Adolescent Suicide in Quebec and Prior Utilization of Medical Services

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ABSTRACT

Background: Psychopathology is the main risk factor for adolescent suicide but several studies have shown that only a small proportion of suicide victims receive mental health care during the months preceding their suicide. The goal of this study is to describe the utilization of medical services by Quebec adolescent suicide victims during the year preceding their suicide.

Methods: All suicides of persons aged 19 or less that occurred during a five-year period were retrieved from the Quebec Coroner’s database. Corresponding medical services utilization data were retrieved from the Quebec physician payment database (RAMQ) and the Quebec hospitalization database (MED-ECHO). Data were analyzed in terms of types and intensity of medical services (physical or psychiatric), types of providers (general practitioners, psychiatrists, and other medical specialists), and timing of interventions relative to the date of suicide.

Results: 78% of all Quebec adolescent suicide victims utilized medical services during the year before their suicide. However, only 12% of all victims received medical attention for psychiatric problems, and only 9.9% met with a psychiatrist during that same period of time. General practitioners and non-psychiatric medical specialists provided medical attention for psychiatric problems to only 5.6% and 0.7% of those future suicide victims at least once. This suggests that information and training programs pertaining to adolescent suicide and psychopathology should be implemented for GPs and non-psychiatric medical specialists as well.

Interpretation: These results suggest that the level of recognition and treatment of psychopathology in Quebec adolescents who later commit suicide is low, despite the fact that a large proportion of them meet with physicians during the year preceding their suicide. This suggests that information and training programs pertaining to adolescent suicide and psychopathology should be implemented for GPs and non-psychiatric medical specialists as well.

La traduction du résumé se trouve à la fin de l'article.

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precedes their suicide. That proportion was 7% and 20%—during the three months preceding suicide—in two US studies reviewed by Brent. In the UK, two thirds of Barralough et al.’s adult subjects had seen a family physician in the month before their suicide, and 40% in the week before. Such discrepancies justify new measurements in specific contexts.

**METHODS**

After approval of the protocol by the Quebec “Commission d’accès à l’information”, all cases of completed suicides by Quebec adolescents (age less than 19) that occurred during the five-year period between January 1, 1992 and December 31, 1996 were retrieved from the Quebec Coroners Office. That period was chosen in order to ensure completeness of data collection, since coroners’ investigation reports may take some time to be completed and entered into their database. Quebec coroners are generally certified physicians, some being lawyers, with specific training in forensic medicine and law. All deaths from non-natural or unknown cause are investigated. In complex cases, coroners may obtain additional expertise from senior personnel belonging to the Central Office. A death is classified as a suicide based on the World Health Organization’s criteria. This is determined from police information, autopsy results, past and current medical history, as well as interviews with witnesses and persons from the victim’s environment.

We are not aware of independent validation studies of Quebec coroners’ suicide investigations. The procedure is probably more specific than sensitive since it is likely that a certain number of suicides are classified as accidents when evidence is lacking. False positives are probably very rare.

For each suicide, the following information was extracted from the Quebec Coroners Office computerized database: date of birth, sex, date of event (i.e., date of suicide), date of death, and means of suicide. The names and health insurance numbers of the victims were used for retrieving information about medical services from the physician fee-for-service payment database of the “Régie de l’assurance maladie du Québec” (RAMQ), and about hospitalizations from the MED-ECHO database of the Quebec Ministry of Health and Social Services (MHSS). These data were retrieved for a one-year period before suicide, using the date of departure in the case of hospitalizations. All precautions were taken in order to protect nominal information as required by the Quebec Law on Access to Information.

In 1999, fee-for-service accounted for 79.2% of general practitioners’ payment, 65.9% of psychiatrists’ payment and 86.1% of other medical specialists’ payment. These proportions were slightly higher in 1995 and 1996. Our results may thus underestimate outpatient medical services provided to suicide victims. For psychiatrists and other medical specialists, the underestimation is probably negligible since inpatient medical services, which we call “medical visit” in the following, groups all outpatient services.

The utilization unit for outpatient medical services, that we call “medical visit” in what follows, groups all outpatient services provided by a single physician to a single patient during one calendar day. A medical visit is classified as “psychiatric” if it includes at least one mental health evaluation or intervention, and as “physical” otherwise. Hospitalizations from the MED-ECHO database are classified as “psychiatric” if they include at least one mental health diagnosis, and as “physical” otherwise. All data were entered into a relational database and descriptive statistics were produced with the SPSS® program.

**RESULTS**

During the five-year period between January 1, 1992 and December 31, 1996, 435 persons under 19 committed suicide in Quebec, 334 males and 101 females (male/female ratio: 3.3:1) (Table I). Mean age at date of suicide was 16.3 (range 11-18) and there was no significant age difference between males and females. Hanging was the most frequent means of suicide (54%), followed by firearm (28%), trauma (11%), and intoxication (6%). Firearms
were used by a higher proportion of males (33%) than females (10%).

340 suicide victims (78% of all victims) had at least one outpatient medical visit during the year before their suicide (range 1-121) (Table II). 73.3% of all suicide victims (319/435) met with a general practitioner, 8.7% (38/435) met with a psychiatrist, and 33.6% (146/435) met with other medical specialists. The average number of visits per subject was higher with psychiatricists than with other types of physicians (p<0.05). Only 47 subjects (10.8% of all victims) received medical attention for a psychiatric problem, mostly by psychiatrists (8.7%: 38/435) and general practitioners (4.1%: 18/435). Only 5.6% (18/319) of those subjects who met with a general practitioner and 0.7% (1/146) of those who met with a non-psychiatric medical specialist received medical attention for a psychiatric problem. The proportion of outpatient medical visits involving a psychiatric evaluation or intervention was very low for both general practitioners (2.4%: 29/1,206) and non-psychiatric medical specialists (0.2%: 1/415).

As shown in Table III, 56 suicide victims (12.9% of all victims) were hospitalized during the year before their suicide. 5.9% of all suicide victims (26/435) were hospitalized with a psychiatric diagnosis (but these hospitalizations could also include physical diagnoses), and 8% (35/435) were hospitalized for exclusively physical conditions. A small number of patients who were hospitalized repeatedly, mostly for psychiatric conditions.

Considering outpatient medical visits and hospitalizations together, only 12% of all suicide victims (52/435) received medical attention for a psychiatric problem during the year preceding their suicide. Assuming that patients who were hospitalized with a psychiatric condition were seen by a psychiatrist, only 9.9% (43/435) of all suicide victims met with a psychiatrist during the year preceding their suicide. Among those victims who met with a physician at least once during the year preceding their suicide, 84.7% (288/340) did not get medical attention for a psychiatric problem.

As shown in Table IV, 11% of all suicide victims (46/435) met with a physician – either in outpatient or hospitalization settings – during the week before their suicide, 22% (96/435) during the preceding month, 43% (185/435) during the preceding three months, and, as mentioned earlier, 78% (340/435) during the preceding year. Six patients committed suicide while they were still hospitalized. Distributions of those last medical encounters vary in function of their temporal proximity to suicide. Not unexpectedly, the proportion of subjects who received medical attention for a psychiatric problem when they last met with a physician (and the proportion of subjects who were last seen by a psychiatrist) tends to increase with shorter delays to suicide, from 9% (29/340) (one year or less before suicide) to 30% (14/46) (one week or less before suicide). The proportion of hospitalizations also increases with shorter delays to suicide. However, the largest proportions of these last medical encounters involved general practitioners and physical problems, except during the last week before suicide.

**DISCUSSION**

It was shown in previous research that a large proportion of adolescent suicide victims suffer from various forms of psychopathology, and that most of the time they have been ill for more than one year when they commit suicide. Psychopathology is also generally recognized as the most important risk factor for suicide, and proper diagnosis and treatment of mental illness represent major components of suicide prevention strategies.\(^{1,4,15}\) This study shows that during the year preceding their suicide, only 12% (52/435) of all Quebec adolescent suicide victims received medical attention for a psychiatric problem, and only 9.9% (43/435) met with a psychiatrist over that same period of time. For reasons that were mentioned before, these proportions may be somewhat underestimated, which does not impact on our interpretation.

Considering that at least 78% (340/435) of subjects met with a physician during the year preceding their suicide, and at least 43% (185/435) during the preceding three months (which, again, may be somewhat underestimated), there seems to be ample room for improvement of physicians’ detection of mental health problems in
adolescents who are at risk for suicide. This applies to both general practitioners and non-psychiatric medical specialists who provided medical attention for psychiatric problems to only 5.6% (18/319) and 0.7% (1/146) of those future suicide victims with whom they met in outpatient settings.

Our data do not reveal much about the nature and appropriateness of mental health services that were provided to future suicide victims, except that the intensity of medical interventions, in terms of the average and median number of outpatient visits per subject, was quite low in a very large proportion of the cases. Results from other studies suggest that diagnostic and therapeutic interventions that are provided to future suicide victims are frequently inadequate.8,9 However, a series of studies by Rutz16 suggest that an intensive educational intervention aimed at general practitioners on the detection and treatment of depression has led to a 30% to 60% reduction of suicides in the Swedish island of Gotland. More indirectly, Isaaksson9 argues rather convincingly that the 3.5-fold increase in the use of antidepressants in Sweden between 1991 and 1996 may have contributed significantly to the 19% decrease in suicide rate that was observed over the same period of time. These two studies did not specifically consider adolescent suicides but they suggest that better recognition and medical treatment of depression may play an important role in reducing adolescent suicide rates as well.

In conclusion, despite the fact that a large proportion of Quebec adolescent suicide victims has met with a physician during the year before their suicide, the level of recognition and treatment of their mental health problems seems to be alarmingly low. Many factors could be involved but we suggest that information and training programs pertaining to adolescent psychopathology and suicide should be implemented for general practitioners and non-psychiatric medical specialists as well. This, along with other suicide prevention strategies, may contribute to reduce the suicide rate of Quebec adolescents towards the lower levels that are usually found in comparable jurisdictions.

REFERENCES


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RéSUMÉ

Contexte : La maladie mentale constitue le principal facteur de risque du suicide chez les adolescents, mais plusieurs études ont montré qu’une faible proportion seulement de ces victimes de suicide avait reçu des services de santé mentale au cours des mois précédant le suicide. L’objectif de cette étude est de décrire l’utilisation des services médicaux par les adolescents québécois s’étant suicidés, au cours de l’année précédant leur suicide.

Méthode : Tous les cas de suicide de personnes de moins de 19 ans s’étant produits au Québec sur une période de cinq ans ont été extraits des bases de données des coroners. Les données sur l’utilisation des services médicaux par les victimes ont été extraites des bases de données sur le paiement des médecins de la Régie de l’assurance maladie du Québec (RAMQ). Ces données ont été analysées selon le type et l’intensité des services médicaux reçus (physiques ou psychiatriques), le type de dispensateur de soins (omnipraticien, psychiatre ou autre médecin spécialiste) et la chronologie des services a été très basse.

Résultats : Soixante-dix huit p. cent des adolescents québécois s’étant suicidés ont eu recours à des services médicaux au cours de l’année précédant leur suicide. Cependant, seulement 12 % de ces adolescents ont reçu des services pour des problèmes psychiatriques, et seulement 9,9 % ont rencontré un psychiatre au cours de cette période. Les omnipraticiens et les médecins spécialistes non psychiatres ont fourni des services pour des problèmes psychiatriques à respectivement 5,6 % et 0,7 % des futures victimes de suicide qu’ils ont rencontrées en externe, et l’intensité de ces services a été très basse.

Interprétation : Ces résultats donnent à penser que le niveau de reconnaissance et de traitement médical des problèmes de santé mentale chez les adolescents québécois qui vont se suicider est bas, bien qu’une grande partie d’entre eux rencontrent un médecin au cours de l’année précédant le suicide. Ceci suggère que des programmes de formation sur le suicide et la santé mentale des adolescents devraient être offerts aux omnipraticiens et aux médecins spécialistes non psychiatres.