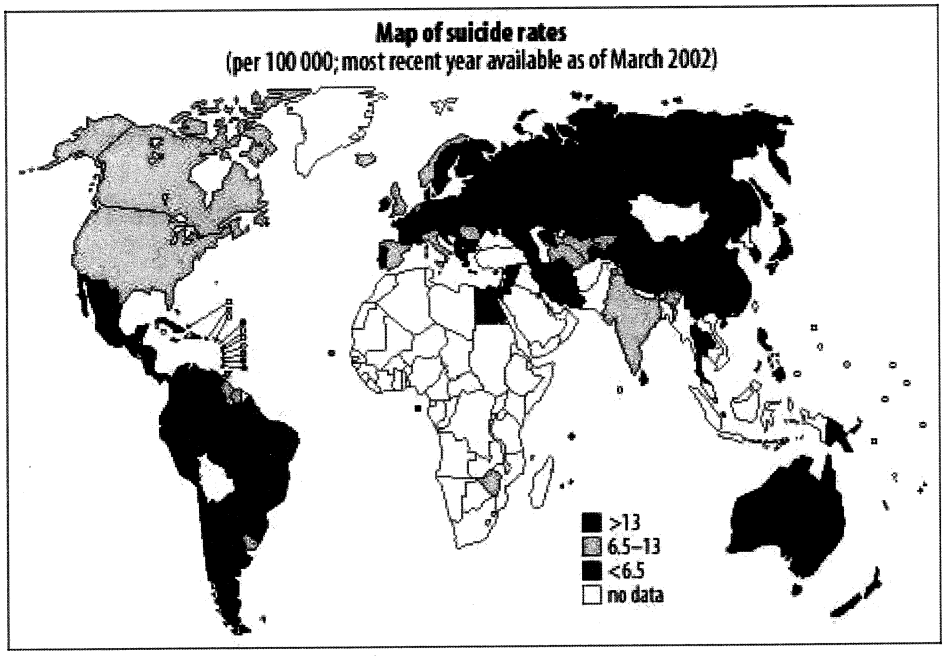
The epidemiology of suicides –

differences between Norway and the EU.



Erik Eriksen

3rd Faculty of Medicine, Charles University, Prague, 2006.

Table of contents **page**

Summary

Europe sees 70,000 suicides every year. Rates in Northern EU countries are higher than those in most Mediterranean countries. The male suicide rate is usually two to three times that of the female rate, which is the reverse of parasuicide. Epidemiological analyses show that most countries reported a significant downward trend in suicide mortality although in many countries there has been an increase in suicides among young people. The overall highest suicide rates are among elderly males. The suicide rates in Norway are comparable to its neighboring countries, but Norway has seen an alarming increase in suicides among the young, male population. This rate is significantly higher than in Denmark and Sweden.

It has been shown in many studies that the main risk factors for suicide are being mentally ill, being a substance abuser and being male and divorced and living alone. Newer studies suggest higher rates among homosexuals and among intercountry adoptees.

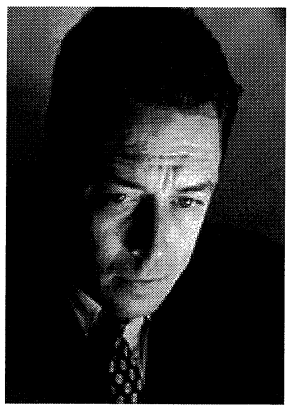
Comparing suicide data from different countries poses many problems; there are differences in recording, coding and classification systems employed across the EU. There may also be underreporting of suicides in some countries.

Many of the persons who commit suicide see their GP in the time before their suicide, and much of the responsibility in identifying suicidal thoughts and providing health care lies in the hands of the primary care.

Under half of the European countries have national preventive programmes, but the comprehensiveness and coordination of national suicide prevention activities vary considerably between the countries.

Introduction

"There is but one truly serious philosophical problem, and that is suicide. Judging whether life is or is not worth living amounts to answering the fundamental question of philosophy. All the rest – whether or not the world has three dimensions, whether the mind has nine or twelve categories – comes afterwards. These are games; one must first answer [the questions of suicide]."



-from "The myth of Sisyphus" by Albert Camus.

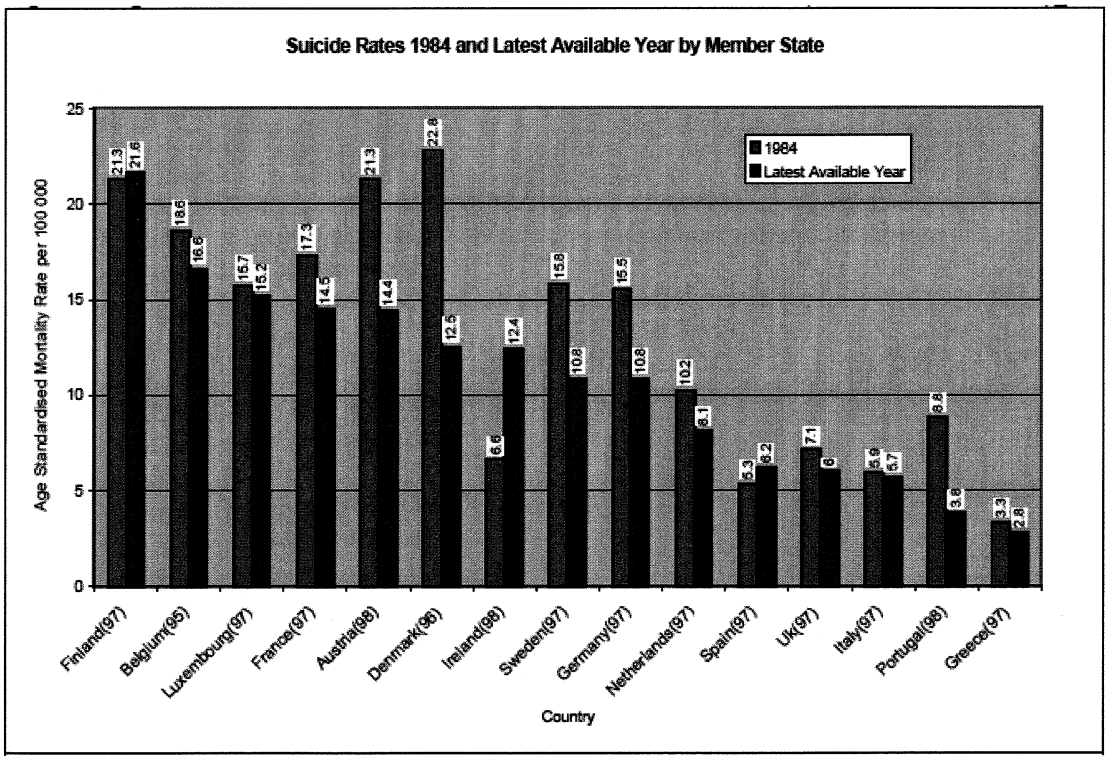
Suicide is a serious public health problem that is causing increasing concern throughout the world and particularly in the European Union (EU). Suicide is one of the leading causes of injury worldwide, with an estimated 10-20 million attempted suicides and 1 million completed suicides every year. Europe alone sees 700,000 suicide attempts per year and 45,000 completed suicides. The rate is highest in the Eastern Europe states **(2)**. Norway has a total rate of suicides similar to its neighboring countries, but has an alarming high rate of suicides among young people.

Review of current knowledge

The EUROSAVE (European review of suicide and violence epidemiology) project finished in Feb. 2002 was funded as a part of the Injury Prevention Programme of the European Union. It collected data from European countries from 1984 until the latest year

available (95-98). In the study period there was a total of 658,175 recorded suicides in the EU, of these 71% were males. Finland had the highest number of suicides from the last available year – 1998, with a yearly suicide rate of 21, 6 per 100 000. Greece had the lowest rate with 2, 8 per 100 000 in 1997. Significant downward trends were in the period seen in Austria, Denmark, France, Germany, Greece, Netherlands, Portugal, Sweden and UK, while upward trends were seen in Ireland (89%) and Spain (17%) **(2)**.

Figure 1: Age Standardised Suicide Rates per 100 000 populatiom for the EU – Males & Females (1984 and Latest Year)

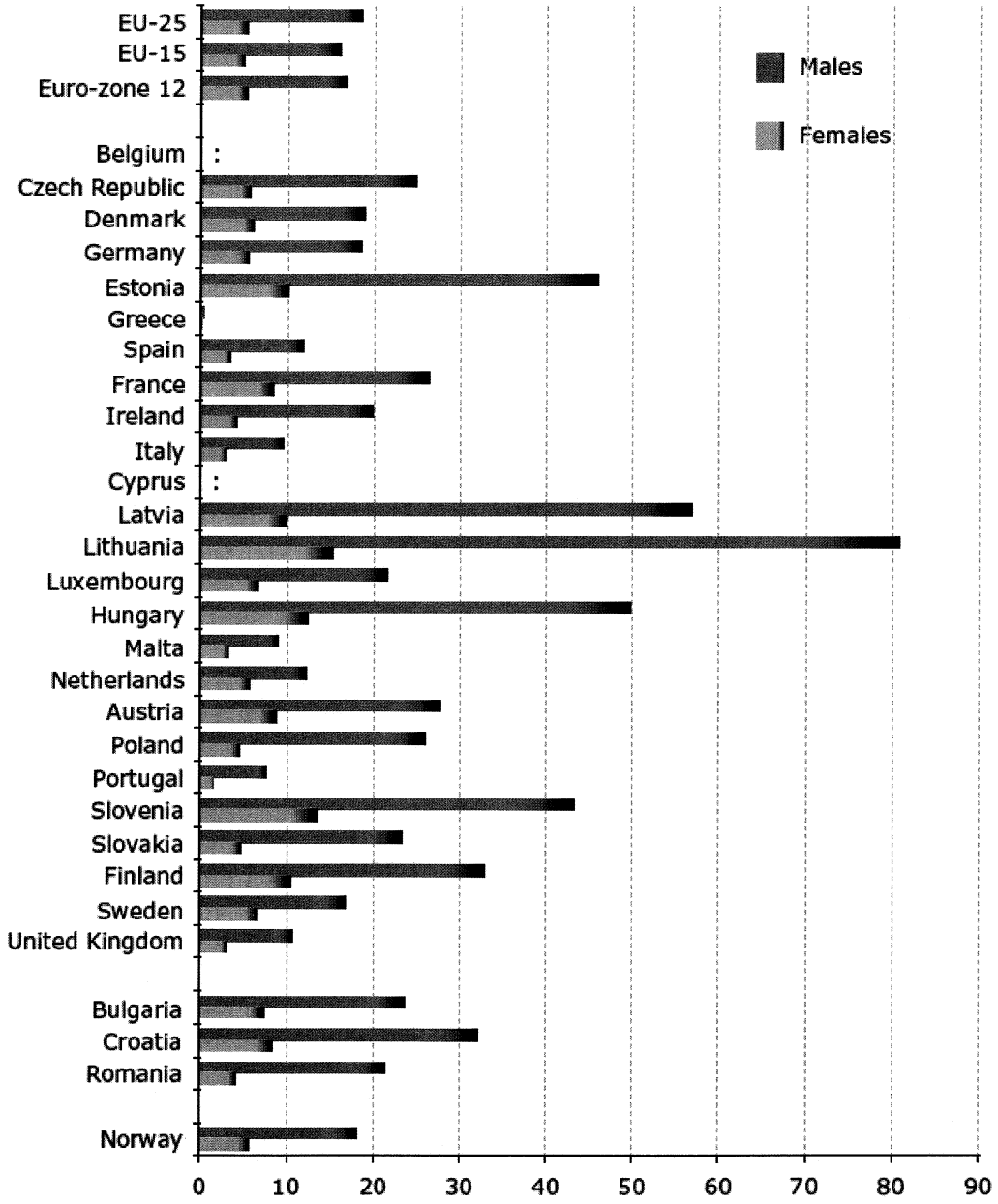


Source: The EUROSAVE project (2)

After the admission of ten new EU member states in 2004, the statistics for EU changed quite dramatically. The suicide rates in the eastern European and former socialist regimes are all higher than the EU average. The Baltic States have the highest suicide rates, with

Lithuania having markedly higher rates than the other Baltic countries, making it the EU country with the by-far highest number of deaths caused by suicides. Hungary is also among the countries with the highest rates.

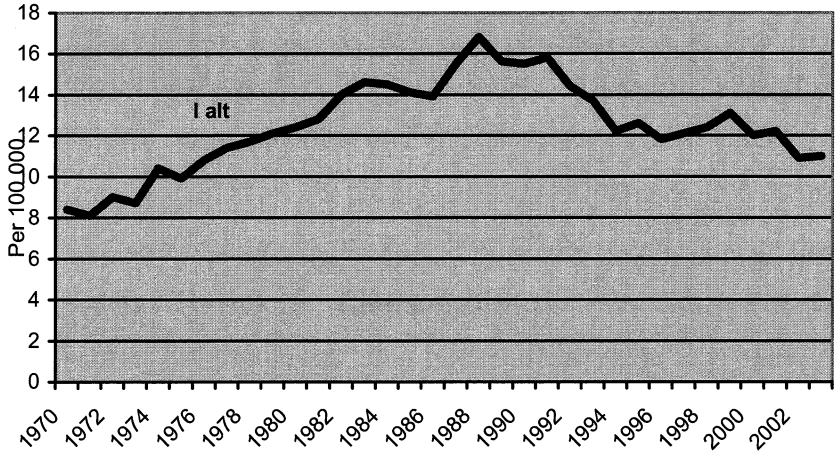
Fig. 2 Death by suicide in 2000. Per 100 000 persons (13)



Source: Eurostat

In Norway the suicide rate was relatively stable in the post world war II years, approximately 7-8 per 100 000 persons. From the late 1960's the rate started to increase. 1988 was the year with the peak number of registered suicides, corresponding to a rate of 16,8 per 100 000. From 1988 to 1997 the rate declined with 30 % **(10)**. Norway saw after this a stable rate, although the use of antidepressant has increased. Norway has currently approximately the same suicide rate as fellow Scandinavians Denmark, but above Sweden. Finland has almost twice the suicide rate compared with Norway. The decline in suicide rates from the late eighties has been slower in Norway than both Denmark and Sweden. There are considerable differences in the age distribution of suicides as discussed below.

Fig. 3: Suicides in Norway, per 100 000 population



Source: The Norwegian cause of death register

Age distribution:

The EUROSAVE project found that although a decrease in suicide rates has been reported from most EU countries, rates in young adults (15-24 year olds) have been on the increase for almost half the EU countries.

Although a decline was observed in suicide rates in the older age groups, suicide mortality was highest in the 65-year olds and over throughout the study period.

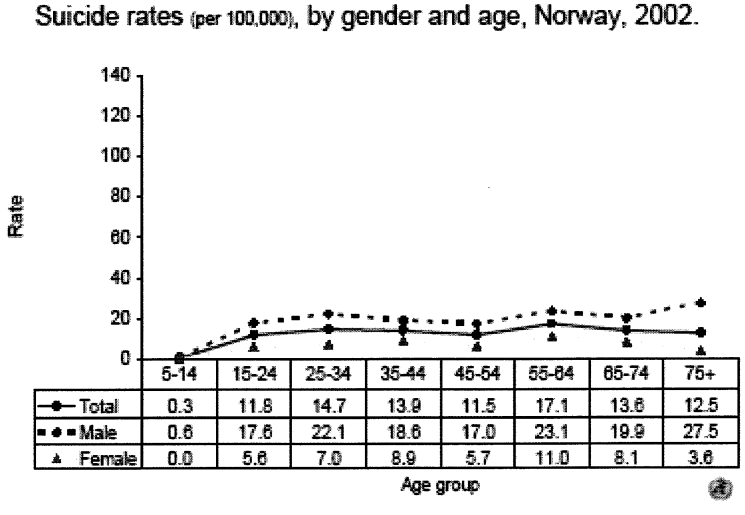
Table 1:Crude and age standardized suicide rates for the latest available year in the EU

COUNTRY	5-14 years	15-24 years	25-44 years	45-64 years	65+ years
Austria (1998)	0.85	12.7	17.9	26.2	35.5
Belgium (1995)	1.07	14.1	24.8	27.9	31.7
Denmark (1996)	0.17	7.9	17.1	24.9	28.3
Finland (1997)	0.46	23.4	34.6	36.1	23.6
France (1997)	0.30	8.8	21.3	27.4	31.7
Germany (1997)	0.39	8.2	14.5	20.0	25.3
Greece (1997)	0.17	3.3	4.2	4.1	5.1
Ireland (1998)	0.34	19.1	20.3	16.3	10.7
Italy (1997)	0.19	5.2	7.3	9.5	15.8
Luxembourg (1997)	0	16.7	23.1	25.3	22.5
Netherlands (1997)	0.58	7.9	12.5	12.4	14.2
Portugal (1998)	0.09	2.3	4.5	6.4	15
Spain (1997)	0.32	5.2	8.2	10.3	17.3
Sweden (1997)	0.53	9.2	16.0	19.5	17.8
UK (1997)	0.09	6.8	10.2	8.6	7.2
MEAN	**0.37**	**10.1**	**15.8**	**18.3**	**20.1**

Source: The EUROSAVE project

If we compare the data above from the EUROSAVE project with data from Norway from 2002, we can see that the rate in Norway for persons aged 15-24 is higher than the EU average and also higher than Sweden and Denmark. On the other hand Norway sees fewer suicides in the age group from 25-44 compared with the above mentioned countries. The suicide rate among the elderly is even lower, compared with other Nordic countries **(14)**, although it has been increasing the last years.

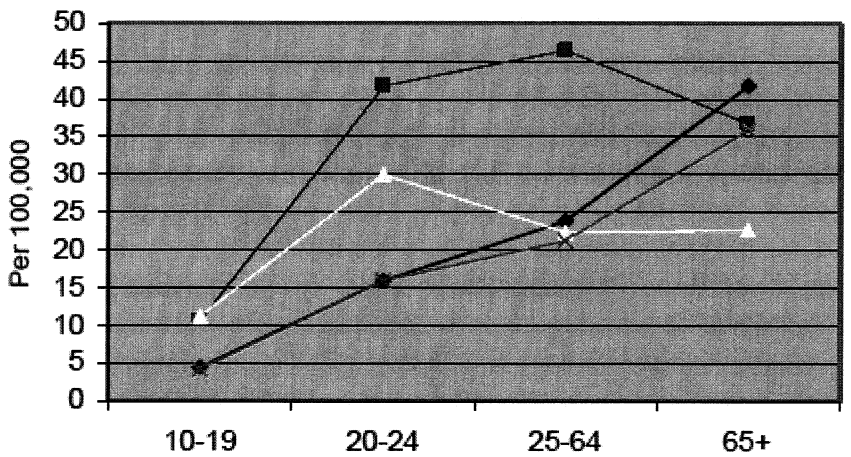
Figure 4.:



Source: WHO

The number of suicides in Norway among young people aged 10-24 more than doubled from 1972 until 1992, from 5 to 12 per 100 000 **(16).** The overall mortality rate decreased in the same period, making suicides a much larger part of total deaths in this age group (from 7% to 26%) **(16)**. Presently there is a big difference in suicides rates among the young population in Norway compared with the other Nordic countries. This is mainly among the male population (See fig 5).

Fig 5: Suicides among different age groups of the male population in the Nordic countries in 2000. Per 100,000 mean population. Norway=yellow, Finland=purple, Denmark=dark blue, Sweden=light blue.



Source: Nordic Medico Statistical Committee. Health Statistics in the Nordic Countries

Gender distribution:

In all European countries males commit suicide more often than women, with ratios ranging from 2,1-6,1 to 1 in the "old" EU. Most countries have a ratio around 3:1. The parasuicide rate is generally 2-3 times higher in women than in men (**2**).

The EUROSAVE study showed that a decline in male suicide rates was observed for 10 of the 15 EU countries while 13 countries reported a decline in female rates over the study period. Finland had the highest and Greece had the lowest suicide rates for both sexes for the latest available year.

Significant downward linear trends in male mortality were observed for Austria, Denmark, France, Germany, Netherlands, Portugal and Sweden. Significant upward linear trends in male mortality were observed in Ireland and Spain, while no significant trends were observed for Belgium, Finland, Greece, Italy, Luxembourg and the UK. Most countries exhibited a significant downward linear trend in female mortality apart from Finland, Ireland, Luxembourg and Spain, which all reported non-significant upward linear trends in female mortality rates **(2)**. See table 2 for male: female ratios for age standardized suicide rates.

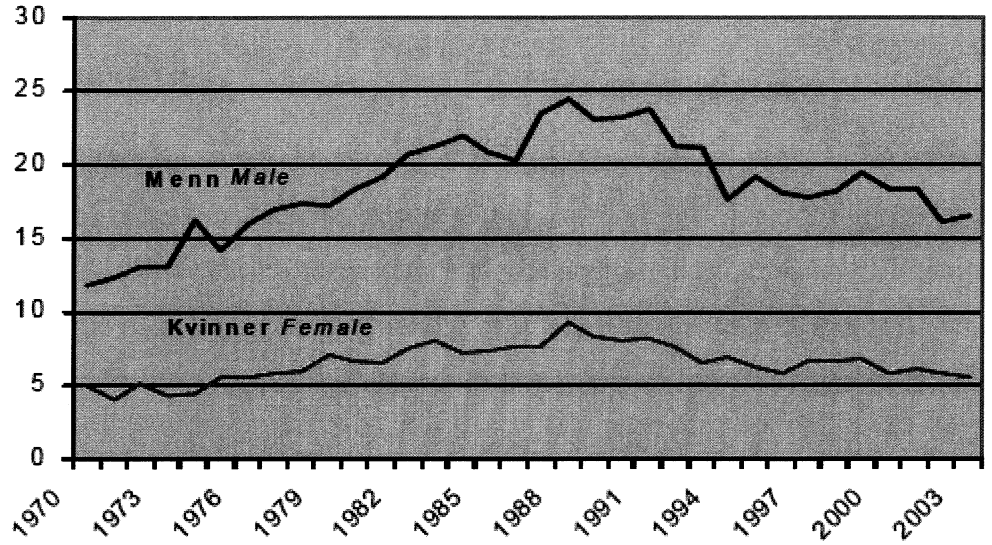
Of the "new" EU member states Lithuania, Latvia, Estonia and Hungary all have higher suicide rates than Finland, the country with the highest rate in the "old" EU. This applies to both genders. Norway has as earlier discussed a relatively high suicide rate among young males (see fig. 5), but concomitantly a relatively low rate among elderly males, making the male: female ratio similar to European countries (see fig 6).

Table 2: Male to Female Ratios for the Age Standardized Suicide Rates in EU countries

Country	Male:Female Ratio 1984	Male:Female Ratio Latest Available Year
Austria	3.2:1	3.6:1
Belgium	2.3:1	2.8:1
Denmark	1.9:1	2.7:1
Finland	4.4:1	3.9:1
France	2.8:1	2.9:1
Germany	2.5:1	3.2:1
Greece	2.7:1	6.9:1
Ireland	2.3:1	5.4:1
Italy	2.7:1	3.5:1
Luxembourg	2.2:1	3.0:1
Netherlands	1.6:1	2.1:1
Portugal	2.5:1	3.7:1
Spain	3.4:1	3.4:1
Sweden	2.3:1	2.4:1
UK	2.3:1	3.6:1

Source:The EUROSAVE project

Fig 6: Suicides in Norway from 1970-2003 according to gender. Rates per 100,000 mean population.



Source: Nordic Medico Statistical Committee. Health Statistics in the Nordic Countries

Risk factors and protective factors:

Several studies show that population subgroups with increased risk of committing suicide are **(2, 3, 4, 6, 8)**:

- Older males
- Individuals who are separated, divorced or widowed
- The unemployed
- Individuals with a history of poor health in general and mental illness in particular
- Substance abusers

If we look at mental illness, these are the psychiatric factors most commonly associated with suicide **(23)**:

- major depression
- other mood [affective] disorders, such as bipolar disorder (a condition characterized by periods of depression, alternating with periods of elevated mood, or mania, and in which the changed states can last for days or even months)

- schizophrenia
- anxiety and disorders of conduct and personality
- impulsivity
- a sense of hopelessness

Of the risk factors examined in a study from Denmark **(3)** a history of hospitalization for a psychiatric disorder was associated with the highest odds ratio and the highest attributable risk for suicide. Cohabiting or single marital status, unemployment, low income, retirement, disability, sickness-related absence from work, and a family history of suicide and/or psychiatric disorders were also significant risk factors for suicide.

Difference between genders:

Moreover, and more interestingly, these above mentioned factors had different effects in male and female subjects. A psychiatric disorder was more likely to increase suicide risk in female than in male subjects. Being single was associated with higher suicide risk in male subjects, and having a young child with lower suicide risk in female subjects. Unemployment and low income had stronger effects on suicide in male subjects. Living in an urban area was associated with higher suicide risk in female subjects and a lower risk in male subjects. A family history of suicide raised suicide risk slightly more in female than in male subjects **(3)**.

The elderly:

Depressive illness is thought to be the most important predictor of suicide among the elderly, and social isolation has also been highlighted as an important contributor **(2)**. A Norwegian study of suicides among the elderly showed that in a majority of the cases the deceased had suffered from psychiatric disease (62%), mostly depression (41%) **(14)**. Somatic disease was less often a prominent factor (22%). A majority had an established contact with the health services at the time of suicide. Suicidal thoughts had been expressed by 29 %; previous suicide attempts had been reported by 15 % **(14)**.

The young:

Suicidal young people are different from other young people in many aspects, both socioeconomic and psychosocial. They seek less support in their friends and parents, have an earlier time of first sexual intercourse, smoke more cigarettes and use more illicit drugs, and often have divorced parents and few siblings compared with the mean population of young people. They report low self-esteem, loneliness and more depressive feelings **(17)**. A Norwegian study showed that almost half of young people who attempted suicide saw a general practitioner within the preceding 6 weeks of their suicide attempt **(17)**. This puts the responsibility on the general practitioner and other clinicians on identifying important psychosocial liabilities and psychopathological factors in their young patients. This should be an important part of suicide prevention.

However, since few patients discuss their suicidal ideation with their GP, there is room for improvement. GPs should take the lead to make this subject debatable. It may improve early recognition of depressed patients at risk and accelerate their referral to mental health professionals **(17, 19)**.

The rates of attempted suicide and suicide in the 15-24 age groups tend to correlate with each other across countries. The correlations are much stronger in male than in female subjects **(6)**. The increase in suicides and suicide attempts among young people needs to be addressed, and is one the great challenges in suicidology.

Sexual orientation:

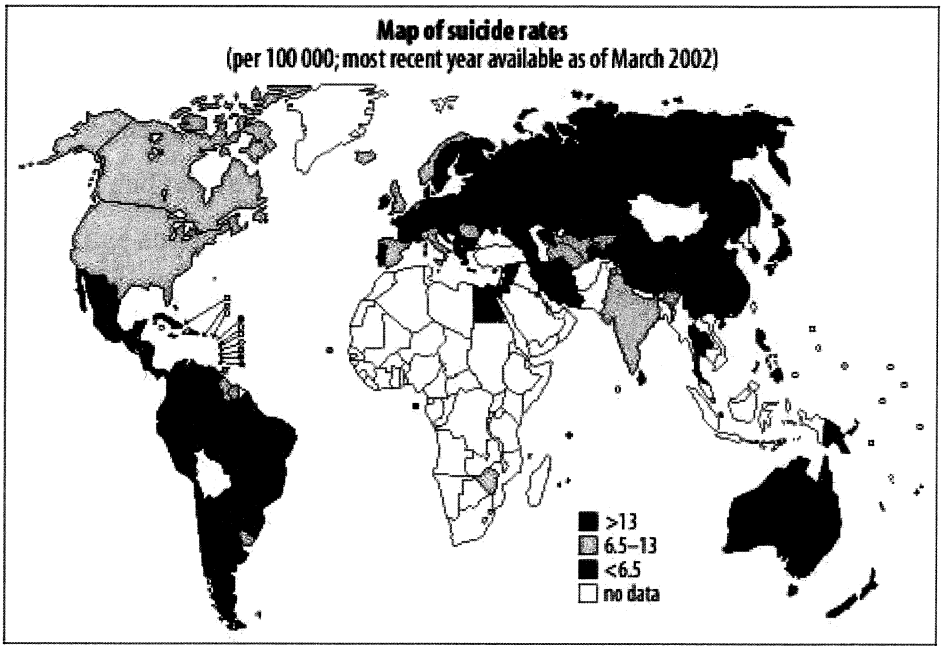
Kristin Hegna from Norway found in a study of homosexuality and risk of suicide and suicide attempts **(11)** that life prevalence of attempted suicide among gays, lesbians and bisexuals (GLBs) range from 20.5 % to 35.3 %. This indicates that the risk of suicide attempts among GLBs is two to six times higher than among heterosexuals. The studies also document higher levels of general risk factors for suicide attempts among GLBs **(11).**

Religious, cultural and ethnic factors:

Generally, to have a religious belief is believed to a protective factor against suicide **(22).**

In a global perspective, religious and cultural factors have a strong impact on the suicide rates **(18)**. If we compare suicides among people with different religious orientations worldwide, we see large differences **(18)**. Suicides among atheists are more than twice as common as among Christians. Buddhists commit suicide more often than Christians and Hindus more rarely. Moslem countries have very low suicide rates. This can be seen from fig. 7 which shows worldwide suicide rates.

Fig. 7.



Source: WHO

This knowledge can be applied in the study of suicides among immigrants to Europe. Norway has a quite large minority of non-western immigrants; the biggest being the Pakistani community. Several Swedish studies have addressed the issue suicide among immigrants.

One study demonstrates that second-generation immigrants have a higher relative risk of suicide death compared to the first generation and should be of particular concern for prevention.

Culture-specific determinants of suicide death are carried over from the first- to the second-generation immigrants **(21)**. The Finnish minority had the highest and the Middle Easterners the lowest odds for suicide death in both generations of immigrants.

Belonging to the same ethnic group seems to be associated with similar suicide rates, as in the interesting example of Estonia, Finland and Hungary, all of which have very high rates, even though Hungary is geographically quite distant from Estonia and Finland. Conversely, different ethnic groups – even if they live in the same place – may have very dissimilar rates of suicide **(23)**.

The intercountry adoptees have very high odds for suicide death. This difference among adoptees and native population seemed to be higher among adults than adolescents. The knowledge about this highly increased suicide rate among intercountry adoptees is important information and should be applied in the prevention **(21)**.

Seasonal and nocturnal variations:
Gert Jessen from Denmark has done several studies on the seasonal, nocturnal and other cyclic time factors impact on suicide rates. Results show that the highest rate of both suicides and suicide attempt is in the spring season (April - May) for males and autumn for women, contrary to many beliefs. Most suicides happen during daytime, when it is light outside, although most suicide attempts happen at night.
Moreover he found other factors such as biorhythms, moon phases and weather does not influence the suicide rates to a significant extent.

Discussion

Comparing health data from different countries poses many difficulties and problems. The EUROSAVE study found that international comparisons of suicide rates are problematic since evidence exists of underreporting as well as fatalities being misclassified as "undetermined deaths". Varying recording, coding and classification systems employed across the EU might be responsible. Their data suggest that misclassification probably explains a relatively small proportion of the geographical and secular variation in suicide rates although suicide may be less socially stigmatized in some countries than in others.

Possible remedial measures include the standardization of recording and reporting suicide events and suicide methods in all member states, and the establishment of national parasuicide registers following Ireland's lead. The EUROSAVE project concludes that in the absence of adequate EU-wide data on suicide epidemiology, effective prevention of suicide is likely to remain elusive **(2)**.

Many persons seek medical assistance in the time before they commit suicide; most often they see their GP. They often do not explicitly express their suicidal ideations. Therefore the responsibility often lies in the hands of the primary care to identify suicidal patients and provide adequate health care to prevent persons from committing suicide. I think focus should therefore be on educating primary carers in dealing with the suicidal or possibly suicidal patient. It is equally important that persons at risk of suicide are referred from their primary carers to professionals specialized in dealing with suicidal persons, and that this care is of high quality. The prevention of suicide is of course not only a matter for the primary care, but is a responsibility that rests on many levels in the society, as discussed below.

Conclusion and preventive aspects

The trends in suicide ratios have been positive in many countries in the EU region, but suicide remains a large health challenge. Especially challenging are the high rates in many new EU countries and the increase in many countries in the suicide mortality among young people.

To stimulate the initiation of suicide prevention programmes, the WHO European Network on Suicide Prevention was established in December 2000 within the framework of the European mental health programme.

The Network consists of two parts. The first concerns the monitoring of suicide and attempted suicide in different regions of European countries and the second comprises the initiation of programmes for the prevention of suicide in those European countries currently lacking such programmes. The task of the network also involves stimulating the implementation of existing programmes, assisting in the development of new strategies, and developing new tools for evaluating suicide prevention efforts. The network further aims to establish educational programmes, an information system and research projects focusing on the etiology of suicidal behavior as well as on the evaluation of intervention programmes(**25**).

Of the 38 of the countries in this network, 18 have national suicide prevention programmes. The comprehensiveness and coordination of national suicide prevention activities vary considerably between the countries. In Bulgaria, Denmark, Finland, France, Ireland, Norway, Sweden and the United Kingdom, national programmes with a variety of strategies have been established. Programmes are here understood as concise action plans, combining various specific national strategies in order to achieve predefined goals and objectives, whereas national strategies are defined as different preventive approaches established nationally in different settings. Estonia, Lithuania and Slovenia report having different national suicide prevention strategies and also having started to draft national programmes.

Fig 8: Themes of intervention in mental health care and public health in national suicide prevention activities

	Health care perspective		Public health perspective		
Countries	Services[a]	Education[a]	Media	Access	Awareness[a]
Belarus	+	+	–	–	+
Bulgaria	+	+	+	–	+
Czech Republic	+	+	–	–	+
Denmark	+	+	–	–	+
Estonia	+	+	–	–	+
Finland	+	+	+	–	+
France	+	+	+	+	+
Georgia	+	+	+	–	+
Hungary	+	+	–	–	+
Ireland	+	+	+	+	+
Latvia	+	+	+	+	+
Lithuania	+	+	+	–	+
Norway	+	+	+	+	+
Romania	+	+	–	–	+
Slovenia	+	+	+	–	+
Sweden	+	+	+	–	+
Turkey	+	+	+	–	+
United Kingdom	+	+	+	+	+

Source: WHO.

Strategies for suicide prevention can be divided into a health care approach and a public health approach *(***25**), see fig. 8.In successful suicide prevention; both strategies should be combined for optimal impact. Health care approaches aim to improve health care services and diagnostic procedures, and consequently to improve the treatment, follow-up and rehabilitation of psychiatric patients, those who attempt suicide, and those in psychological distress with suicidal thoughts. In suicide prevention work one should strive to increase awareness among health care staff of their own attitudes and taboos towards suicide prevention and mental illnesses.

Public health perspectives are concerned not only with controlling access to means of suicide and a responsible media policy, but also with changing condemnatory attitudes in society to mental illness and suicide prevention. One strategy is to increase knowledge through public education about mental illness and its recognition at an early stage, as well

as the role of acute and chronic psychosocial stress and the importance of protective factors against psychological stress and suicidal behavior.

Factors that protect against mental ill health include psychosocial factors, such as good supportive networks and adequate coping abilities, as well as physical and environmental factors such as good sleep, a balanced diet, physical exercise and a drug-free environment.

Target groups for suicide prevention efforts according to the public health perspective can be very broad but they can also be quite specific, focusing for example on schools, military organizations, etc.

According to the health care perspective, target groups for suicide prevention not only comprise patients and relatives but also health care personnel and those (politicians and health care administrators) who decide the economics of health care services. Prevention of suicide should always involve a whole series of activities, ranging from improving conditions for bringing up children and young people, to controlling environmental risk factors, to giving the best effective treatment of mental disorders both in the community and in hospital.

Despite the fact that more studies are needed, there is evidence that suicide can be prevented, both through adequate treatment of psychiatric disorders in psychiatric clinics as well as through better and earlier detection and treatment of psychiatric illnesses in the general population (**25**).

Several studies have shown that treatment with antidepressants for depression, lithium for bipolar disorders and neuroleptics for schizophrenia and other psychotic illnesses can prevent both suicide and attempted suicide.

Encouraging results of dialectical behavioral therapy and promising results with cognitive behavioral psychotherapy for reducing the repetition of suicide attempts indicate that they should be utilized much more broadly, especially with personality disorders who attempt suicide.

Problem-solving therapies and the use of emergency help cards, giving easy access to treatment in contrast to standard after-care procedures, are also good examples of how

repetition of attempted suicide can be reduced. Yet another example was a training programme for general practitioners on the Swedish island of Gotland, which succeeded in reducing suicide rates (**25**).

Several general public health programmes, such as the reduction of alcohol consumption during *perestroika* in the former Soviet Union (the most effective suicide prevention programme for males of the 20th century) are of great interest. Controlling the environment by removing the means of suicide (gun control, decreased availability of toxic medications, etc.) has also been shown to be effective in suicide prevention. Controlling the environment through responsible media reporting is another important way of preventing suicidal acts in susceptible individuals. Identification with and even imitation of suicide or attempted suicide can take place when such acts occur in the immediate vicinity of vulnerable persons, in places such as schools, medical wards, military units, prisons, etc. In Israel, Sweden and the United States, suicide prevention programmes in schools have led to encouraging reductions in attempted suicide. In specific environments, such as the military and prisons, suicide prevention programmes aimed at enhancing the knowledge of the responsible personnel may result in a substantial reduction in suicide rates. Such examples may be seen in Greece, Lithuania, Norway and Ukraine **(25)**.

After the suicide rates in Norway doubled in the period 1970-88, suicide prevention was in the nineties assigned to the political agenda. The National Institute of Public Health (Statens Helsetilsyn) worked out a plan of action in suicide prevention, which was published in 1995. This plan of action was devoted towards increasing the quality of health care for people in high-risk of committing suicide. One of the main means of reducing suicides in Norway was to "map out and evaluate the existing programmes for organized cooperation, spread knowledge about existing well-functioning programmes and possibly develop new programmes" (**26**).

One of the established preventive programmes was applied in the municipality of Bærum, Norway. A study of this of the outcome of this programme was made, and the results were promising. The programme focused mainly on the follow-up of patients with a history of suicide attempts. It is well documented that this group is characterized by

having little initiative to seek adequate help for their psychiatric problems, and a high tendency to relinquish established therapy.

In this programme, the public health nurse plays a pivotal role in a team consisting of psychologists, psychiatrist and social workers. He or she is responsible for the close follow-up of patients in the period from hospitalization to established care in the psychiatric health service. This service includes home visits to the patients, among other measures. This intervention is built on a psychological comprehension of suicidal behavior, with emphasis on problem-solving in the acute crisis, together with increasing motivation for long-term therapy. The Bærum-programme is an example of a multi-disciplinary approach to suicide prevention, which so far has shown good results. A continuous effort should be put into improve existing and develop new programmes in the prevention of suicide.

REFERENCES

1. A Camus. The Myth of Sisyphus. 1942.
2. Stone DH, Chishti P, Roulston C: Final report of the European review of suicide and violence epidemiology - (EUROSAVE) project.
3. Qin P, Agerbo E, Bo Mortensen P: Suicide Risk in Relation to Socioeconomic, Demographic, Psychiatric, and Familial Factors: A National Register-Based Study of All suicides in Denmark, 1981-1997. Am J Psychiatry 2003; 160: 165-172.
4. Kposowa AJ: Research on unemployment and suicide. J Epidemiol and Community Health 2003; 57 : 559-560.
5. Van Heeringen K: Unit for suicide research, University of Gent, Belgium. The British Journal of Psychiatry 2003; 183: 260-261.
6. Hawton K, Arensman E, Wasserman D et al.:Relation between attempted suicide and suicide rates among young people in Europe. J Epidemiol Community Health 1998; 52 : 191-194.
7. Weir E: Suicide : The hidden epidemic. JAMC 4. sept. 2001; 165 (5).
8. Preti A, Miotto P. Suicide and unemployment in Italy, 1982-1994. J Epidemiol Community Health 1999; 53:694-701.
9. Mittendorfer Rutz E, Wasserman D. The WHO European monitoring surveys on national suicide preventive programmes and strategies. Suicidologi 2004; årg. 9, nr 1: 23-25.
10. Hem E: Selvmord – fortsatt et stort helseproblem. Tidsskr Nor Lægeforen nr. 9, 2001; 121.
11. Hegna K. Høyere forekomst av selvmordsforsøk blant homofile ungdommer? Tidsskr Nor Lægeforen nr. 9 2001; 121: 1100-1102.
12. Dieserud G, Loeb M, Ekeberg Ø.Selvmord og selvmordsforsøk i Bærum 1984-95. Tidsskr Nor Lægeforen nr. 9 2001; 121: 1026-31.

13. The European commission, Eurostat. Europe in figures - Eurostat yearbook 2005.2005.
14. Kjølseth I, Ekeberg Ø, Teige B. Selvmord blant eldre i Norge. Tidsskr Nor Lægeforen 2002; 122:1457-61.
15. Hem E. Hvorfor faller ikke selvmordsratene i Norge? Tidsskr Nor Lægeforen 2003; 123; 2240.
16. Mehlum L. Selvmord blant barn og unge i Norge – noen epidemiologiske utviklingstrekk. Suicidologi 2000, årg. 5, nr. 1, 8-9.
17. Langlo S R, Ramberg M, Grøholt B. Suicidal ungdom – hva skal klinikere se etter? Tidsskr Nor Lægeforen nr. 16, 2003;123:2246-9.
18. Bertolote J M, Fleischmann A. A global perspective in the epidemiology of suicide. Suicidologi 2002; årg. 7, nr.2:6-8.
19. Marquet R L, Bartelds I M et al. The epidemiology of suicide and attempted suicide in Dutch general practice 1983-2003. BMC Family Practice 2005;6:45
20. Weitoft G R, Gullberg A, Hjern A, Rosen M, Mortality statistics in immigrant research: method for adjusting underestimation of mortality. International Journal of Epidemiology 1999:28;756-763.
21. Hjern A, Allebeck P. Suicide in first-and second-generation immigrants in Sweden. A comparative study. Soc Psychiatry Psychiatr Epidemiol 2002;37:423-429.
22. Vijayakumar L. Religion-en beskyttende faktor ved selvmord. Suicidologi 2002: årg. 7, nr 2.
23. WHO. World report on violence and health 2002, 7, 185-212.
24. Jessen G.Sæson for selvmordadfærd: myter og resultater. Suicidologi 2003: årg. 8, nr1.
25. WHO. Suicide prevention in Europe. The WHO European monitoring survey on national suicide prevention programmes and strategies.2002.
26. Dieserud G, Loeb M, Ekeberg Ø. Selvmord og selvmordsforsøk i Bærum 1984-95. Tidsskr Nor Lægeforen nr.9, 2001; 121: 1026-31