Suicide on the Isle of Wight: A Case-study of 35 Suicides among Mental Health Service Users Between 2006 and 2008

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Abstract

Aims: To identify the sociodemographic, clinical and service delivery risk factors for suicide in psychiatric patients in a limited geographic area.

Method: A retrospective case study of 35 patients who died as a result of suicide between January 2006 and December 2008.

Results: Male gender, unemployment, living alone, basic education and significant life events were identified as sociodemographic factors. A history of previous psychiatric admission, previous suicide attempt, suffering from depression, co-morbidity of another psychiatric disorder (mainly stress-related symptoms and alcoholism), and contacting the services prior to suicide were found as typical clinical factors. Hanging was the most common method of suicide in both men and women. Most men died in spring and summer, while the majority of females died in autumn.

Clinical implications: As in similar studies, mental disorders could be identified as the strongest risk factor for suicide. Almost 70% of suicides were conducted by people suffering from a mental disorder. Treating mental disorders and identifying certain sociodemographic and clinical characteristics of people suffering from mental disorders and addressing them is the key in suicide prevention strategies.

Key words: suicide, service users, risk factors, mental disorders, sociodemographics.

Introduction

Suicide is a major public health problem. Approximately one million lives worldwide are lost to suicide each year. According to the World Health Organization (WHO) statistics, an increase of approximately 49% in suicide rates in males and 33% in females can be observed between 1950 and 1995. The highest suicide rates for both men and women are found in Europe, more particularly in Eastern Europe (Bertolete & Fleischmann, 2005).

Suicide is the sixth most common cause of death in the general population of the United Kingdom; in the 15-44 year-old age group, it is the third most common cause of death (Baldwin & Hirschfield, 2005).

The suicide rate for men in the South Central region is significantly lower than the England average. Hampshire PCT has the lowest rate in the region, falling significantly below the regional and national averages. The Isle of Wight and Oxfordshire have the next lowest rates, while Southampton, Buckinghamshire and Berkshire West have the highest rates (Department of Health (DoH), 2002). Since the publication of the Government's suicide prevention strategy (DoH, 2002), suicide has become a key focus for psychiatric services in the UK.

The present study focuses specifically on the Isle of Wight (IOW). The IOW is a small island (380km^2) 4 miles off the British south coast, separated from the mainland by the Solent. The only connections with the mainland are maintained through ferries from Portsmouth, Southampton and Lymington. The IOW has a resident population of around 130,000. Apart from national and international tourism, small-scale electronic industry and shipbuilding, the island has a mainly rural character (258km^2 is farmland). The island's healthcare services are organised in one single NHS Primary Care Trust, providing general as well as mental healthcare in the island's only hospital and in the community. Although the Trust aims at providing comprehensive healthcare, due to the island's small size patients have to travel to the mainland for certain specialist physical and mental health treatment. The Trust's Care Group Mental Health and Learning Disabilities provides Adult Mental Healthcare (including inpatient acute services, community mental healthcare and psychological therapy services), Older People's Mental Healthcare (including inpatient and community dementia care), Substance Misuse Services, a Child and Adolescent Mental Health Service, and Learning Disability Services. Patients who need specialist inpatient treatment for e.g. forensic problems, eating disorders, substance misuse rehabilitation, or child and adolescent psychiatric problems have to be transferred to mainland specialist hospitals. For patients as well as their relatives and visitors, this often means a journey of several hours both ways, as well as being taken out of their familiar surroundings.

Aims of the study

The aim of this study was to identify sociodemographic, clinical and service delivery risk factors in a sample of patients who were under the care of the local mental health services.

Inclusion Criteria:

1. Any individual who received services of the local mental health facilities within two years prior to their death, and who died between

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January 1st 2006 and December 31st 2008 as a result of suicide.

2. Death resulted from 'intentional self-harm' as defined and classified in the ICD-10 (WHO 1992; codes X60-X84), and had been confirmed by the coroner's verdict as suicide or as an 'open verdict', the circumstances of death indicating a probable suicide.

Exclusion criteria:

1. Death resulted from 'accidental death' or 'drug overdose' (according to the coroner's verdict).
2. Non-service users, i.e. individuals not using the local mental health services within the two years prior to their death.

Data collection:

Data were collected from medical case notes (including post-mortem examination and coroners' reports), and were recorded under the following headings:

1. Demographic and socio-economic characteristics:
    a. Marital status,
    b. Education,
    c. Employment,
    d. Psychiatric admissions, and
2. Psychiatric diagnosis, using the ICD-10 (WHO, 1992);
3. Adverse life events (ALEs) that were taken from the audited files, and grouped in nine cogent categories.
4. Attendance at accident and emergency (A&E) within a year prior to suicide;
5. Contact with mental health services;
6. Previous suicide attempts, and
7. Circumstances of suicide (method, place, day and month of suicide)

There were 51 suicides (13 women and 38 men) of Isle of Wight residents, of whom 49 died on the island and two on the mainland. 35 individuals (10 women, with an average age of 41.9 years, age range 17- 63 and 25 men, with an average age of 43.5 years, age range 21-76 years) were found to fulfil the inclusion criteria, nine in 2006, eight in 2007 and 18 in 2008 respectively.

Results

With regards to family status 37.1% were single; 37.1% lived in a marriage (31.4%) or other form of engagement (5.7%); 22.8% were either divorced (5.7%) or separated (17.1%); and 2.9% were widowed.

In terms of education, 11.4% of all cases had an academic education and 85.7% had a basic education (until the age of 16). In 2.9% of cases it was impossible to find out their level of education.

Of the cases, 48.5% were unemployed; 40% employed; 5.7% retired; and 2.9% registered disabled. In 2.9% of the cases, it was impossible to identify their employment status.

More than 77% of individuals had a history of previous suicide attempts, and almost 63% a history of previous psychiatric admission.

Furthermore, 80% of the individuals had some adverse life event within the year prior to suicide. As the results indicate more

women than men had financial (30% vs 8%); work-related (20% vs 8%), and bereavement issues (10% vs 4%). On the other hand, relationship problems (32% vs 20%), judicial problems (24% vs 10%), housing problems (20% vs 10%); and illness of a family member (12% vs 0%) were more frequent in men than in women (Table 1).

Table 1. Demographic and socio-economic factors

	Women (n-10)		Men (n-25)		All (n-35)	
Family status	No.	%	No.	%	No.	%
Single	4	40	9	36	13	37.1
Married	2	20	9	36	11	31.4
Engaged	0	0	2	8	2	5.7
Divorced	2	20	0	0	2	5.7
Separated	1	10	5	20	6	17.1
Widow/widowers	1	10	0	0	1	2.9
Education						
Academic	1	10	3	12	4	11.4
Basic	9	90	21	80	30	85.7
Unknown	0	0	1	4	1	2.9
Employment						
Employed	3	30	11	44	14	40
Unemployed	7	70	10	40	17	48.5
Retired	0	0	2	8	2	5.7
Disabled	0	0	1	4	1	2.9
Unknown	0	0	1	4	1	2.9
Previous suicidal attempts	7	70	20	80	27	77.1
Previous psychiatric admission	7	70	15	60	22	62.8
Adverse Life Events	No.	%	No.	%	No.	%
Any adverse event	7	70	21	84	28	80
Relationship	2	20	8	32	10	28.5
Bereavement	1	10	1	4	2	5.7
Work-related	2	20	2	8	4	11.4
Illness of a family member	0	0	3	12	3	8.6
Financial	3	30	2	8	5	14.2
Housing	1	10	5	20	6	17.4
Judicial	1	10	5	24	6	17.4
Physical illness	2	20	4	16	6	17.4

Depressive disorders were diagnosed in 34.3%, followed by alcohol-related disorders (28.6%); polysubstance abuse (14.3%); bipolar affective disorder (8.6%); 'neurotic' and stress-related disorders; schizophrenia spectrum disorders (equally 5.7%) and organic mental disorders (2.9%). Mental and behavioural disorders due to use of substances (42.8%),and mood disorders (42.8%) were the most common primary diagnoses. On the other hand, stress-related (31.4%) and personality disorders (31.4%) were the most common co-morbidities. Drug related and affective disorders were the next most common co-morbid disorders each diagnosed in 14.3% of the cases. (Table 2).

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Table 2. Diagnoses

Diagnoses	Primary (n-35)		Secondary (n-35)	
	Number	%	Number	%
Organic mental disorders	1	2.9	0	0
Alcohol use disorders	10	28.5	0	0
Multiple substance use disorders	5	14.3	0	0
Schizophrenia spectrum disorders	2	5.7	0	0
Bipolar affective disorder	3	8.6	0	0
Depressive disorders	12	34.3	5	14.3
"Neurotic" and stress-related disorder	2	5.7	11	31.4
Personality Disorders	0	0	11	31.4

Table 3. Circumstances related to suicide

Circumstances of the suicide	Women (n-10)		Men (n-25)		All (n-35)	
	No.	%	No.	%	No.	%
Method of suicide						
Hanging	5	50	19	76	24	68.5
Drug overdose	4	40	1	4	5	14.3
Drowning	1	10	2	8	3	8.6
Jumping	0	0	1	4	1	2.9
Gun shot	0	0	1	4	1	2.9
Exsanguinations	0	0	1	4	1	2.9
Place of suicide						
Home	5	50	13	52	18	51.4
Public place	4	40	8	32	12	34.2
Relative's house	1	10	2	8	3	8.6
Prison	0	0	2	8	2	5.7
Day of suicide						
Monday	1	10	4	16	5	14.3
Tuesday	2	20	2	8	4	11.4
Wednesday	2	20	10	40	12	34.3
Thursday	2	20	2	8	4	11.4
Friday	2	20	2	8	4	11.4
Saturday	0	0	4	16	4	11.4
Sunday	0	0	1	4	1	2.9
Unknown	1	10	0	0	1	2.9
Season of suicide						
Spring	2	20	8	32	10	28.5
Summer	1	10	6	24	7	20
Autumn	6	60	5	20	11	31.4
Winter	1	10	6	24	7	20
Contact with services prior to suicide						
≤2 weeks	9	90	12	48	21	60
≤3 months	0	0	7	28	7	20
≤ 6 months	0	0	2	8	2	5.7
> 1 year	1	10	4	16	5	14.3

Suicide by hanging was the most common method (76% of men and 50% of women). In terms of the place of suicide, 51.4% of the cases died in their homes, 34.3% in a public place; 8.6% in their relatives houses, and 5.7% in prison.

With regard to the day of suicide, 34.3% of all suicides were committed on Wednesday; 14.3% on Monday; equally 11.4% on Saturday, Tuesday and Thursday. 8.6% died on Friday; 5.7% on Sunday, and in 2.9% we could not identify the day of their death. No women died during the weekend and in 10% of women it was impossible to find out the exact day of their suicide.

Twenty percent of women died in spring; 10% in summer; 60% in autumn; and 10% in winter. On the other hand, 32% of men died in spring, 24% in summer; 20% in autumn and 24% in winter.

Sixty percent of the individuals contacted the services within two weeks prior to their death (37% within one week and 22.8% within two weeks). Exactly 20% contacted the services within three months, 5.7% within six months, and the remaining 14.3% >1 year. Women contacted the services earlier than men; 90% of them contacted services within two weeks; of whom 50% within a week of death (Table 3).

Discussion

During the three-year period of the review, there were 51 suicides by Isle of Wight residents, of whom 68.6% (35 individuals, 10 women and 25 men) were local mental health service users.

As far as ethnicity is concerned, all cases were of white British origin, which is at variance with the Wessex in-patient suicide study (King et al, 2001a,b), and with national (Crawford et al, 2005) and international (Joe, Marcus and Lewis, 2007) studies indicating that suicide risk is higher in ethnic minorities. However, the Isle of Wight population consists mainly of white British residents, and with a non-white population of only 1.3% (ONS, 2007).

Of the individuals who died from suicide, 71.4% were men and 28.6% were women. This is almost identical to previous data on suicide on the Isle of Wight and Hampshire, where during the five-year period of 1999 to 2003, 75% of suicide cases were by men

and 25% by women (DoH, 2002). Furthermore, our findings support data of international authors reporting the risk ratio for men compared to women being 3:1 (Keown et al, 2007).

In our study, 60% of individuals were single, divorced or separated which is consistent with the Wessex Suicide Audit (King, 2001), the North Staffordshire suicide study (Boardman et al, 1999) and is in support of previous studies indicating that living alone and being single are associated with a higher risk of suicide (Qin, Agerbo & Mortensen, 2003).

In terms of education, more than 85% of the individuals had only basic education, which supports statements that those with lower education are at higher risk of suicide (Fergusson; Beautrais & Harwood, 2003).

With regard to employment status, we have found that 48.5% of

all cases were unemployed. In addition, we found that unemployment was strikingly higher in women (70%) than in men (40%). These findings are consistent with the Wessex Suicide Audit (King, 2001) and the Wessex in-patient suicide study (King et al, 2001a,b); North Staffordshire suicide study (Boardman et al, 1999) that found a significant connection between unemployment and suicide. An international comparison study by Yip et al. (2000) even emphasizes that proportion of unemployed is over-represented in the suicide population.

Eighty percent of the individuals had some adverse life event within the year prior to suicide. This is consistent with the Wessex suicide Audit (King, 2001); the Wessex in-patient suicide study (King et al, 2001a,b), the North Staffordshire suicide study (Boardman et al, 1999), and other studies reporting adverse life events being one of the most common risk factors of suicide (Gunnel & Lewis, 2005).

In terms of diagnosis, depressive disorders were diagnosed in more than 34% of cases (70% of women and 20% of men), which is again consistent with the Wessex suicide audit (King, 2001), the Wessex in-patient suicide study (King et al, 2001a, b) and others (Coryel & Young, 2005) indicating that between 36% and 90% people who die as a result of suicide suffer from depression. Schizophrenia was diagnosed in about 6% of cases, which supports studies estimating a lifetime suicide risk of approximately 5% in people with schizophrenia (Hor and Taylor, 2010). Nevertheless, our findings are in contrast to an Australian study of suicide (Burgess et al, 2000), which found schizophrenia and schizoaffective disorders being the most common diagnoses.

We found that 31.4% of individuals also fulfilled criteria for stress-related disorders. This supports studies that demonstrated a positive association between adverse life events and suicide (Sareen et al, 2005). Alcohol use disorders were diagnosed in 36% of men and 10% of women. This is consistent with studies that found alcoholism in one-third (Beglund, & Ojehagen, 1998) to 54% (Lonnqvist, 2000) of people who died due to suicide. We found personality disorders in 31.4% of all cases which is consistent with Henriksson et al. (1993) who found axis-II diagnosis in 31% of suicide victims and Lonnqvist (2000) who diagnosed personality disorders in 5-44% of people who died as a result of suicide.

Our data are in contrast to the North Staffordshire suicide study (Boardman et al, 1999), which linked the increased risk of suicide with a diagnosis of bipolar affective disorder. In our study, bipolar affective disorder was diagnosed in less than 9% of cases.

In terms of methods of suicide, hanging was the most common. 76% of men and 50% of women died as a result of hanging. The second most common way was drug overdose; 40% of women but only 4% of men died by this method. Previous data of suicides on the Isle of Wight (DoH, 2003), compiled in the five-year period of 1999 to 2003, found that hanging was also the most common method (42% of male deaths, 17% of female deaths). Strikingly, our study shows that the number of both men and women who died by hanging has doubled. Furthermore, the number of women who died from an overdose has also increased (from 33% to 40%). In contrast to this, the number of male suicides by an overdose has plummeted (from 19% to 4%).

Our results are also in concordance to findings of studies (Brooks & Watson, 2006, Secretary of State, 1999) that reported hanging as the commonest method of suicide in men and poisoning in women.

In terms of the location, more than half of the cases died in their homes, which is roughly similar to Gunnell & Lewis's study (2005), which reported approximately three-quarters of cases took place in the person's home.

With regard to the day on which suicides took place, more than 34% died on a Wednesday. Moreover, no women died during the weekend. This is in contrast with data provided by the ONS (2005), which found that the largest number of suicides took place on Mondays. Furthermore, our findings contradict studies reporting that public holidays were associated with higher suicide rates (Johnson et al, 2005).

In terms of seasonal fluctuation of suicide, more than half of men died during the spring and summer seasons. This finding is consistent with studies showing an increase in the incidence of suicide in spring and early summer (Petridou et al, 2002). Although the majority of previous European studies have shown a spring or summer peak in suicide, studies from the UK in the recent past have not. In particular, two studies (Simkin et al, 2003, Yip, Chao & Chiu, 2000) that used ONS data for England and Wales between 1982 and 1999 found no – or very little – evidence of a seasonal effect.

In total contrast to this, 60% of women died in autumn, which is in line with one of the recent studies, which reported no spring or summer peak in suicide (Page, Hajat & Kovats, 2007).

In our study, 90% of women and 48% of men contacted services within 14 days prior to their death. This is in line with the Wessex suicide audit (King, 2001), which found that 40% of men and 60% of women who died had seen a medical practitioner in the four weeks prior to their death. Furthermore, our data are concordant with Bessant, King and Peveler (2008) who performed an audit of 278 suicides in Hampshire and the Isle of Wight over a two-year period (2002-2004) to determine the characteristics of those who died by suicide and had been in recent contact with NHS Direct. Significantly more females than males had contacted NHS Direct in the two weeks before death.

In addition, our data support the results of the National Confidential Inquiry (DoH, 2001) into suicides reporting that a quarter of suicides are preceded by mental health service contact during the year prior to death. Moreover, our results are in line with findings of Luoma et al. (2002) who concluded that over half of those completing suicide had made contact with a primary care professional in the month before death, and around three-quarters had contact within one year prior to suicide.

Most individuals (77%), who died as a result of suicide, had a history of previous suicide attempts. This also supports findings of the North Staffordshire suicide study (Boardman et al, 1999), which found that the risk of death due to suicide is associated with past history of deliberate self-harm, and of the Wessex in-patient suicide study (King et al, 2001a, b) that found that individuals who died due to suicide were significantly more likely to have attempted suicide in the previous six months. Moreover, this is

consistent with an Australian study (Burgess *et al*, 2000), which found that 67% patients who died by suicide had previously attempted suicide.

Conclusion

Comparing our data, of a study in a small geographical area, with those of studies worldwide appears to indicate that there are many similarities in the circumstances and conditions that are conducive to suicide, as well as in the parameters of the suicides themselves.

It cannot be denied that people with mental health problems are at greater risk of suicide. More than two-thirds of completed suicides had a severe depressive episode at the time of the act of suicide, however, this is not always recognised, and if identified it is not always treated effectively (King, 2001). Moreover, factors such as gender, social isolation, polymorbidity and recent adverse life events can strongly contribute to the decision-making process of people who take their lives. Furthermore, particularly from the geographical point of view, it seems that lack of opportunities, lower education and mainly, unemployment, are relatively common in rural areas and play an important role in suicidal behaviour worldwide (Yip *et al*., 2000).

From a preventive perspective, suicide prevention programmes therefore should focus on the treatment of psychiatric illnesses, in particular depressive disorder. There is a large body of evidence that early recognition and adequate treatment of depression is one of the essential ways of suicide prevention (Rutz, von Knorring & Walinder, 1989). At the same time, it is crucial to be aware of the vital role of psychosocial support of vulnerable individuals. Misleading clinical improvement in the absence of corresponding alleviation of situational problems, as well as patient alienation appear to be important hazards (Morgan & Priest, 1991).

Our results along with findings of several other studies (King, 2001) support the suggestion that there are certain sociodemographic and clinical characteristics, which can predict a high risk of suicide; and they may be generally applicable for the majority of mentally disordered individuals.

Conflict of interest

None.

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