

The association between suicide and the utilization of mental health services in South Tirol, Italy: A psychological autopsy study

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Abstract

Aims: The aim of the present study was to investigate potential differences between suicide decedents who had contact with a psychologist or psychiatrist before committing suicide and those individuals who had not had previous contact with a mental health professional prior to ending their lives.

Methods: Psychological autopsy interviews ($N = 396$) were conducted for individuals who died by suicide between 1997 and 2007 in South Tirol, Italy.

Results: The study found that suicide decedents known to mental health professionals were more frequently women and more frequently unemployed or with unstable employment. These decedents were significantly more likely than those unknown to mental health professionals to have a family history of mental illness, one or more past suicide attempts, and more frequent substance abuse, and likely to have frequent alcohol abuse. They more often had visited a physician in the last four weeks before dying and more frequently complained about psychological symptoms. In the prediction of group membership, individuals whom were known to mental health professionals prior to their suicidal act were 3 times more likely to have a family history of mental illness, 5.8 times more likely to have one past suicide attempt, 9.7 times more likely to have two or more past suicide attempts and 3.5 times more likely to have visited a physician in the four weeks prior to their death.

Conclusion: Our findings indicate that suicide decedents who had contact with mental health services can be distinguished from those who were not known to mental health professionals.

Keywords

Suicide, psychological autopsy, psychiatric diagnosis, service utilization, risk factors

Introduction

Suicide represents a significant worldwide public health issue. According to data from the World Health Organization (WHO), suicide is reported to be one of the 10 most frequent causes of death in every country and one of the top three causes of death among people between 15 and 35 years old (World Health Organization, 2000). Approximately 877,000 people die by suicide each year (World Health Organization, 2003), and the number of suicides has increased as much as 60% in the last 50 years in some countries (Bertolote, Fleischmann, De Leo, & Wasserman, 2004). In order to address this problem, many countries have organized prevention campaigns, some of which have proven to be ineffective (Bertolote et al., 2010; Bertolote et al., 2004). However, these ongoing efforts need to continue to be implemented and evaluated for effectiveness in order to successfully reduce the incidence of suicide around the world.

Several risk factors for suicide have been highlighted in the literature. For example, the association between

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suicide and a psychiatric diagnosis has been consistently documented (Mann, Waternaux, Haas, & Malone, 1999; Nock et al., 2008). Retrospective studies employing the psychological autopsy method have estimated that between 90% and 98% of individuals who die by suicide meet the criteria for at least one psychiatric disorder (Cavanagh, Carson, Sharpe, & Lawrie, 2003; Inskip, Harris, & Barraclough, 1998; Lonnqvist & Koskenvuo, 1988). Although previous research has found associations between psychiatric conditions and risk for suicide attempts and completions (Kessler, Borges, & Walters, 1999; Nock et al., 2009), our knowledge of suicide risk factors is still relatively limited. Although most suicide research has been conducted with clinical samples who seek out psychiatric services, the literature indicates that 50%–75% of individuals who die by suicide did not have previous contact with a mental health professional before their suicidal act (Cavanagh et al., 2003; Cheng, Chen, Chen, & Jenkins, 2000; Li, Phillips, Zhang, Xu, & Yang, 2008; Luoma, Martin, & Pearson, 2002). These findings suggest that little is known about those who have died by suicide but did not have any prior contact with psychiatric services.

Furthermore, it is unclear whether or not this group (i.e. those without contact with mental health services) is different from the group who had previous contact with mental health services. One study (Owens, Booth, Briscoe, Lawrence, & Lloyd, 2003) found that the group of suicide decedents who did not have any contact with a mental health professional reported more past suicide attempts, present or past mental illness, and social and interpersonal problems. Others (Chen, Liao, & Lee, 2009; Salib & Green, 2003; Svetlicic, Milner, & De Leo, 2012) have found that suicides who had not sought prior treatment used more violent methods, were more likely to be living alone and to leave a suicide note, and were less likely to be married or report problematic consumption of alcohol. Individual factors impeding help-seeking behaviours include male gender, proximity to health services, waiting time for an appointment, older age, and being an ethnic minority. Moreover, a recent study in European countries demonstrated that the perceived levels of social support and perception of mental illness predicted the utilization of health services by adults with depression (McCracken et al., 2006). In another recent study (Kovess-Masfety et al., 2007), it was found that Italy had the lowest percentage of lifetime usage of mental health services for depression out of the six countries evaluated, highlighting the need for continued research investigating the link between service utilization and suicide risk.

Taken together, this research suggests that risk and protective factors for suicide in individuals not known to mental health professionals may differ from those who utilize psychiatric services, even though it is not yet clear how relevant these differences may be. Therefore, it is important for researchers to design and implement studies that examine risk and protective factors specifically for individuals who have not had any contact with health services. Given the

difficulty of identifying at-risk individuals who choose not to seek out mental health services, one method of establishing significant risk factors in this group is to compare the musing psychological autopsies to those who died by suicide and received prior mental health treatment. The results from a psychological autopsy study may aid in the development and enhancement of suicide-prevention strategies for those individuals not known to psychiatric services who are planning to take their own life.

The present study addressed two major issues: (1) are there differences between suicides who were in contact with mental health services and those who were not in contact with the same service; and (2) what are the characteristics associated with suicides who did not have contact with mental health services? We compared the two groups of suicide decedents on variables including age, ethnicity, marital status, school attainment, employment status, life stressors and comorbidities, as well as variables germane to their suicidal crisis. We then investigated various factors thought to differentiate between the two groups of suicides. Specifically, we hypothesized that those not in contact with mental health services might have financial problems, a family history of suicide, and adverse life events in childhood. The findings from this study may inform suicide-prevention efforts, particularly for those who are less likely to seek out mental health services.

Method

Study population

The study was approved by the Authority of the Public Health Department of the Autonomous Province of Bolzano. The cases for psychological autopsy interviews were all suicides of individuals residing in South Tirol, Italy, who died between 1997 and 2007. Suicides were excluded from the study based on the following criteria: individuals not residing in the provincial territory; information was unclear or missing; the suicide death occurred outside the provincial territory; the decedent had an illicit drug use disorder; informed consent was refused by proxy referrals. Overall, 452 files were identified and examined. For 56 of the suicides, we were unable to ascertain whether or not the suicide was known to mental health services and, therefore, these cases were excluded from the analyses. There were no differences in gender, age or ethnicity between those suicides included in the study and those excluded.

Mental health professionals were defined as psychiatrists or psychologists working in the public health service that provided free psychiatric care to all citizens.

Measurements

The psychological autopsy approach was used in this study. This is the most direct method available to investigate the

relationship between risk factors and suicide (Cavanagh et al., 2003; Isometsa, 2001). It is designed especially to allow proxy-based diagnostic assessments. Typically, at least two different informants are used to complete comprehensive interviews. Informants include mother or equivalent, father or equivalent, spouse and or girlfriend/boyfriend, siblings, cousins and friends. Studies assessing the validity of the psychological autopsy technique support the reliability and validity of this method, with estimates of concordance between direct clinical assessment and by means of psychological autopsy that vary between 0.8 and 0.9 (Brent et al., 1993; Conner, Conwell, & Duberstein, 2001; Kelly & Mann, 1996). Our group has previously reported similar high levels of inter-rater agreement for key diagnoses among unselected suicides (Giupponi et al., 2010; Pycha et al., 2009).

The psychological autopsy methodology was used to derive Axis I and Axis II DSM-IV psychiatric disorders. This is a valid technique (Conner et al., 2001; Isometsa, 2001; Kelly & Mann, 1996) that involves identifying the family member or friend best acquainted with the subject to act as informant. Previous research indicates that the identification of specific psychiatric diagnoses using the psychological autopsy methodology does not vary according to the informant's relationship with the deceased (Luoma et al., 2002; Stack, 1998).

Between March 1997 and May 2008, the Department of Psychiatry of Bolzano administered questionnaires to all of the provincial Departments of Public Health requesting information about causes and methods of death (information extracted from death certificates) of individuals who died by suicide in the provincial territory. The data returned were cross-referenced to the registered-persons database (MENTA), which provides socio-demographic information for residents. Structured interview instruments were used to inquire about the following themes, which have been shown in previous research to be associated with suicidal behaviour (Harris & Barraclough, 1998; Innamorati et al., 2008; Law, Wong, & Yip, 2010; Pompili, Innamorati, Masotti et al., 2008; Pompili, Innamorati, Szanto et al., 2011; Pycha et al., 2009; Seguin et al., 2007): (1) demographic factors and basic variables such as marital status; (2) employment status, educational status, and living arrangements; (3) psychosocial and stress factors such as losses (e.g. separation/divorce, death of spouse/partner, death or divorce of parents, death of children), school or work failure, recent financial problems, living with individuals with severe mental illness, and traumas during infancy and childhood; and (4) variables concerning the mental illness of the suicide and his/her relatives, including psychiatric disorders and suicidal behaviours among family members and any contacts with a medical centre (general practitioner (GP), psychiatrist or psychologist). The suicide method for previous attempts was transformed into a dichotomous variable: violent methods (e.g. hanging, jumping, shooting or stabbing, drowning

and burning) and non-violent methods (e.g. poisoning and gassing).

Psychiatric diagnoses as well as inter-rater reliability and validity of psychiatric diagnoses were obtained using the SCID-I and SCID-II interviews (Spitzer, Williams, Gibbon, & First, 1992). These are structured interviews that cover all the major psychiatric disorders, as well as personality traits. DSM-IV psychiatric diagnoses were ascertained only for 173 suicides occurring from 2002 to 2009. Those for whom it was possible to ascertain a diagnosis differed from other suicides by gender (women: 31.0% and 20.3%, respectively for those with a diagnosis ascertained and those for whom it was not possible to ascertain a diagnosis; $p < .01$), but not by age ($t_{391} = 0.57$, $p = .57$) or ethnicity ($\chi^2_3 = 3.57$, $p = .31$). Furthermore, as expected, suicides known to mental health professionals were more likely to be assigned a diagnosis ($p < .001$).

As markers for the presence of mental illness, we used physician/psychiatrist diagnoses. In the cases where there was no previous physician/psychiatrist diagnosis on file, two independent authors (GG, RP) evaluated the symptoms reported and any prescribed drugs or drug combinations dispensed in order to arrive at a diagnosis. Moreover, a third party was consulted when a common decision was difficult to reach. The mean k value for inter-rater reliability was 0.91.

Controls were defined as suicide completers without contact with mental health services. These were selected from the same pool of suicides.

Statistical analysis

The analyses used to examine potential differences between the two groups (i.e. not known to mental health professionals vs known to mental health professionals) were t -tests for dimensional variables and chi-square tests (χ^2) and one-way Fisher exact tests for contingency tables. The p values were corrected for multi-tests by employing the Benjamini-Hochberg method. The variables that were found to be significant in the bivariate-level analyses after correcting for multi-testing were then included as independent variables in a loglinear model analysis with group membership serving as the dependent variable. All associations are reported as odds ratio (OR) with their respective p values. All the analyses were performed with the statistical package for social sciences SPSS for Windows 19.0.

Results

Characteristics of the 396 reported suicides are listed in Table 1. Approximately 76% of all the suicides were males, with a mean age of 52.69 (SD = 18.02) (71% were adults and 28% were older adults). Over 76% of the suicides were German, 16.5% were Italian and 5.7% were Ladins.¹

Table 1. Demographic characteristics of suicides.

	<i>n</i> (%)
Men	339 (75.7)
Age	52.69 (SD = 18.02, range: 12–94)
Ethnicity	
Italian	70 (16.5)
German	322 (76.1)
Ladins	24 (5.7)
Other	7 (1.7)
Marital status	
Married	171 (40.5)
Widowed or divorced	78 (18.5)
Single	173 (41.0)
Living alone	97 (23.5)
School attainment	
13+ years	106 (26.9)
8 years	143 (36.3)
5 years or less	145 (36.8)
Work	
Employed	202 (51.3)
Unemployed or with unstable employment	54 (13.7)
Retired	101 (25.6)
Other	37 (9.4)
Known to mental health professionals	206 (52.0)
Diagnosis^a	
None	18 (4.5)
Bipolar disorder	38 (9.6)
Major depressive disorder	57 (14.4)
Psychosis	22 (5.6)
Others	25 (6.3)
Substance abuse disorders	13 (3.3) ^b

^aIt was possible to ascertain a DSM-IV diagnosis for 173 suicides who died from 2002 to 2009.

^bWe included suicides in this category when they had only a diagnosis for a substance abuse disorder; where there were other comorbid diagnoses we reported this.

DSM-IV diagnoses were ascertained for 173 of the suicide cases. Only 4.5% of the suicides revealed no evidence of a DSM-IV diagnosis, whereas around 24% of the suicides were diagnosed with a mood disorder (bipolar disorder (BD) and major depressive disorder (MDD)), 5.6% were diagnosed with schizophrenia or other psychotic disorders, 6.3% were diagnosed with other specified DSM-IV diagnoses (mostly anxiety disorders and personality disorders), and 3.3% were diagnosed only with a substance abuse disorder (we included suicides in this category when there was no comorbidity with other Axis I disorders).

Table 2 lists differences between suicides known to mental health professionals and those not known to mental health professionals for socio-demographic variables. Suicides known to mental health professionals were more frequently women (34.6% vs 14.4%, $p < .001$), more

frequently unemployed or with unstable employment (17.3% vs 10.1%; $\chi^2_3 = 12.20$, $p < .01$) and less frequently employed (48.0% vs 55.6%) or retired (21.4% vs 28.7%) than suicides not known to mental health professionals.

Differences in life events and familial or personal psychopathology between the two groups of suicides are presented in Table 3. Suicides known to mental health professionals (compared to those unknown to mental health professionals) had more frequently a family history of mental illness (42.8% vs 22.7%, $p < .001$), one or more past suicidal attempts (42.1% vs 9.6%, $\chi^2_2 = 58.43$, $p < .001$) and substance abuse (illicit drugs or psychotropic drugs; 9.8% vs 2.7%, $\chi^2_2 = 8.29$, $p < .05$). Conversely, alcohol abuse was more frequently reported from suicides not known to mental health professionals (31.5%) as compared to suicides known to mental health professionals (26.9%). The two groups differed in DSM-IV diagnosis ($\chi^2_5 = 59.52$, $p < .001$). Overall, 38.6% of suicides not known to mental health professionals compared to only 0.8% of those known to mental health professionals did not have a DSM-IV diagnosis. In contrast, 17.1% of suicides known to mental health professionals versus none of those not known to mental health professionals had a diagnosis of schizophrenia or other psychosis; while 26.4% of suicides known to mental health professionals and 9.1% of those not known to mental health professionals had a diagnosis of BD. Other specified diagnoses were more prevalent for those known to mental health professionals (16.3% vs 9.1%) than in other suicides, while a single diagnosis of a substance abuse disorder was more prevalent in suicides not known to mental health professionals (11.4% vs 6.2%) than in those known to mental health professionals.

Differences between groups for characteristics of the suicidal crisis are listed in Table 4. Suicides known to mental health professionals less frequently used violent methods to kill themselves (68.9% vs 86.3%, $p < .001$), and they more frequently visited a GP in the four weeks before dying (52.8% vs 36.7%, $p < .001$) and complained about psychological symptoms (91.4% vs 68.8%, $p < .001$; depression: 67.8% vs 40.6%, $p < .001$) than did suicides unknown to mental health professionals.

All the variables that were significantly associated with the groups at the bivariate-analysis level were entered as independent variables in a loglinear model. (The variable diagnosis was excluded due to the high numbers of missing values.) The model fitted the data well (Likelihood ratio $\chi^2_{1139} = 88.03$, $p = 1.00$; see Table 5). Only four variables were still significantly associated with the groups after controlling for the presence of all other variables. Individuals whom were known to mental health professionals prior to their suicidal act were 3 times more likely to have a family history of mental illness ($p < .05$), 5.8 times more likely to have one past suicide attempt, 9.7 times more likely to have two or more past suicide attempts ($p < .05$), and 3.5 times more likely to have visited a GP in the four weeks prior to

Table 2. Differences between groups on socio-demographic variables.

	Not known to mental health professionals (n = 190) %	Known to mental health professionals (n = 206) %	Statistics	p <
Men	85.6	65.4		.001**
Age (M)	54.59 (SD = 19.62)	50.72 (SD = 16.04)	$t_{361.85} = -2.13$.05
Ethnicity			$\chi^2_3 = 3.50$.32
Italian	14.7	18.0		
German	80.0	73.3		
Ladin	4.7	6.8		
Other	0.5	1.9		
Marital status			$\chi^2_2 = 0.21$.90
Single	39.9	41.7		
Married	42.0	39.8		
Widowed or divorced	18.1	18.4		
Living alone	22.3	24.9		.32
School attainment			$\chi^2_2 = 8.97$.05
13+ years	22.1	31.8		
8 years	34.3	38.8		
5 years or less	43.6	29.4		
Work			$\chi^2_3 = 12.20$	0.01*
Employed	55.6	48.0		
Unemployed or with unstable employment	10.1	17.3		
Retired	28.7	21.4		
Other	5.6	13.3		

Note: One-way Fisher exact test where not otherwise specified; Benjamini-Hochberg correction.

*p < .05, **p < .001.

their death ($p < .01$), compared to those who were not known to mental health professionals.

Discussion

Mental health service utilization and the delivery of treatment to suicidal individuals have both recently received increased attention and need to be empirically investigated (Gonzalez, Alegria, Prihoda, Copeland, & Zeber, 2011; Wasserman et al., 2012). Consequently, a better understanding of the specific demographic, clinical and behavioural characteristics of individuals who died by suicide and were in contact with a psychiatrist or psychologist versus non-contact suicides are of great clinical relevance. The present study aimed to better characterize suicide decedents who made contact with mental health service providers versus those who never established contact with these services prior to their death.

Our findings indicate that several variables characterized suicides who did and did not utilize mental health services. The analysis revealed that many of the characteristics of individuals who died by suicide without having contact with a mental health professional did not differ significantly from the group who had utilized services; age, marital status, living situation, school attainment, family loss or loss of important relationships, traumatic experiences, recent school or work failure, financial problems, presence

of previous suicidal behaviours in family, place of death, communication of suicidal intent, and leaving a suicide note did not differ between the two groups.

The absence of differences between the two groups regarding their educational level contradicts previous research (Lorant, Kunst, Huisman, Costa, & Mackenbach, 2005; Preville, Hebert, Boyer, Bravo, & Seguin, 2005; Rubenowitz, Waern, Wilhelmson, & Allebeck, 2001; Stack, 1998) that suggested that a higher level of education is associated with an increased likelihood of overcoming the potential stigma of mental illness, in turn contributing to a higher probability that these individuals will seek out mental health services. However, one study found that higher education levels were related to the patients' decreased willingness to take psychiatric medications (Croghan et al., 2003). Future researchers should continue to investigate the relationship between education and help-seeking behaviours in order to elucidate the association between these variables since this could have important implications for suicide-prevention efforts.

Moreover, no significant differences were found for age, as would be expected from the literature (Pycha et al., 2009). However, a difference in help-seeking behaviour between men and women has been reported in the international literature (Chang et al., 2009; Hawton, 2000; Isometsa, Henriksson, Aro, Heikkinen, Kuoppasalmi, & Lonnqvist,

Table 3. Differences between groups for life events and familial or personal psychopathology.

	Not known to mental health professionals (<i>n</i> = 190) %	Known to mental health professionals (<i>n</i> = 206) %	Statistics	<i>p</i> <
Romantic life events	46.1	43.0		.31
Familial life events	24.1	21.7		.34
Life events in childhood	32.5	36.3		.27
Recent school or work failure	14.5	14.1		.52
Financial problems	11.9	15.8		.17
Family history of mental illness	22.7	42.8		.001**
Suicidal behaviours in family members	23.9	24.4		.51
Past suicidal attempts			$\chi^2_2 = 58.43$.001**
1	7.0	21.5		
2+	1.6	20.5		
None	91.4	57.9		
Diagnosis ^a			$\chi^2_5 = 59.52$.001**
None	38.6	0.8		
Bipolar disorder	9.1	26.4		
Manic depressive disorder	31.8	33.3		
Psychosis	0.0	17.1		
Others	9.1	16.3		
Substance abuse disorders	11.4 ^b	6.2 ^b		
Substance abuse			$\chi^2_2 = 8.29$.05*
Alcohol	31.5	26.9		
Others	2.7	9.8		
None	65.8	63.2		

Note: One-way Fisher exact test where not otherwise specified; Benjamini-Hochberg correction.

^aIt was possible to ascertain a DSM-IV diagnosis for 173 suicides (129 known to mental health professionals and 44 not known to mental health professionals).

^bWe included suicides in this category when they had only a diagnosis for a substance abuse disorder; where there were other comorbid diagnoses we reported this.

p* < .05, *p* < .001.

Table 4. Differences between groups for the suicidal crisis.

	Not known to mental health professionals (<i>n</i> = 190) %	Known to mental health professionals (<i>n</i> = 206) %	Statistics	<i>p</i> <
Died in inhabited place	70.2	65.3		.18
Violent methods	86.3	68.9		.001**
GP last four weeks	36.7	52.8		.001**
Psychological complaints	68.8	91.4		.001**
Communication of suicidal intent	28.6	30.0		.44
Suicide notes	32.9	21.3		.07

Note: One-way Fisher exact test where not otherwise specified; Benjamini-Hochberg correction.

p* < .05, *p* < .001.

1994). This difference, as confirmed by our data, suggests that women were more likely to be in the group of suicides known to mental health professionals. One explanation for this finding is that a higher percentage of suicidal women experience risk factors (e.g. presence of diagnosis, symptoms, social factors) compared to women in general. Another explanation is that men may be less likely to seek out

psychological help due to an adherence to social norms and a masculine gender role orientation, promoting strength, aggressiveness and suppression of emotions (Berger, Levant, McMillan, Kellehe, & Sellers, 2005). Thus, mental health professionals should consider this gender discrepancy in help-seeking behaviours when designing effective suicide intervention and prevention strategies.

Table 5. Loglinear model (suicides unknown to mental health professionals as references)^a.

Known to mental health professionals * Parameter	Log(OR)	OR	95%CI OR		p <
			Lower	Upper	
Men	-0.34	0.71	0.24	2.10	.54
Employed	-0.52	0.59	0.12	2.97	.53
Unemployed or with unstable employment	0.45	1.57	0.25	10.08	.63
Retired	-1.18	0.31	0.06	1.65	.17
Family history of mental illness	1.10	3.01	1.23	7.37	.05
Past suicidal attempt	1.75	5.77	1.48	22.47	.05
Past suicidal attempts ≥ 2	2.27	9.68	1.06	88.15	.05
Alcohol abuse	-0.15	0.86	0.31	2.35	.77
Other substance abuse	-1.00	0.37	0.06	2.38	.30
Violent methods	-0.42	0.66	0.24	1.82	.42
GP last four weeks	1.26	3.54	1.48	8.43	.01
Psychological complaints	1.10	2.99	0.99	9.06	.053

Note: Model fit: Likelihood ratio $\chi^2_{1139} = 88.03, p = 1.00$.

^aThe variable 'diagnosis' was not inserted into the model due to the high number of missing values.

The profiles of psychological symptoms and substance abuse were different (i.e. the known group complained more often about psychological symptoms and reported more substance abuse than the group not known to mental health professionals), while alcohol abuse showed the opposite trend (i.e. less alcohol abuse among the suicides known to mental health professionals). Furthermore, the group of suicides known to professionals was at a three times higher risk of suffering from a mental illness as compared to the not-known group.

Various studies have attempted to put the association between suicide and psychiatric disorders in an appropriate perspective (Bertolote et al., 2004; De Leo, 2004; Pompili, 2010; Pridmore, 2010). The conclusion derived from psychological autopsy studies, namely that the vast majority of individuals who die by suicide had a mental disorder at the time of their death, has been shown to suffer from several biases (Pouliot & De Leo, 2006).

First, scholars worldwide use the term psychological autopsy for any retrospective investigation. Some of these studies lack comprehensive data from interviews with key persons. It is rather easy to classify a person as psychiatrically depressed when in fact he or she was understandably sad over the state of his or her life. Most of the data obtained in psychological autopsy studies are derived from a forensic examination, physician or death register, and much less often from family members or friends who could make sense of depressive features that are distinguishable from clinical depression. Suicide is a problem of the human condition or, as Shneidman points out a dissatisfaction of the status quo (Shneidman, 2005, 2010).

Pompili et al. (2012) recently reviewed suicide-prevention programmes that can be helpful in preventing suicide.

For example, prevention efforts targeting symptoms related to suicide should be developed in order to identify those individuals at an elevated risk of engaging in suicidal behaviours before they follow through with the suicidal act. In line with the findings of Rutz and colleagues (1997), greater success for the identification and assessment of those at risk for suicide was possible for women (who tend to search for help and report more depressive symptoms) than for men (who show other types of risk factors such as alcohol misuse). In our data, men did not ask for help as often and reported more problems with alcohol (Giupponi et al., 2010; Pycha et al., 2009). Suicide prevention requires specific inquiry, which must involve careful attention to suicidal risk and protective factors, as well as exploring warning signs for suicide, such as talking about suicide and death and having no reason to live. Most suicidal individuals give definite warnings of their suicidal intention, but significant others are either unaware of the significance of these warnings or do not know how to respond to them. Suicidal individuals may withdraw from friends and social activities and may have experienced a recent severe loss (especially in a relationship) or a threat of a significant loss. Moreover, they may show drastic changes in behaviour and lose interest in hobbies, work and school, as well as increasing their use of alcohol or drugs and showing unwillingness to 'connect' with potential helpers. Mass media plays a central role in delivering messages about where to seek help. Also, efforts should be made to reach people who live alone, who are separated/divorced or who are widowed (since there is evidence that being married is a protective factor for suicide (Masocco et al., 2008)).

Our results indicated that the suicides whom were known to mental health professionals often had a family

member with a history of mental illness. The presence of a family member suffering from psychological symptoms appears to have a positive influence on help-seeking behaviours. This finding is consistent with previous research (Kendler, 1995) and suggests that individuals who have a family member with a psychiatric diagnosis are more likely to seek treatment for their own mental health problems. One interpretation of this finding is that individuals who witness a family member's positive experience with a mental health provider and successful treatment may be more inclined to utilize these services for their own psychological issues.

The findings in the current study demonstrate that suicides whom were known by a mental health professional were 3.5 times more likely to also have had contact with a GP at some point during the four weeks prior to their death. This result is of concern and suggests that, although some people utilized recent services from a GP, they eventually went on to commit suicide. This finding corroborates previous research documenting that patients suffering from depression and other psychiatric illnesses known to confer significant risk for suicide often utilize services from a GP instead of a psychiatrist or psychologist (Luoma et al., 2002). This highlights the importance of understanding why some suicidal patients seek services from mental health providers while others make contact with their primary care physicians for their mental health needs.

Limitations

The results of the present study have the common limitations inherent to the psychological autopsy methodology. First, measurements rely heavily on informants, who may not have accurate information about the index subject. Second, informants may be in the grieving process at the time of the interview, making them more likely to overestimate signs and symptoms of the deceased. Third, the personal characteristics of the respondent could also influence the quality of the information. Nevertheless, previous studies have supported the validity and reliability of this methodology (Conner et al., 2001; Dumais et al., 2005; Isometsa, 2001; McGirr, Paris, Lesage, Renaud, & Turecki, 2007). Fourth, it was not possible to ascertain a diagnosis for many of the suicides who were not in contact with mental health facilities due to the lack of reliable informants. Those who had contact with mental health agencies could be charted for their past psychiatric history, whereas it was difficult to determine a possible psychiatric disorder at the time of suicide for those who had not had such contact.

Conclusions

The current findings demonstrate that suicides who had contact with mental health services also had more contact

with physicians, reported more psychological complaints, and used less violent methods when compared to those who never had contact with mental health services. One noteworthy finding is that many suicides communicated their suicidal intent prior to their death, suggesting that many people in profound crisis still feel the need to communicate with others and seek out possible solutions to overcome their distress. Nonetheless, the major challenge in the prevention of suicide is to deliver the proper education to GPs, who in turn must be sufficiently trained to assess suicide risk in patients. It will also be important for physicians to be adequately trained in psychiatric services as well as in primary care. In sum, the results from the present investigation confirm several known risk factors for suicide as well as reinforce previous findings. However, further research is warranted to investigate help-seeking behaviours for individuals at risk for suicide in order to successfully identify them and then direct them to effective mental health services.

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Note

1. Ladins are one of the three major South Trolean linguistic groups. Ladin is a Rhaeto-Romance language related to the Venetian and Swiss Romansh languages.

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