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Attempted suicide in Flanders

2005

Epidemiological research on the incidence of attempted suicide and on characteristics which influence the distribution by means of registration in four Accident & Emergency departments of hospitals in Flanders

Study funded by the Ministry of the Flemish Community, department of Welfare, Community Health, and Family Matters.

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During the previous decades, suicide and attempted suicide are acknowledged to be a major world health and economy problem. In addition to a enormous loss of years of one's life and/or decreased quality of life, the cost of a suicide attempt¹ (on average 6445 euro) was also a persuasive argument to accomplish the sixth Flemish Health Objective concerning the prevention of depression and suicide (to reach a reduction of 8% in suicide numbers in 2010 compared to 2000).

Suicide is the 13th leading cause of death in the world and the 7th in Europe. Annually, there are approximately one million suicides worldwide, which means that every 24 seconds a suicide takes place, and every half second a suicide attempt².

A worldwide comparison revealed that Belgium women hold the 9th position for suicide and men the 14th position, with an incidence of 11.4 and 31.2 of suicides per 100000 inhabitants, respectively. In comparison with the European situation, Belgium holds the 5th position for their female population, and the 11th place for their male population.

The suicide mortality rate in Flanders, the Dutch speaking region of Belgium, is also relatively high in relation to the European numbers. To contribute to the prevention of suicide and attempted suicide in Flanders the Unit for Suicide Research collects information concerning the incidence and the characteristics of suicide attempts.

This report is based on data from the epidemiological research study on attempted suicide in Flanders. This study started in 1998 and is funded by the Ministry of the Flemish Community. By means of standard forms, information is collected on all attempted suicide cases presented to the accident & emergency department of four Flemish hospitals (Gent, Brugge, Genk and Hasselt). Valid and reliable data is obtained through scrutiny of the records; the research team examines the admission registers of the accident & emergency services for comparison of suicide attempt-episodes with attempt-episodes registered to the research team. The following definition of attempted suicide is used:

“An act with a non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage, and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences” (Bille-Brahe et al, 1994)

Method of attempted suicide is classified according to self-injury (hanging, strangulation, drowning, stab wounds and cuts, jumping of an altitude...) and self-poisoning (taking medication, drugs, alcohol, chemicals or other injurious substances).

The current annual report includes information of the attempted suicide patients who were referred to one of the four participating hospitals during 2005. Comparison is usually made with previous years.

The population denominator of the incidence of attempted suicide-episodes is calculated by the population from which the emergency units recruit their patients.

From the patients that have been hospitalised in a certain area, the percentage of patients admitted to the emergency service of our participating hospital is determined.

This percentage is converted into the total number of inhabitants of that region. The incidence is eventually determined by division of the attempted suicide-events (event-based) or the

¹ Brems, M. (2005). Depressie: Psychobiologie en psycho-educatie. De Huisarts, 707, 22-24.

² Bertolote, J. (2005). Suicide Prevention – The WHO's Response. Paper presented at the XXIII World Congress on Suicide and Suicidal Behaviour – IASP.

attempted suicide-patients (person-based) by the population denominator. Afterwards, rates per 100.000 inhabitants are computed.

We would like to acknowledge several persons for their participating involvement: Dr. Stellamans, M. Maes and I. Beernaert of the AZ Brugge; Dr. the Queker, E. De Kleermaker and Dr. Niesten of the AZ Genk; Dr. Zandijk, Dr. De Wit and E. Aerts of VJ Hasselt; and Dr. Buylaert, Dr. Calle, Dr. Heylens and P. Fortain of the UZ Gent. We also would like to thank the National Institute for Statistics Belgium for supplying the population figures and the Ministry of the Flemish Community for the funding of the research.

A part of the data was collected within the framework of the WHO/EURO Multicentre Study or Suicidal Behaviour, in which the Unit for Suicide Research of the University of Ghent cooperates.

Further information can be found on: <http://users.ugent.be/~cvheerin/>

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SUMMARY

- The event based rates for Flanders increased with 11.2% compared to 2004 (176 attempts per 100000 inhabitants). The person based rates increased with 9.3% to 165 persons per 100000 inhabitants.
- There was a change in the gender distribution of attempted suicide presentations in 2005. Female attempted suicide presentations decreased more substantially than male presentations (34.4% and 4.7%, respectively). The male/female gender ratio in 2005 was 1:1.22.
- The person based rates increased for both genders in 45-49 year olds, and decreased slightly in 25-29 year olds. In comparison with the previous years there is a continuing risk from the age of 15 until the age of 49, from the age of 50 a downward tendency is prevalent (in 2004 this tendency occurred after the age of 45, in 2003 even after the age of 40). The percentages for males and females are more parallel then the previous years, except for the age category of 40-44 with male attempted suicide being more common than female suicide attempts.
- There is a higher percentage of immigrants in our patient group in comparison with the general Flemish population (4.9% versus 6.3%, respectively, a difference of +28.6%). The percentage of immigrant attempters (6.3%) equals the number of 2004 (6.2%).
- The largest subgroup of attempted suicide-patients was single (44.4%) at the time of the attempt, and a quarter of the patients was living alone (26.2%).
- The majority of the group was unemployed or inactive, which resembles the findings of 2004.
- The event/person ratio in 2005 was 1.06:1, similar to the previous years. 47.3% of the presented attempted suicide-patients had a history of one or more suicide attempt(s), which is also comparable to previous years.
- The proportion of attempted suicide-episodes involving self-poisoning in 2005 (75.5%) is similar to previous years. In nearly half of the attempted suicides (43.9%) more than one method was used. Males more frequent use multiple methods.
- In 30.2% of the cases, the attempted suicide patient consumed alcohol at the time of the attempt. Men were more frequently intoxicated during the attempt than women.
- Most of the attempted suicide-episodes occurred during the evening (40.7%) and the afternoon hours (28.8%). This is in line with the findings of the previous years.
- Nearly 75% of the patients were hospitalised after their attempt, which is similar to the previous years.

ATTEMPTED SUICIDE IN FLANDERS 2005

Numbers of persons and episodes

The total numbers of attempted suicide-episodes presented to the four hospitals (EB) are shown in Table 1, together with the number of individual persons involved (PB).

Table 1: Number of episodes (EB) and persons (PB), by gender and by hospital in Flanders 2005

Hospital / Area	Men		Women		Total	
	EB	PB	EB	PB	EB	PB
UZ Gent	173	157	190	173	363	330
AZ Sint-Jan / Brugge	54	53	87	84	141	137
AZ Oost-Limburg / Genk	39	38	49	48	88	86
Virga Jesse / Hasselt	26	26	29	29	55	55
Total / Flanders	292	274	355	334	647	608

Rates

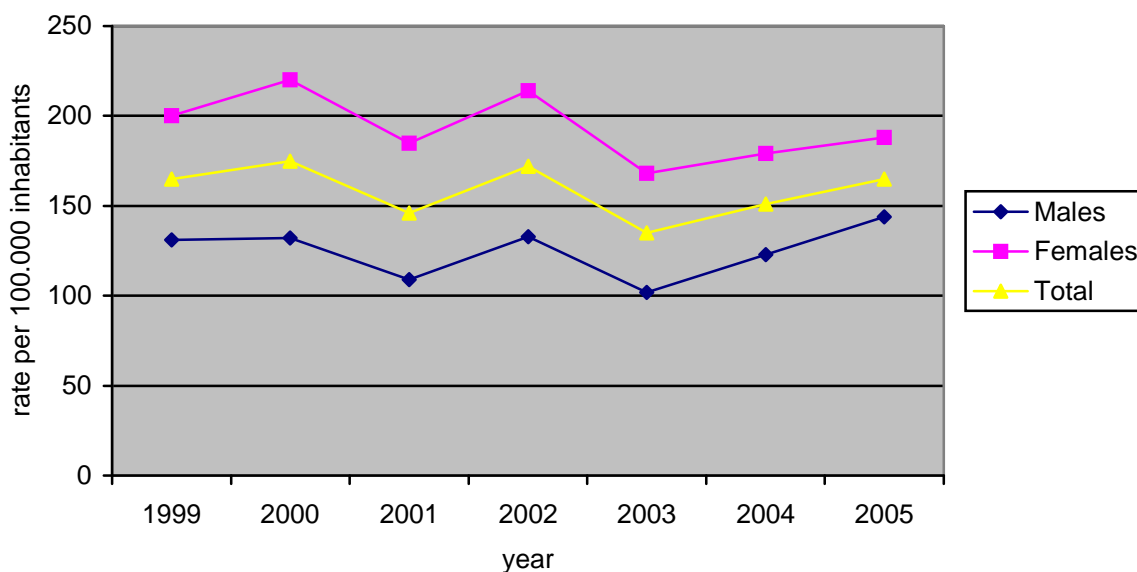
The rates by gender and by hospital are shown in table 2. The event based rates (EB) consists of the total amount of suicide attempts per 100.000 inhabitants, while the person based rates (PB) refer to the amount of persons per 100.000 inhabitants with one or more suicide attempt(s) during one registration year. The male PB and EB rates are much more alike compared to the female PB and EB rates, implying that repetitive suicide attempts occurred more frequently among women than among men in 2005. In the region around Gent we found a higher incidence then in the other hospitals.

Table 2: Summary of rates by gender and hospital in Flanders 2005

Hospital / Area	Men		Women		Total	
	EB	PB	EB	PB	EB	PB
UZ Gent	262/100.000	238/100.000	363/100.000	331/100.000	310/100.000	282/100.000
AZ Sint-Jan / Brugge	188/100.000	185/100.000	254/100.000	246/100.000	221/100.000	214/100.000
AZ Oost-Limburg / Genk	103/100.000	100/100.000	117/100.000	114/100.000	110/100.000	107/100.000
Virga Jesse / Hasselt	72/100.000	72/100.000	108/100.000	108/100.000	90/100.000	90/100.000
Total / Flanders	<u>153/100.000</u>	<u>144/100.000</u>	<u>200/100.000</u>	<u>188/100.000</u>	<u>176/100.000</u>	<u>165/100.000</u>

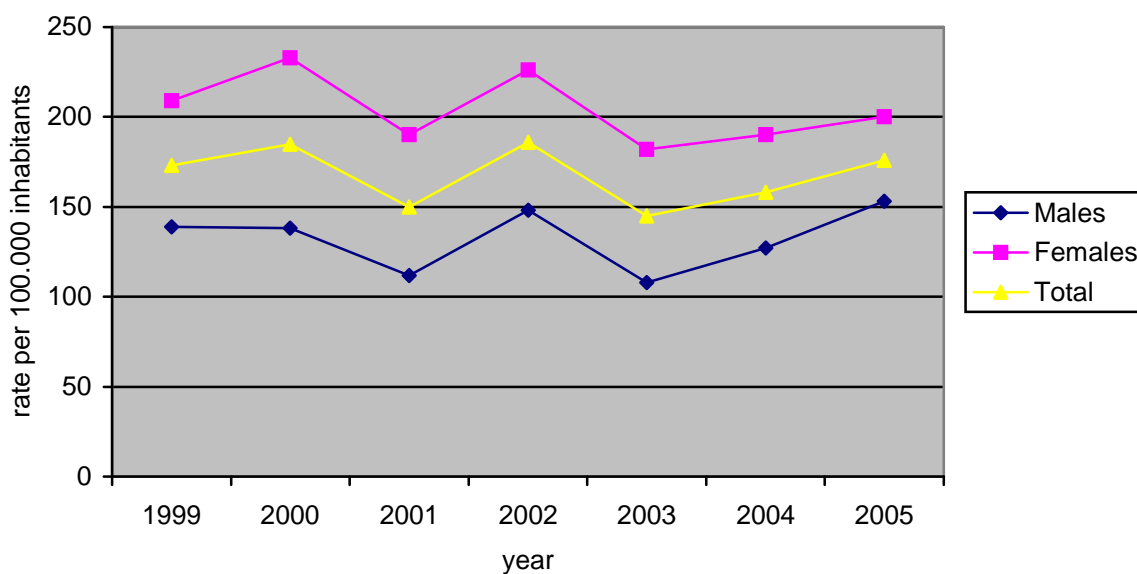
Figure 1 shows that the person based rates in Flanders are rising again compared to the previous two years. During the last seven years the average rate was 158/100.000 inhabitants. The average female rate (M=193/100.000) is higher compared to the average male rate (M=125/100.000).

Figure 1
Evolution of person based suicide attempts in Flanders,
by gender, 1999-2005



As can be seen in figure 2, the evolution of the event based rates is very similar to the evolution of the person based rates. The average EB rate for Flanders during 1999-2005 was 168/100.000. The average female rate of 204/100.000 was considerably higher than the average male rate (M=132/100.000).

Figure 2
Evolution of event based suicide attempts in Flanders,
by gender, 1999-2005



The person based evolution of the attempted suicide rates by accident & emergency departments of the different hospital are shown in figure 3. The most recent rates for Hasselt show a continuing decrease, while an increase was observed in the rates in Gent. This increase of registered attempted suicide-episodes in Gent can be associated with a true increase in attempted suicides in this area, or can be affected by a monitoring effect, i.e. since 2004 an additional quality control is carried out in the Psychiatric Emergency Unit of the hospital. Possibly, this new approach resulted in a more efficient identification of attempted suicide-episodes. A marked decrease was observed for Brugge during the last years, but this could be related to a recent change in the quality control procedure. In general, the attempted suicide rates in the Flemish area show a similar trend.

Figure 3
Evolution of person based rates of suicide attempts in Flanders, by hospital, 1999-2005

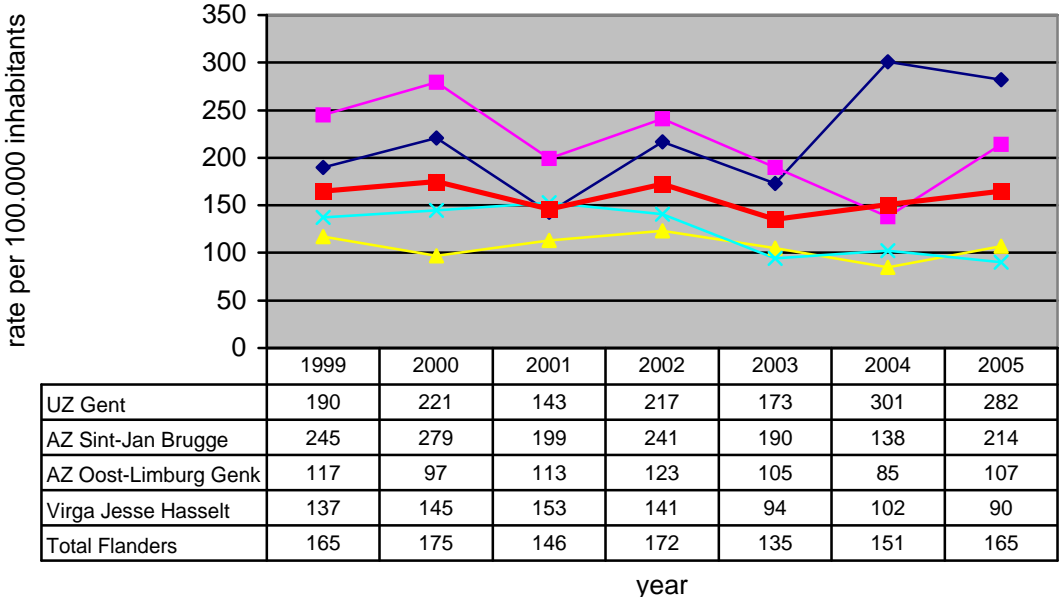
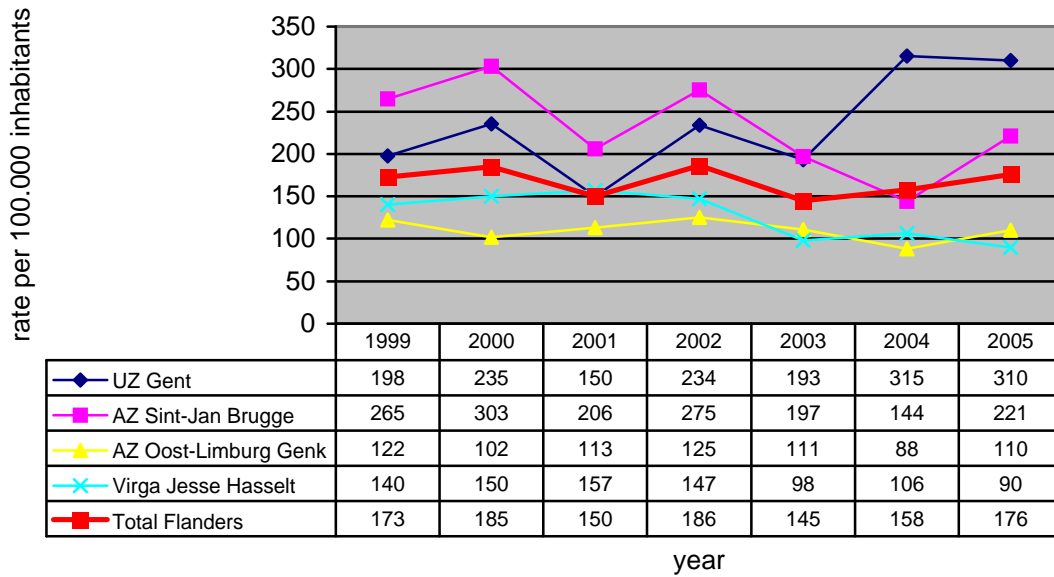


Figure 4 shows the event based evolution from 1999-2005, by hospital. Similar to the person based evolution of suicide attempts, we notice a decrease of registered attempts in the area around Hasselt, an increase in the area around Brugge and Genk, and a stabilisation in the region around Gent.

Figure 4
Evolution of event based rates of suicide attempts in Flanders, by hospital, 1999-2005

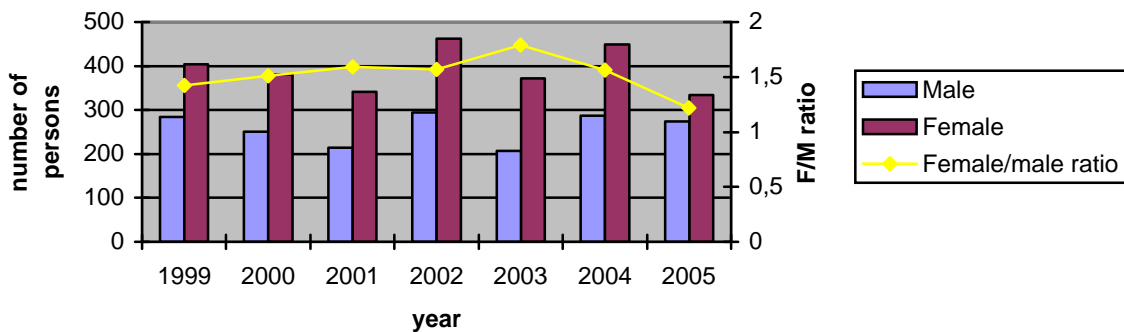


Gender and age

The male/female ratio in 2005 was 1:1.22; 55% of the registered attempted suicide-episodes were made by women (n=334, compared to 274 men). Figure 5 shows the evolution of the gender ratio in Flanders for the period 1999-2005. In accordance to 2004 the difference between female and males continues to converge, due to the substantial drop in female presentations compared to a relatively smaller decline of male presentations.

The next two figures represent absolute numbers and are therefore not immediately comparable with the rates presented earlier.

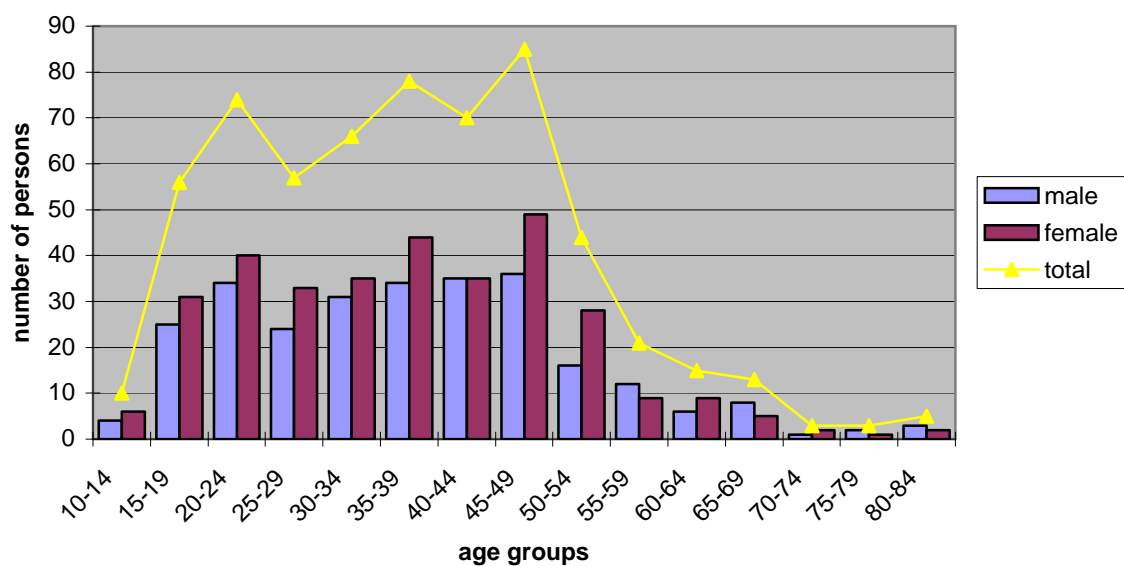
Figure 5
Gender ratio of suicide attempters in Flanders 1999-2005



The age distribution of attempted suicide patients in 2005 was largely similar to that in previous years. The absolute numbers are presented in figure 6. The last years we noticed that, apart from the risk category of youngsters (15-19) and young adults (20-24), the middle aged categories of 30-34, 35-39, 40-44 and 45-49 also form high risk groups. This tendency is confirmed in 2005, and even in the age groups in between these peaks, the former decline is replaced by a continuing high number.

The largest number of female attempted suicide patients was found in the age groups 35-39 and 45-49. The largest number of male patients was found in the age groups 20-24, 40-44, and 45-49.

Figure 6
Age groups of suicide attempters in Flanders, by gender, 2005

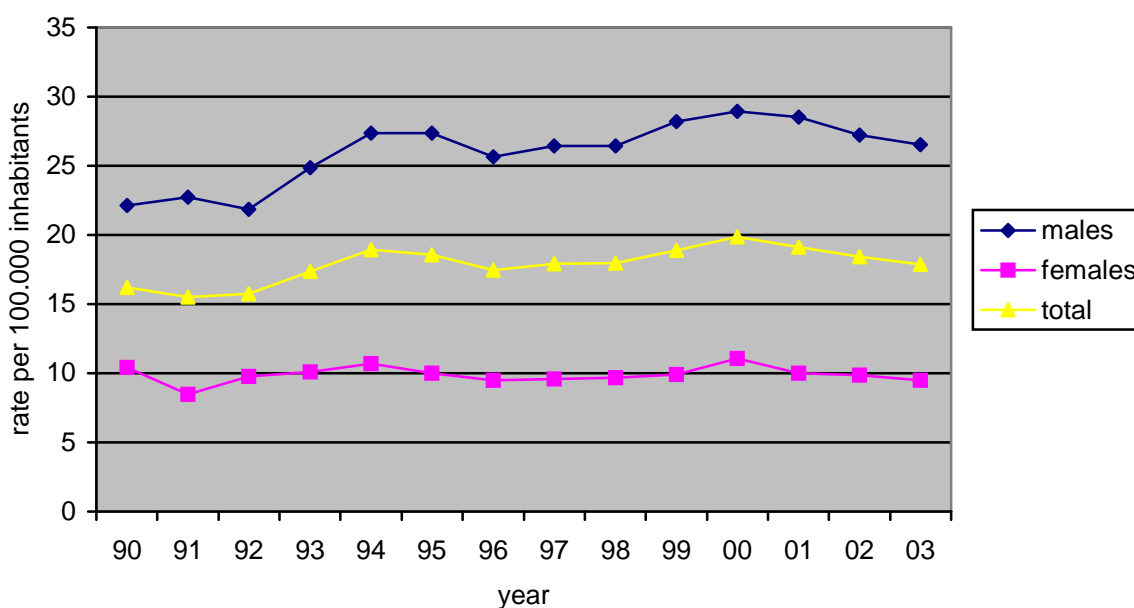


The mean age of attempted suicide patients in Flanders was 37.22 year; i.e 37.59 year in males (min: 10, max.: 83), 36.90 year (min.: 12, max.: 82) in females.

Comparison with suicide rates by gender and age in Flanders

The 2004 and 2005 suicide rates are not yet available. Therefore figure 7 presents the rates until 2003. In males, a noticeable increase is observed in the early 1990s, followed by a stagnation, a high point in 2000 (the highest male rate ever in Flanders), and a decline in 2001, 2002 and 2003. Rates in females remained very stabile, except for a high point in 2000.

Figure 7
Suicide rates in Flanders, by gender, 1990-2003



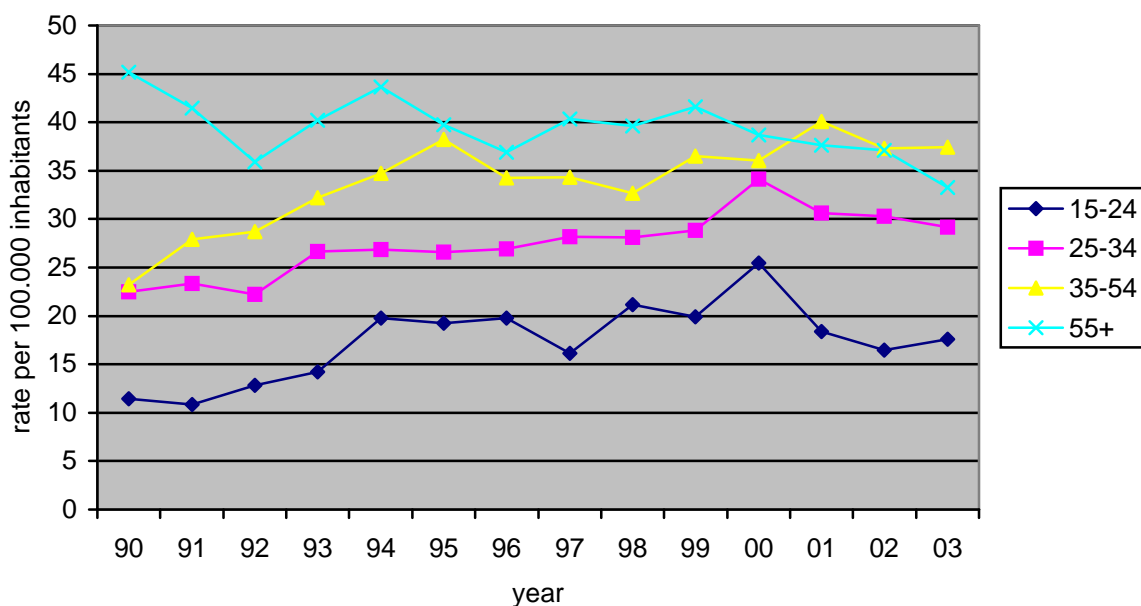
Source: Ministry of Flanders; Administration of Health Care

Figure 8 and 9 show the evolution of the suicide rates in Flanders by four age categories and gender. Apart from the much higher rates for males, the age distribution is very similar for men and women. In both groups, the rates are lowest in the youngest age groups, and highest in the oldest.

In men (figure 8), we noticed an incline of suicide rates for the three youngest age groups from 1992 to 2000, while the rates for the oldest group (+55) remained fairly stabile. In general, the suicide rates for males declined in the last three registration years.

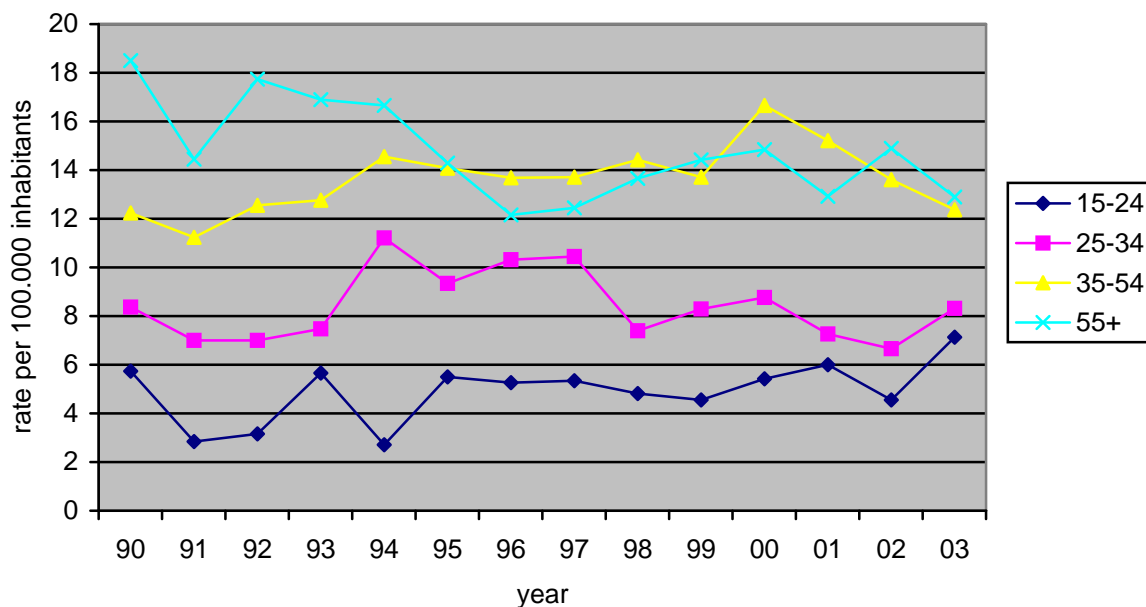
In females (figure 9), the suicide rates slightly increased for the age group 35-54 year in the period 1992-2000, while the rates for +55 in this period slightly decreased. The last three registration years we noticed a decline in the age category 35-54, while the other age groups showed small fluctuations. During 2001 and 2002, the rates decreased in all female age groups, except for +55. In 2003 the highest female suicide rate ever was observed in the age category 15-24 (more then 7 suicides per 100.000 inhabitants).

Figure 8
Suicide rates for males in Flanders, by age groups, 1990-2003



Source: Ministry of Flanders; Administration of Health Care

Figure 9
Suicide rates for females in Flanders, by age groups, 1990-2003



Source: Ministry of Flanders; Administration of Health Care

Ethnicity

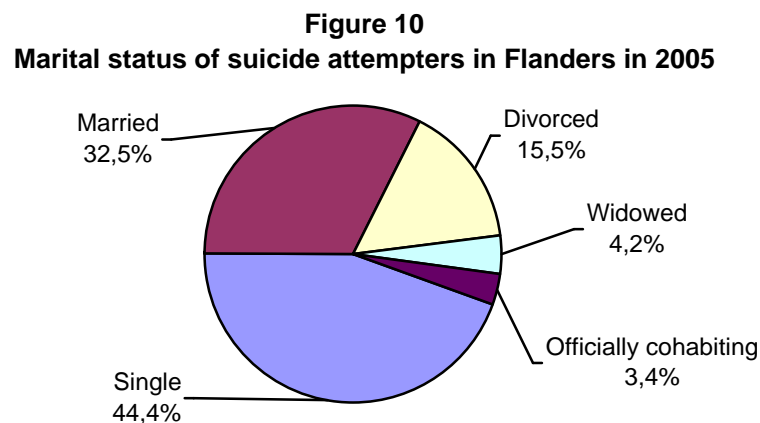
92.5% of attempted suicide patients was born in Belgium and 93.7% had the Belgian nationality. The Netherlands, Turkey, Italy and Morocco were second, third, fourth and fifth in the ranking for both variables (National Institute for Statistics, 2005).

Marital Status

As in the previous years, the most substantial subcategory of attempted suicide patients were single (44.4%). Approximately one third of attempted suicide patients was married (32.5%), and 15.5% was divorced. 4.2% was widowed and 3.4% was officially cohabiting.

Marital status of attempted suicide patients differed significantly between men and women ($\chi^2=15.655$; $df=5$; $p=0.008$). Half of the male attempted suicide patients (50.8%) was never married compared with 39.3% of the females.

In comparison with the general population of Flanders on January, 1, 2005 (NIS), attempted suicide patients were less often married (32.5% compared to 43.9%) and more often divorced. (15.5% compared to 7.2%).



Living situation

More than a quarter of the attempted suicide patients lived alone at the time of the suicide attempt (26.2%). 19.3% lived together with a partner of the opposite sex and children, 18.9% lived with his/her parents, and 15.6% lived with a partner of the opposite sex without children (figure 11).

A significant difference was found between men and women ($\chi^2=23.154$; $df=9$; $p=0.006$). A larger proportion of males compared with females were living alone, or in a residential institution at the time of the attempt. Women were more often living alone with their children, or living with a partner of the opposite sex with or without children.

The structure of households of attempted suicide patients is different from the structure of households from the general population of the Flemish district (NIS, 2005) (figure 12). In the group of attempted suicide patients, more single men and women are noticed, and less married couples, with and without children, are represented.

Figure 11
Living situation at time of the suicide attempt in Flanders, by gender, 2005

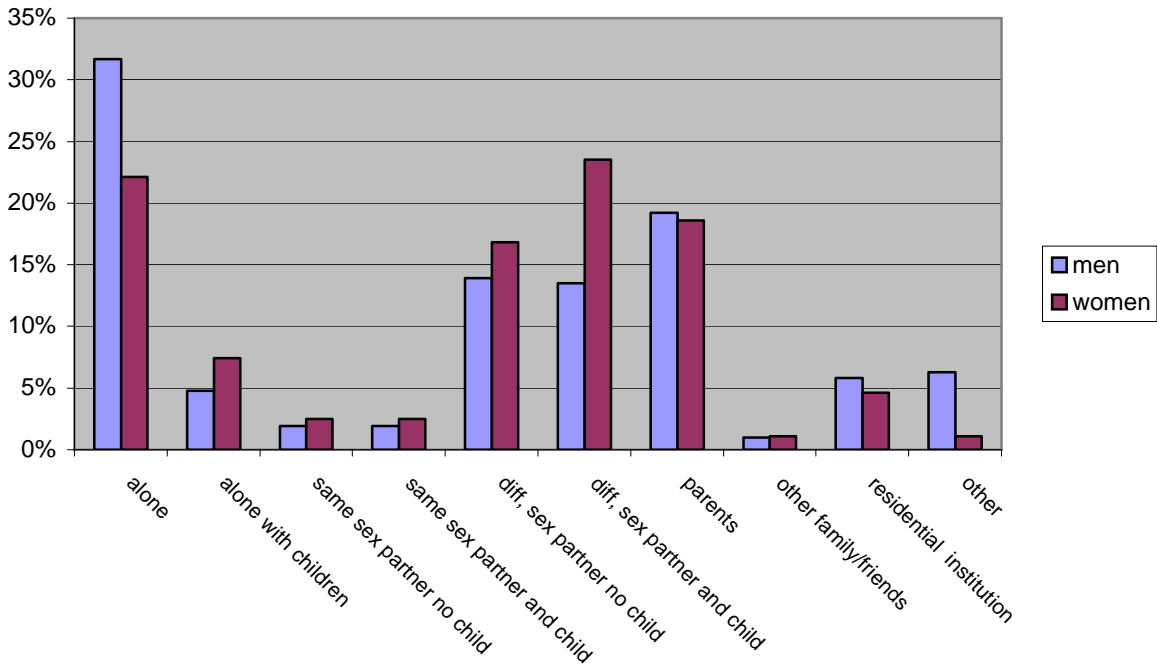
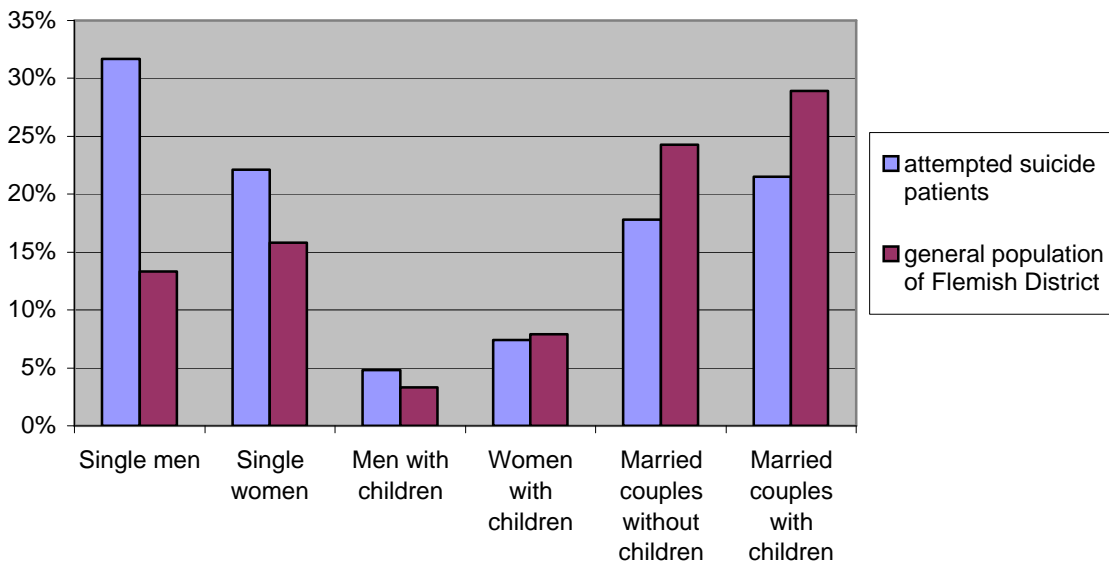


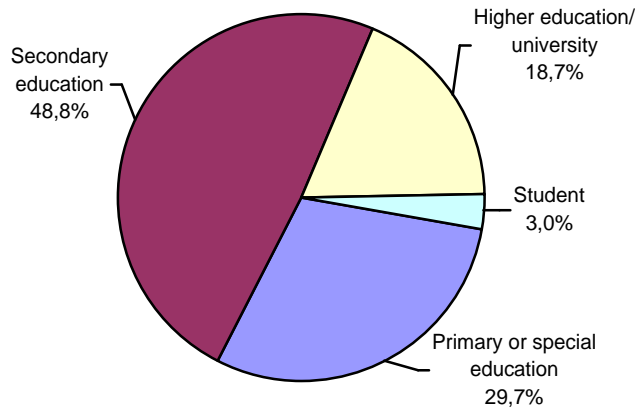
Figure 12
Marital status of attempted suicide patients compared to the general population of Flanders 2005



Education

Almost half of the attempted suicide patients only graduated from secondary school (48.8%). 29.7% only finished primary or special education and 18.5% finished higher education or university. No significant differences were found between males and females ($\chi^2=1.976$; $df=3$; $p=0.577$).

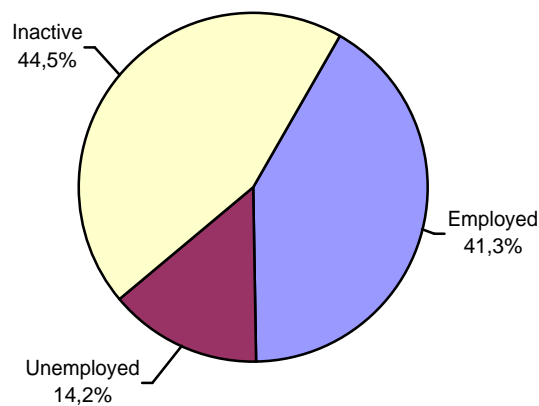
Figure 13
Level of education of DSH patients in Flanders 2005



Employment status

In 2005, 44.5% of the attempted suicide patients were economically inactive (retired, student, disabled, housewife...) (figure 14). Of those patients 63.6% was aged between 18 and 64. More than a quarter of the inactive group was still studying (26.3%) and 10.1% was retired. 41.3% of the attempted suicide patients was employed and 14.2% was unemployed. Of those persons for whom the duration of unemployment was known, 45.2% had been unemployed for more than one year. No gender differences could be found ($\chi^2=4.357$; $df=2$; $p=0.113$).

Figure 14
Employment status of attempted suicide patients in 2005

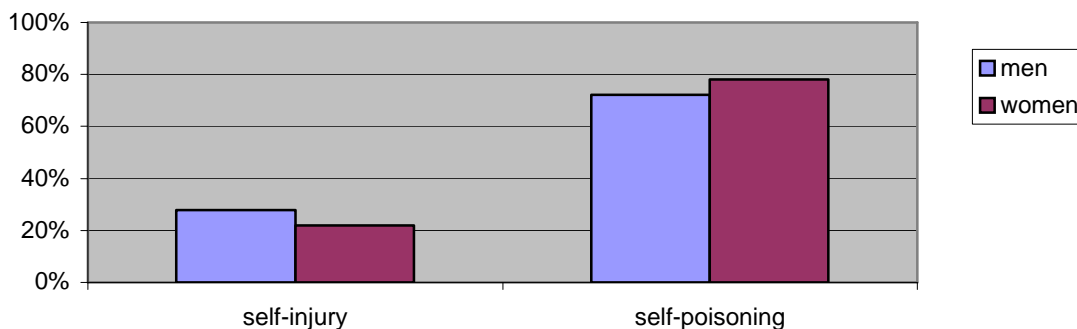


Method

In 2005, 75.5% of attempted suicide-episodes involved self-poisoning, 16.3% self-injury and 8.2% both methods. These figures are similar to previous years.

Self-injury (with or without self-poisoning) was more frequent in males than in females (27.8% compared to 21.8%), while self-poisoning was more common among females than males (78.2% compared to 72.2%), although this difference was not significant ($\chi^2=3.196$; $df=1$; $p=0.074$).

Figure 15
Method of attempted suicide in Flanders, by gender, 2005



Almost half of the attempters (43.9%) used more than one method. With 82.0% using two methods, 14.1% three methods and 3.9% four. A significant gender difference showed that males more commonly use multiple methods than females ($\chi^2=8.535$; $df=1$; $p=0.003$).

The proportion of self-poisoning involving barbiturates, other sedatives, hypnotics and other psychotropic agents is high (60.9%). There was no significant difference between men and women in the use of these substances ($\chi^2=0.741$; $df=1$; $p=0.389$). 12.2% used non-narcotic analgesics, antipyretics and antirheumatics, involving more women than men ($\chi^2=3.402$; $df=1$; $p=0.065$).

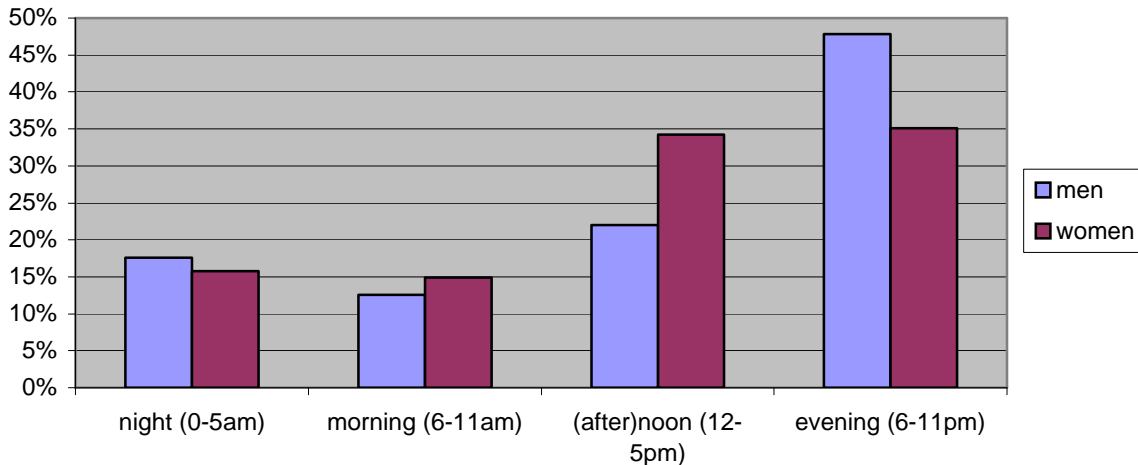
In 30.2% of the cases, the attempted suicide patient consumed alcohol at the time of the attempt, which was more prevalent in men than women ($\chi^2=11.902$; $df=1$; $p=0.001$). Self-poisoning by opiates, related narcotics and psychodysleptics; or by other drugs acting on the central and autonomic nervous systems; or by other drugs and medicaments were infrequent. Self-poisoning by petroleum products, other solvents and their vapours; by other gases and vapours; by pesticides, herbicides, and other toxic agricultural chemicals; or by other chemicals and noxious substances were even more infrequent. Gender analyses were not conducted because of the low numbers in each category.

Regarding self-injury, self-harm by sharp (or blunt) objects was the most common used method (36.1%). No significant gender differences were found ($\chi^2=0.006$; $df=1$; $p=0.937$). 23.4% of self-injuries involved hanging, strangulation or suffocation. Men used this method significantly more than women (39.3% and 16.1%, respectively) ($\chi^2=7.990$; $df=1$; $p=0.005$). 15.8% jumped from a high place, 8.9% injured themselves by drowning and 7.6% got injured by a motor vehicle accident, and 5.7% got injured by jumping of laying in front of a moving vehicle. Because of the low numbers in these last categories, no gender analyses were executed.

Time of attempted suicide

Four out of ten (40.7%) attempted suicide-episodes occurred during the evening, 28.8% during the (after)noon, 16.6% during the night, and 13.9% during the morning. Significantly more male attempted suicides were recorded during the evening and the night, and significantly more females attempted suicide during the afternoon and the morning ($\chi^2=8.552$; $df=3$; $p=0.036$).

Time of attempted suicide in Flanders, by gender, 2005

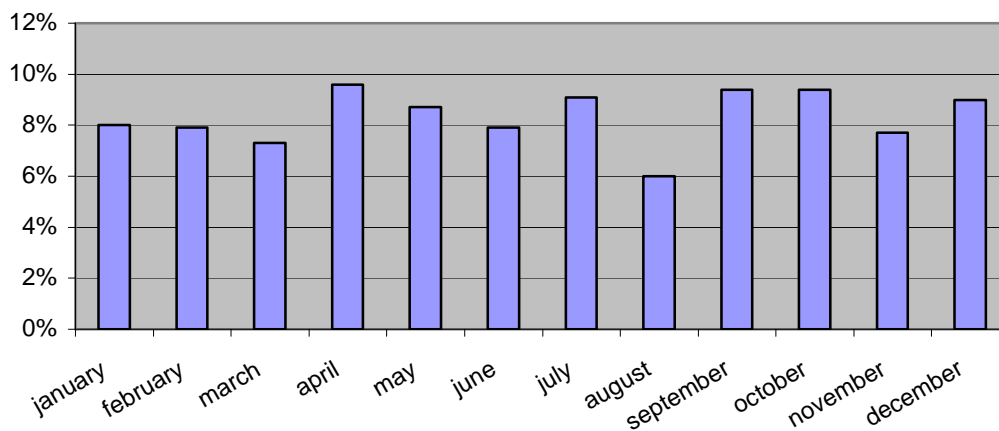


Remark

An attempted suicide-episode during the first half an hour (1-30 minutes) was assigned to the previous hour, an attempted suicide-episode during the last thirty minutes (31-59 minutes), was assigned to the next hour.

There was a higher incidence of attempted suicide in April, September and October (figure 17). During March and August less attempted suicide-episodes were registered. No significant gender differences were found ($\chi^2=6.631$; $df=11$; $p=0.828$).

Figure 17
Month of attempted suicide in Flanders, 2005



Referral

Almost three out of four (73.3%) patients were hospitalized after their attempt. 2.4% were referred to an out-patient treatment in the institution of presentation, 15.3% was referred to out-patient treatment elsewhere, and 9.0% of the attempters was not referred at all.

History of suicidal behaviour

The repetition rate of 2005 is reflected by the ratio of the total events and the number of persons with an episode of attempted suicide. For men, the ratio was 1.07:1 and for women 1.06:1. The total ratio was 1.06, which is similar to previous years (figure 18).

Only half of the attempted suicide patients had no history of suicidal behaviour (52.7%). 27.3% of the assessed patients had attempted for the second time. 9.2% of the assessed persons had a history of two episodes of attempted suicide, 4.0% had a history of three previous episodes, and 6.8% had a history of four or more episodes.

No significant gender differences were found for history of suicidal behaviour ($\chi^2=3.058$; $df=4$; $p=0.548$).

In 85.9% of the repeaters, the previous attempt received medical attention.

Figure 18
Event/Person ratio in Flanders, by gender, 1999-2005

