episodes of suicide attempts and self-injury in prison.

## 2. Material and methods

We analysed data from the 16 prisons in the Triveneto area, which during 2010–2016 had a yearly average overall number of 3900 inmates (for all prisons combined). Each prison in the region has up to four separate sections, with different security levels. All prisons have an “ordinary” section for inmates whose crimes do not require specific

security measures. Four prisons have a “protected” section, housing sex offenders, former police officers and anybody who should be kept separated from ‘ordinary’ inmates for safeguarding reasons. Three prisons have a “high-security” section, usually reserved for inmates who must be completely isolated, such as criminal organizations’ affiliates or terrorists. Two prisons also host a section for inmates under witness protection (hereinafter called “cooperative witnesses”). These individuals require specific imprisonment conditions, such as being isolated from other inmates and having heavily restricted and supervised access to phone calls, mail, and family contact more generally. Three prisons also provide a section for women prisoners, and one establishment only houses female inmates (two more prisons in Veneto had female sections, but only until 2012 and 2013, respectively). The security level in women’s sections is usually ordinary.

The database of the National Penitentiary Department of the Italian Ministry of Justice was used to retrieve data on the total number of inmates per year in each prison section, the statutory capacity of each prison section, as well as individual data on inmates who made fatal and non-fatal suicide attempts. The database allowed to link data from prisons records of Triveneto, using a unique anonymous identifier.

In the database, self-harm acts are registered as “suicide” when they resulted in the inmate’s death, and as “suicide attempts” when suicidal intent was expressed. “Self-injury” was registered in cases involving non-lethal or unknown to be lethal means (Preti & Cascio, 2006). This classification of self-harm acts is routinely done by penitentiary staff, after the intervention of a physician. No individual data on inmates who self-injured were available.

Data on suicide in the general population were retrieved from the Italian Institute of Statistics (Istat; available at <http://dati.istat.it>). Male suicides aged 20 to 59 years old from North-East Italy were selected, for comparison with data on suicides in Triveneto prisons. Data were available only for 2010–2014 and no data on suicide attempts were available. General population data for 20–59 year old males in North-East Italy were obtained from the same web address, based on the 2011 Italian census.

### 2.1. Individual data on suicides and suicide attempters

Annual data on inmates who died by suicide or attempted suicide from 1st January 2010 to 31st December 2016 were selected from the Penitentiary Department database of Triveneto. Only inmates whose suicide or suicide attempt took place in prison (as opposed to, for example, shortly after release) were registered (Preti & Cascio, 2006).

Gender, age, place of birth, offence type, prison density and custody type were linked to each selected inmate using a unique anonymous identifier. Age was divided into nine categories (decades from 18 till 69 years). Place of birth data were categorized as: Italy, Europe, Africa, Asia or America.

Where more than one index offence was committed by an inmate, only the first crime registered in the database was used. Crimes were then divided into 15 categories: abetment, assault and battery, criminal organization affiliation, damage and fire, drug offenses, escape, exploitation of prostitution, extortion, homicide, indecent and persecutory acts, kidnapping, sexual offenses, theft and robbery, violation of immigration rules, violation of weapons’ rules (data on the percentage of inmates in whole Triveneto prison population in custody for each offence type were not available).

Prison density was calculated as a percentage of overcrowding, which was in turn derived as follows (Leese et al., 2006):

$$\frac{\text{Total number of inmates in each prison} - \text{statutory capacity of each prison}}{\text{statutory capacity of each prison}} \times 100$$

The number of inmates in each prison and the statutory capacity of each prison were those of 31st December of each year considered

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