



Original paper

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## Epidemiology of suicides in Poland in 1990–2018 – changes and new trends

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### Abstract

**Aim of the study:** In Poland, the problem of suicide attempts has not been the subject of a comprehensive analysis. We examined the magnitude of the phenomenon and suicide trends over the past 3 decades, focusing on the number of suicide deaths and attempts, the method and place of suicide, gender, age, day of the week, and state of mind.

**Material and methods:** We used official nationwide data collected by the Central Statistical Office (CSO) and the National Police Headquarters (NPH) for the years 1990–2018. The final statistical data collected by the CSO was verified on the basis of medically certified deaths.

**Results:** Despite the correlation between the information from the CSO and NPH on the classification of suicides, in the opinion of authors, the published data is underestimated or incorrectly categorized. There were 187,502 suicide attempts in Poland between 1990 and 2018, 75.8% of which resulted in death. In 2018, the suicide rate in Poland was 13.6 per 100,000 people and was higher than in 1990 (9.7). The highest risk for suicides is observed for men aged 45–54 years, at the turn of winter and spring, on Mondays, and in rural areas. The critical period is Mondays at the turn of winter and spring. Hanging is the most commonly used suicide method.

**Conclusions:** Based on the collected statistical data, it should be stated that suicide attempts have for many years been a significant social problem in Poland, for which no systemic solutions have been introduced.

**Key words:** suicide, suicide attempt, new trends, Poland.

### Introduction

The systematic increase in the number of suicides is a growing social problem. Poland, like many other Eastern European countries, has a considerable number of suicides. The scant data collected since 1955 indicate that the suicide rate (defined as the number of suicides per 100 thousand people) is systematically growing. It is currently estimated at 13.6/100,000 suicide attempts resulting in death and 29.3/100,000

– total number of suicide attempts. This value differs depending on where the suicide attempt actually takes place and is higher in rural areas. According to Hołyst [1], the suicide rate was 20.7/100,000 in rural areas and 14.5/100,000 in cities.

The reasons are complex and not only associated with the political and economic transformation that took place in Poland and other Eastern European countries. Global social aspects tend to have a negative impact on the observed phenomenon. This

can be especially well observed in the former Soviet Union states [2, 3], where a correlation between the number of suicides and economic changes, “general pathogenic social stress”, political changes, and social disorganisation was observed [4, 5]. Another factor is attempting suicide under the influence of alcohol [6, 7]. The above-mentioned process of turbulent political, economic, and social transformation started in 1990, and was associated with a change of the entire political system in Poland.

## Aim of the study

A valid classification of the causes and manners of death is essential in healthcare planning and for research purposes. The aim of this research paper was to demonstrate the dynamics of changes in suicides in Poland during almost the last 3 decades (29 years), with special recognition of new trends. The analysis of the latter may prove helpful in creating prevention programmes for particular groups with increased risk of suicide.

## Material and methods

The presented studies were carried out using data collected by 2 institutions, i.e. the Central Statistical Office (CSO, in Polish Główny Urząd Statystyczny – GUS) [8] and the National Police Headquarters (NPH, in Polish: Komenda Główna Policji – KGP) [9]. The published data show significant differences, which result from different sources of obtaining information (underestimated or incorrectly categorized). The register run by CSO is based on death reports issued by medical practitioners, containing personal data and the cause of death (a description with the ICD-10 code).

In situations such as hanging or jumping from a height, the physician entering the symbol identifying a suicide attempt on the death certificate is not in doubt. In other, less obvious situations, it is the physician who decides whether to report the death to the police authorities. This is due to the fact that the applicable regulations are not clear on this matter. For example, drownings are in most cases treated as unfortunate accidents, even if the circumstances of the case indicate that a suicide attempt may have occurred. In Poland, there is also no obligation to register committed suicide attempts/ attempts to self-

harm, and only a small part of people who have attempted suicide use medical assistance, and thus their case is not subject to any official registration. On the other hand, cases of suicide attempts undertaken in hospital wards, especially in psychiatric wards, are treated as a manifestation of the disease and as such are recorded in the history of the disease and are not separately recorded.

Families also sometimes try to hide this fact by masking the real cause of death. This is partly due to the fear of negative reception of this fact by the local community, and on the other hand, an important role in this practice is played by religious reasons, which do not accept suicide. Due to the above circumstances, and additionally the lack of a coroner's institution, death certificates do not always contain reliable information about the causes of death.

The basis of the police records is the form “Report of suicidal attempt/behaviour”, prepared as part of routine activities of verification or preliminary investigations. The declaration form contains 3 groups of information. The first group concerns information about the place, method, and reasons for the attempt or suicidal behaviour. The second group contains health information and data on the state of consciousness at the time of the event. The third section contains information on the sources of income of the victim of an attempt or suicidal behaviour.

An additional element that may affect the police statistics is the phenomenon of disappearances of both adults and children, which is in a separate category. According to police statistics, about 20,000 cases of disappearances are reported each year, some of which are considered permanently missing. On the other hand, there are around 3,000 unidentified human dead bodies and remains in the police records. It is assumed that some of them are victims of suicide attempts, who are wanted as missing people.

In the years 1990–2018, there were large discrepancies in the number of suicide deaths (a difference from several to several thousand) between the data collected by the NPH [9] and the CSO [8] (Table I), while the data collected by the CSO was usually higher than those collected by the NPH. The data collected by the CSO for 1990–2017 [8] were in most cases verified by physicians (Table II), and the difference between the total and the numbers

**Table 1.** Differences in the number of suicide deaths recorded by Central Statistical Office [8] and National Police Headquarters [9] in the years 1990–2018

Year	Suicide deaths by NPH	Suicide deaths by CSO	Differences in the number of suicide deaths CSO and NPH
1990	3714	4979	1265
1991	4159	5147	988
1992	5453	5713	260
1993	5569	5634	65
1994	5538	5524	-14
1995	5485	5512	27
1996	5334	5424	90
1997	5614	5037	-577
1998	5502	4915	-587
1999	4695	5784	1089
2000	4947	5845	898
2001	4971	5862	891
2002	5100	5906	806
2003	4634	5834	1200
2004	4893	6071	1178
2005	4621	6043	1422
2006	4090	5805	1715
2007	3530	5282	1752
2008	3964	5681	1717
2009	4384	6474	2090
2010	4087	6342	2255
2011	3839	6112	2273
2012	4177	6365	2188
2013	6101	6215	114
2014	6165	5933	-232
2015	5688	5417	-271
2016	5405	4671	-734
2017	5276	4482	-794
2018	5182	n/a	n/a

CSO – Central Statistical Office, NPH – National Police Headquarters

Source: own study based on the National Police Headquarters and Central Statistical Office statistical data.

stated by physicians did not exceed 221 deaths. The above-mentioned situation has a certain impact on the statistical data published by the World Health Organization (WHO) and Eurostat. In the authors' opinion, the published statistical data is underestimated, which is partly due to errors in official documents as well as the presence of a "dark number"

of suicidal attempts or deaths that are not disclosed although they took place.

## Results

### The number of suicides

There were 187,502 suicide attempts in Poland between 1990 and 2018, 75.8% of which resulted in death. The greatest number of suicide attempts was registered in 2014 (10,207), 6165 of which resulted in death. The least number of suicide attempts (total) took place in 1990, i.e. 3841, while the least number of suicide deaths was recorded in 2007 (3530). The average number of suicide attempts in the studied period of 3 decades was 6465 per year, while the average number of suicide deaths was 4901.

An increase in the number of suicide attempts has been observed since 2014. However, the number of suicide deaths decreased noticeably, i.e. there were 6165 of such cases in 2014 and 5182 in 2018. Figure 1 presents the trend in suicide attempts between 1990 and 2018 [9].

The suicide rate ranges from 9.2/100,000 in 2007 to 16.2/100,000 in 2014 (total). Detailed information is presented in Figure 2 [9].

### Gender

There were 150,327 male suicide attempts in Poland in the period of 1990–2018, 79.20% of which resulted in death. On the other hand, there were 37,173 female suicide attempts in the same period, 61.92% of which resulted in death. In 1990, the male-to-female ratio was 4.1:1 for suicide attempts and 4.3:1 for the resulting deaths, while in 2018 these values were 2.9:1 and 6.2:1, respectively. The number of suicide deaths among women is relatively constant, while the number of male suicide attempts shows greater variation. However, a rapid increase in the number of female suicide attempts has been observed since 2012.

### Day of the week

In the studied period of 30 years, suicide attempts occurred most frequently on Monday (29,364), followed by (in descending order) Tuesday (27,620), Wednesday (26,624), Sunday (26,265), Thursday

**Table II.** Differences in the number of suicide deaths recorded by the Central Statistical Office [8] as the total of suicides deaths and numbers stated by physicians in the years 1990–2017

Year	Code list of 3-character categories ICD-X	Suicidal deaths by CSO		Differences in the number of suicide deaths by CSO – total and stated by physicians
		Total	Of which stated by physicians	
1990	E950–E959	4768	4712	56
1991	E950–E959	5316	5123	193
1992	E950–E959	5713	5492	221
1993	E950–E959	5624	5423	201
1994	E950–E959	5519	5363	156
1995	E950–E959	5499	5348	151
1996	E950–E959	5446	5326	120
1997	E950–E959	4221	4143	78
1998	E950–E959	5052	4937	115
1999	X60–X84	5778	5726	52
2000	X60–X84	5841	5813	28
2001	X60–X84	5862	n/a	n/a
2002	X60–X84	5906	n/a	n/a
2003	X60–X84	5834	n/a	n/a
2004	X60–X84	6071	n/a	n/a
2005	X60–X84	6043	6026	17
2006	X60–X84	5805	5784	21
2007	X60–X84	5282	5268	14
2008	X60–X84	5681	5662	19
2009	X60–X84	6474	6437	37
2010	X60–X84	6342	6331	11
2011	X60–X84	6112	6070	42
2012	X60–X84	6365	6331	34
2013	X60–X84	6215	6181	34
2014	X60–X84	5933	5909	24
2015	X60–X84	5417	5409	8
2016	X60–X84	4671	4667	4
2017	X60–X84	4482	4479	3

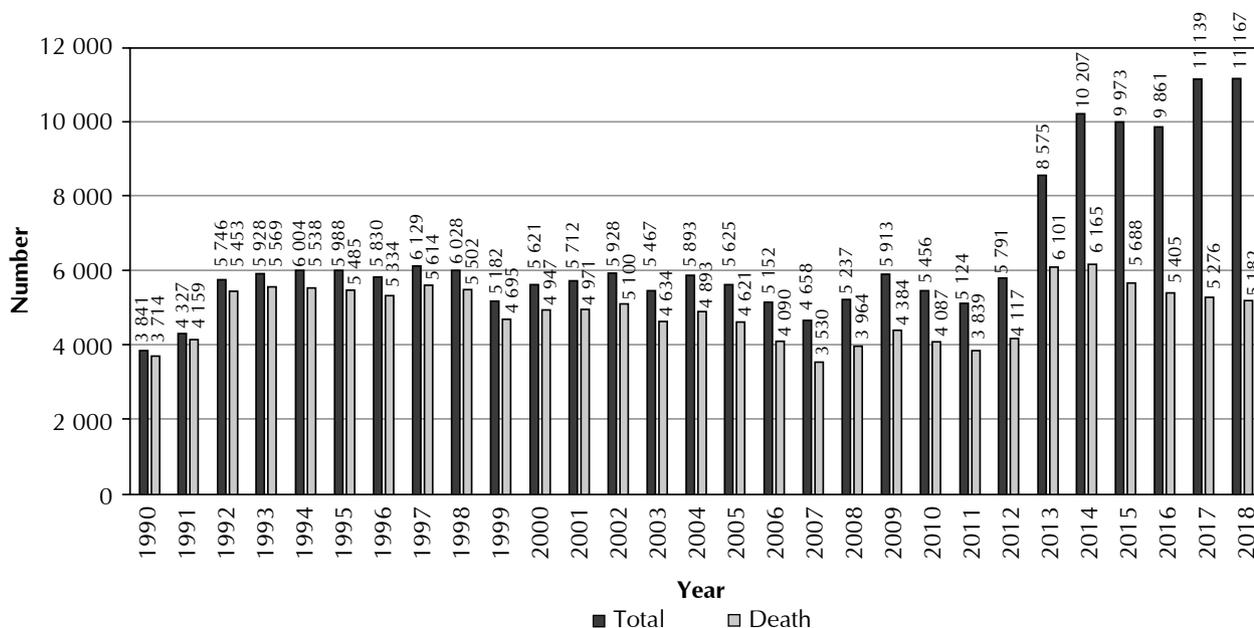
Source: own study based on the Central Statistical Office statistical data.

(26,028), Friday (25,669), and Saturday (25,019). It was impossible to establish the day of the suicide attempt for 788 events. The distribution is slightly different for suicide deaths (data for the years 1999–2018). Suicide deaths occurred most frequently on Monday (15,241) followed by Tuesday (14,370), Wednesday (13,780), Thursday (13,466), Friday (13,220), Sunday (13,075), and Saturday (12,345). It was impossible to establish the day of the suicide death in 244 cases. The greatest number

of suicide deaths occurred on Monday. The analysis of the above-mentioned data reveals that this number decreases gradually until Saturday, with a subsequent increase in the number of suicide deaths on Sunday.

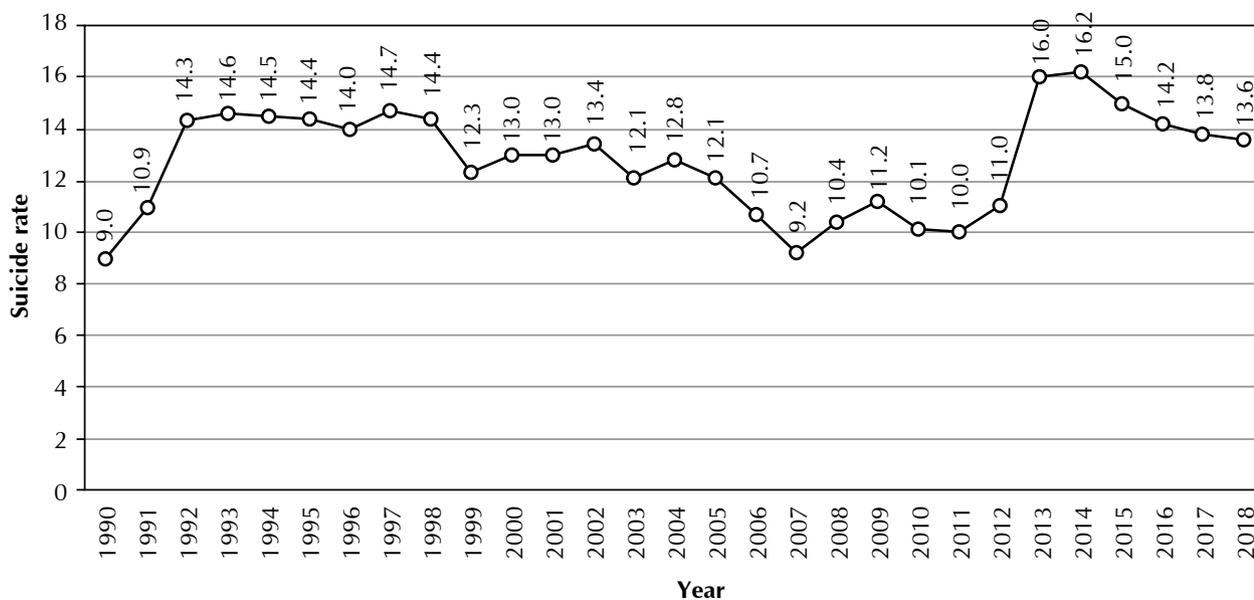
### Suicide method

The dominating suicide method in Poland in the studied period of 30 years was hanging (Figure 3) [9],



**Fig. 1.** The number of suicide attempts in Poland in 1990–2018 (total and deaths)

Source: own study based on the National Police Headquarters [9] statistical data.



**Fig. 2.** The suicide rate in Poland in 1990–2018

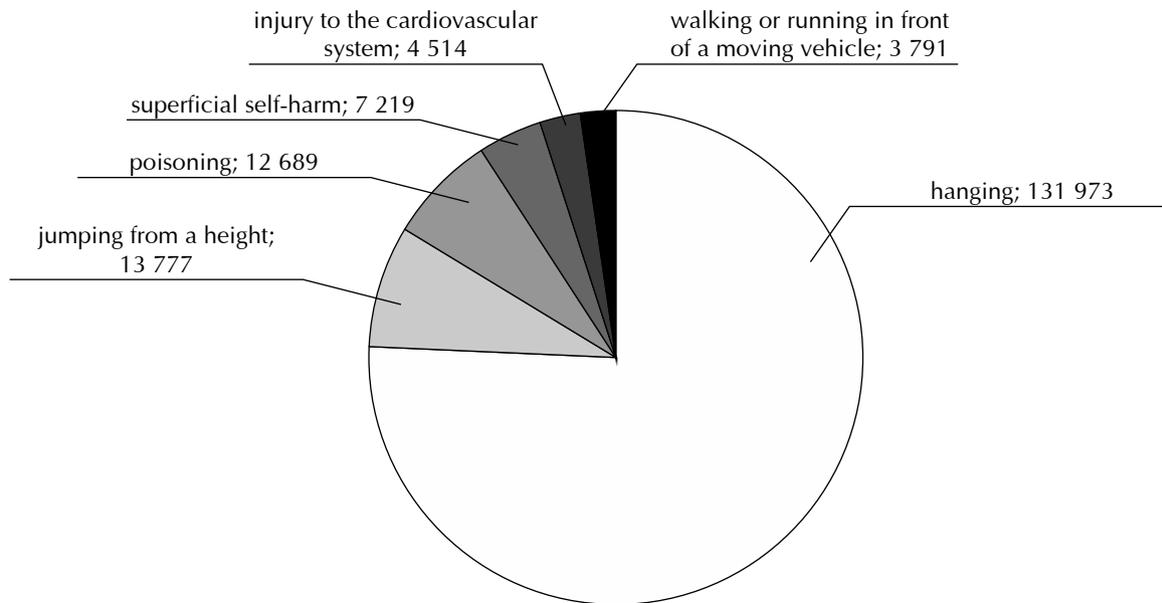
Source: own study based on the National Police Headquarters [9] statistical data.

which accounts for 75.9% of all those who died by suicide (131,973). The second most common method is jumping from a height (13,777), which is responsible for 7.9% of total suicide attempts.

The increasing number of suicide attempts by poisoning is alarming. In the studied period of 30 years, suicide by consuming poison was registered

in 12,689 cases (7.3%). In the period between 1990 and 2016, the term poisoning was defined as gas poisoning, and consuming poison or sleeping agents. In 2017–2018, this term was defined more precisely as poisoning with gas/exhaust fumes, poisoning with chemical/toxic agents, the consumption of sleeping agents/psychotropic medication, the consumption





**Fig. 3.** Suicides by method (total) in 1990–2018\*

Source: own study based on the National Police Headquarters [9] statistical data. \*There are no data in the figure for injury to the cardiovascular system and surface self-harm for 1990–1991. There was then the category “vein cutting”.

of other medication, and poisoning with narcotic drugs and designer drugs.

Since 2017, self-immolation has been considered a new method of suicide. In 2017, 48 cases of self-immolation were registered, 12 of them leading to death. In 2018, there were 54 of such cases (15 deaths).

One of the most commonly chosen methods was superficial self-harm (7219 cases, 4.1%) and self-inflicted injury to the cardiovascular system (4514 cases, 2.6%). The period of 1990–1991 is excluded, when the separate category of “vein cutting” was registered (105 cases). Another category was jumping, walking, or running in front of a moving vehicle (statistical data collected by the NPH do not distinguish between rolling stock and wheeled vehicles) – 3791 cases (2.2%).

Since 2011, a new trend has been observed, i.e. an increase in the number of suicide attempts involving firearms. A total of 1708 such suicide attempts was registered between 1990 and 2018 (0.9%). On the other hand, there is a rapid decrease in the number of murders and attempted murders involving firearms. There were 111 such cases in 2002 and 25 in 2018.

The available statistical data do not take combined (complex) suicides into account, i.e. when the suicide attempt makes use of more than one method [10].

## Suicide site

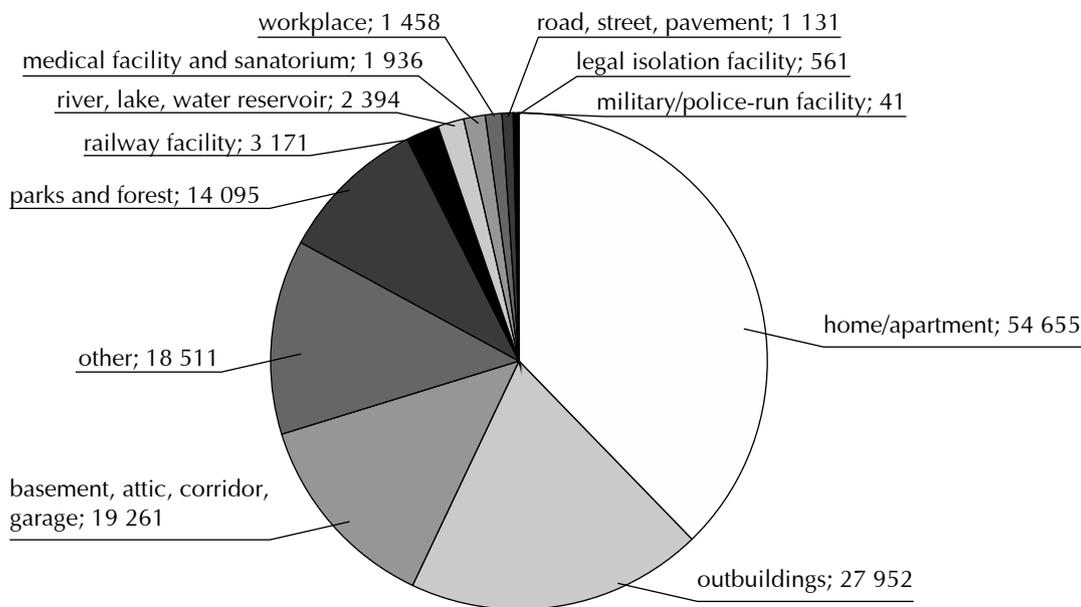
The most common sites to die by suicide in the studied period (Figure 4) [9] were: home/apartment (54,655, 37.7%), outbuildings (27,952, 19.3%), basement, attic, corridor, garage (19,261, 13.3%), and parks and forest (14,095, 9.7%).

The trend to select a particular site to take one’s life is relatively constant over the 30-year period. Differences are observed for suicides associated with railways. There was a noticeable decrease (over 100 cases per year) between 2006 and 2012.

Since 2017, the statistical data collected by the NPH include such categories as foster care centre/social care centre (3 and 2 suicides, respectively); military/police-run facility (2 and 1); and school/university (7 and 7).

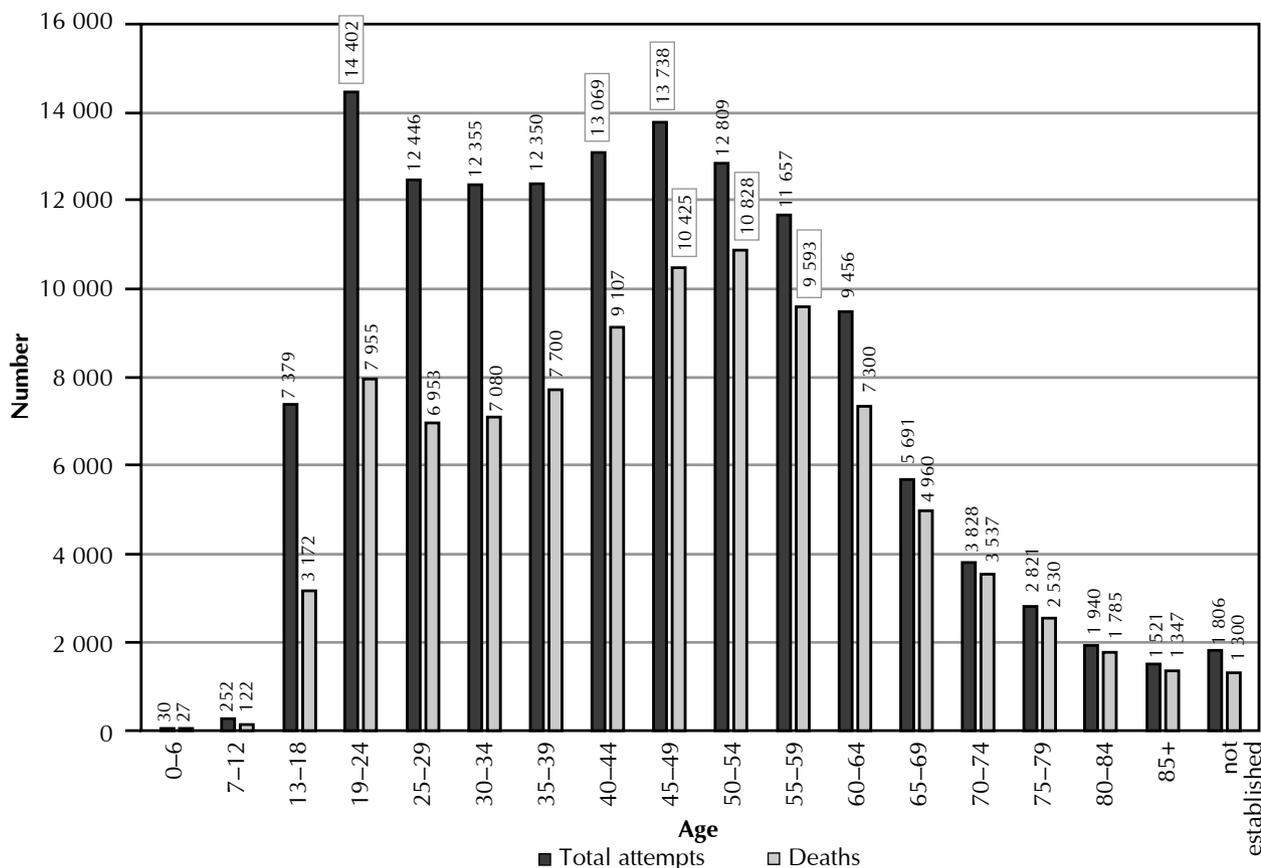
## Age

The greatest number of suicide attempts in 1999–2018 (Figure 5) [9] is recorded for people aged 19–24 years (14,402 cases), followed by those aged 45–49 (13,738) and 40–44 years (13,069). The greatest number of suicide deaths is observed for people aged 50–54 years (10,828) and 45–59 years (10,425). Suicide deaths are much more common in mature people.



**Fig. 4.** Suicides by site in 1990–2018\*

Source: own study based on the National Police Headquarters [9] statistical data. \*There are no data in the figure regarding suicides in rivers, lakes and water reservoirs; in the railway area facility and at the workplace in 1990–1991.



**Fig. 5.** Suicides by age in 1999–2018 (total attempts and deaths), the very high numbers of suicides are surrounded by a rectangle

Source: own study based on the National Police Headquarters [9] statistical data.

The greatest number of suicide deaths is observed for people aged 50–54 and 45–49 years. A noticeable downward trend in the number of suicide deaths among young people (up to 24 years of age) is observed, contrary to an increase in the number of suicide attempts and suicide deaths among the elderly (over 70 years of age). Prevention programmes should therefore include both age groups.

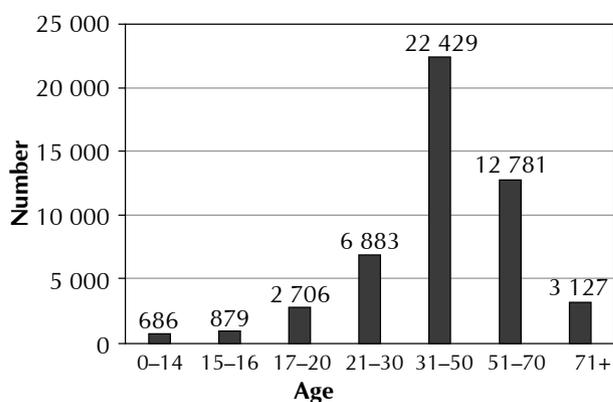
Due to the fact that the statistical data for 1990–1998 used different age ranges, we have presented these data separately (Figure 6) [9]. This is justified because the age ranges used are rather wide and do not show the exact age, and therefore the specific character, of suicides as precisely as was done between 1999 and 2018.

### State of mind

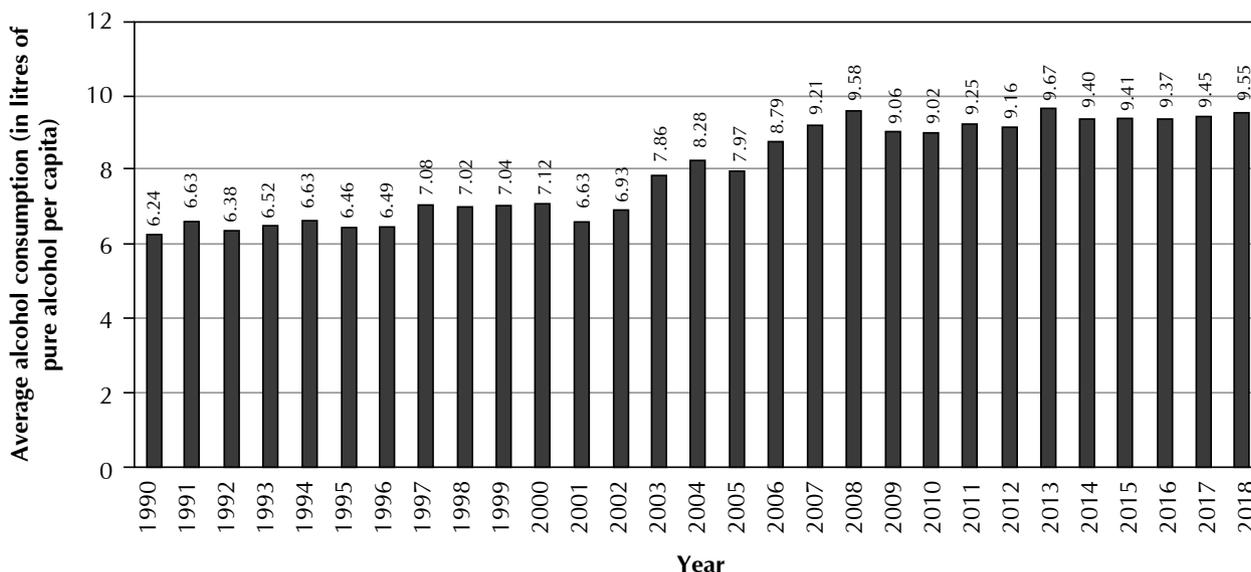
In most cases it was impossible to establish the state of mind of the suicide. However, alcohol was the most frequently registered substance. It is worth noticing that the consumption of alcohol systematically increased in the studied period (Figure 7) [8], which significantly increases the probability of this substance being used during suicides. The data published by the CSO are incomplete, because besides alcohol distributed via official channels, they do not take into account the illegal production of moonshine, home-made wine, the consumption of

denatured alcohol, alcohol-containing drugs, and alcoholic beverages stolen during production or transport. On the other hand, data published by Eurostat are alarming: Poland has one of the highest mortality rates from alcohol abuse in the European Union. It was 6.95 per 100,000 citizens in 2016, and higher values were calculated only for Slovenia (13.88) and Denmark (11.53) [11].

There is no systematic monitoring of suicide cases connected with the use of narcotic drugs and psychotropic substances gathering by the CSO and NPH in 1990–2018. According to NPH records published by the CSO, in 82.1% of suicide attempts



**Fig. 6.** Suicides by age in 1990–1998 (total attempts)  
Source: own study based on the National Police Headquarters [9] statistical data.



**Fig. 7.** Average alcohol consumption (in litres of pure alcohol per capita) in 1990–2018  
Source: own study based on the Central Statistical Office [8] statistical data.

resulting in death in Poland in 2016 it was not possible to establish the state of mind. In the cases where it was possible – 620 (16.9%) suicide deaths were under the influence of alcohol and 36 fatalities (1%) were under the influence of other psychoactive substances [12].

Similarly, according to the records gathering by the Department of Forensic Medicine of the Medical University of Gdańsk in 1980–2009, information on mental disorders was not available for 2748 suicides (70.7%). In the cases where it was possible – 376 (9.7%) suicide deaths were under the influence of alcohol and 70 fatalities (1.8%) were under the influence of other psychoactive substances (narcotic drugs, medicines, organic solvents) [13].

### Prevention

In accordance with WHO recommendations, Poland should implement a document that is a strategy to prevent suicide [14]. Currently, work is underway on this document, which will be titled the Polish Strategy for Suicide Prevention, which is part of the National Health Program. In 2016, a working team on suicide and depression prevention was established at the Ministry of Health's Public Health Council, which is preparing the above-mentioned document. One of the activities accompanying the research of this strategy was the preparation of a guide addressed to the media, whose purpose is to use the media message to prevent suicides [15].

An important role in the prevention of suicidal behaviour is played by non-governmental organizations (NGOs) and the Polish Suicidological Society (Table III) [16–21]. The PSS initiates many ventures also in cooperation with, among others, the Office of the Ombudsman for Children and the Ministry of National Education, taking part in the preparation of, e.g., teacher guides.

Among the problems Poland is facing in the field of suicide prevention, one should mention insufficient participation of health care professionals employed in primary healthcare in preventive activities aimed at preventing suicide attempts and limited access to psychological and psychiatric specialists. In connection with the above, preventive actions are implemented as part of the activities of foundations, associations, and NGOs.

### Discussion

The greatest number of suicides among European countries is observed in Eastern Europe [22]. According to data presented by the WHO, in 2016 the suicide rate per 100,000 people was 31.9 in Lithuania, 31.0 in Russia, 26.2 in Belarus, 22.4 in the Ukraine, 21.2 in Latvia, 21.2 in Estonia, and 16.2 in Poland, while the EU and the world average is, respectively, 15.4 and 10.6 [23]. According to Organisation for Economic Co-operation and Development (OECD) the average suicide rate in the EU member states in 1990–2018 was 16.6 and in Poland at the same time it was 14.9 [24].

**Table III.** Forms of activities to prevent suicide in Poland

No	Organization name	Organization status	Forms of activities	Reference
1	Suddenly Alone Foundation (SAF)	NGO	Psychological and legal expert advice	[13]
2	Emergency Help Team Foundation (EHTF)	NGO	Psychological and legal expert advice	[14]
3	Empowering Children Foundation (ECF)	NGO	24/7 helpline for people with suicidal thoughts	[15]
4	ITAKA Centre for Missing People (ICMP)	NGO	Psychological and legal expert advice	[16]
5	See I Am Foundation (SIAF)	NGO	National campaigns to prevent suicide of children and youth	[17]
6	Polish Suicidological Society	Society	Expert, training, media and publishing activities, including publishing WHO documents on suicidological issues in Polish	[18]

NGO – non-government organization



Until 2012, data on suicides in Poland were entered into the police informatics system after the completion of a check procedure. After 2013, the method of collecting statistical data was changed (the most probable reason for the significant increase of suicide attempts after 2013, which is presented in Figure 1). Currently, registration is taking place directly at the time that it is established that a suicide attempt has taken place. A system of “suspension” of records with a 1-month delay was also introduced, allowing for modification in particular cases [9].

Mortality associated with suicide attempts is generally high in Poland, just like in other countries in Eastern Europe. This applies especially to men aged 45–54 years old.

Our research did not confirm the correlation between the number of suicide deaths and the phenomenon of unemployment, as described by Nordt *et al.* [25]. In Poland, there were 2 unemployment peaks in 1993 and 2003 (where the unemployment rate was 16.4 and 20.0, respectively), which did not correlate with the number of suicide deaths, which remained at a more or less similar level.

Another alarming issue is the upward trend in the number of suicide deaths among older people (over 70 years of age). This complies with the observed trend worldwide and is becoming a public health problem [26].

An increasing trend in the number of suicides among adolescents has been observed in the last few decades [27]. Such a phenomenon was observed e.g. in Lithuania [28]. However, there is a downward trend in the number of suicide deaths among young people (up to 24 years of age), despite the increase in the number of suicide attempts. This is associated with the following risk factors: ill-treatment by peers, copycat suicide, sexual orientation, and the way information about suicide is presented in the media [29].

There is a similar correlation between male and female deaths. According to Kőlves *et al.* [30], there are 2 to 4 times as many male than female suicides. Other authors [31] stated this ratio as 3.0–7.5. Asian countries are an exception to this rule, especially rural areas of China, where the female suicide rate is significantly higher than that registered for men [32, 33].

Around a quarter of all medical drug (paracetamol compounds, benzodiazepines, and tricyclic/

tetracyclic antidepressants) overdose suicide deaths occurred subsequent to hospital admission in 1997–1999 in England [34]. In the cross-sectional study analysed censuses of live emergency department and inpatient discharges for 11 US states that included 421,466 medically identified suicidal drug overdoses, the risk that an overdose would be fatal was highest if an opioid or barbiturate was involved. Among 421,466 drug poisoning suicidal acts resulting in 21,594 deaths (5.1%), 19.6–22.5% of the suicidal drug overdoses involved benzodiazepines and 15.4–17.3% involved opioids [35]. Above-mentioned data are similar to the NPH records in Poland in 2016, i.e. that around 18% of suicide deaths were under the influence of alcohol (16.9%) or other psychoactive substances (1%) [12].

We tend to believe, however, that the number of suicides among women, as in other countries, may be underestimated, because they use methods referred to as “soft”, which contributes to a change in the categorisation of the case [36]. It should be noted that “soft” methods of committing suicide are those that are less likely to lead to death (for example, poisoning). The “hard” methods include hanging, shooting with a firearm, or jumping from a height (they give a greater guarantee of effectiveness) [37].

The difference between the number of suicides in men and women in a given country results from i.a. the selection of the suicide method. Men tend to choose more violent methods [38]. The analysis of WHO data reveals that hanging plays a dominant role in Eastern European countries. The highest rates of such suicide methods were observed in Estonia, Lithuania, Latvia, Belarus, Poland, and Hungary, both for women and men [22]. Firearms seem to dominate in the United States of America, just as in Argentina, Uruguay, and Switzerland. Jumping from a height plays a significant role in large urban agglomerations, such as Hong Kong, Luxemburg, and Malta.

Lester indicates large cultural differences as having an impact on the selection of the suicide method and its cause [39]. Pesticide poisoning dominates in rural populations of Latin America – Nicaragua and Peru. In Salvador, this method of suicide is chosen more often by women than by men. A similar trend was observed for Canadian, Scandinavian, and British women when it comes to using drugs to attempt suicide [40, 41].

The studies indicate that the site of e.g. pesticide poisoning correlates with the development level of a given country and the income of its population. There are approx. 370,000 suicides by pesticide poisoning worldwide each year, which accounts for more than one third of all those who died by suicide. The percentage of suicides involving this method ranges from 4% in Europe to up to 56% in the Western Pacific region. It is therefore used more often in countries with low or moderate income [42].

The literature indicates that mental diseases/disturbances are the main factors for the decision to attempt suicide in adults [43]. They dominated among the reasons for those who died by suicide – 14,306 cases (14.9%). In 48,508 cases (50.6%), i.e. approx. half of the total number of suicide deaths (95,721), it was impossible to establish the underlying reason.

A correlation between alcohol consumption and suicidal behaviour is noticeable [44]. Alcohol may lead to suicide by i.a. increased impulsiveness, or it can become an agent for alleviating stress associated with attempted suicide [45].

In Poland, as well as in other European countries, suicides present a clear seasonal nature. The greatest number of suicide attempts and suicide deaths are observed at the turn of winter and spring. The critical day for such events is Monday. Similar results were observed in Japan [46], the USA [47], Russia [48], and Australia [49, 50].

The preventive activities, although they deserve the greatest recognition, are still insufficient to reduce the number of suicides in Poland. The key factors seem to be the introduction of the Polish Strategy for the Prevention of Suicide, similarly to many other countries in the world, and increasing prevention at the lowest level through greater support for the activities of healthcare professionals, psychologists, and psychiatrists. At the 1st Suicidological Congress in March 2018, a declaration was prepared containing 6 basic assumptions of the Polish Strategy for Suicide Prevention: ensuring quick access to help people in mental crisis, improving access to treatment for people with mental problems, registration, monitoring, and research, education of professional groups, which are the first helpline in situations of mental crisis (healthcare workers, emergency telephone number 112 and helplines, teachers and educators, policemen, firemen, social

workers, and clerics), cooperation with the media, and limiting access to suicide methods.

## Conclusions

A systematic increase in the number of suicide attempts has been observed in Poland, while the number of suicide deaths is gradually decreasing. Therefore, the difference between the 2 is increasing. The above-mentioned situation requires the creation of a system of psychological and medical care for these people. The extent of suicide is underestimated in Poland, i.a. due to the use of the above-mentioned “soft methods”, which are either not registered or incorrectly categorised, and due to lack of a coordinated way of collecting data. There are differences between statistical data presented by the CSO and the NPH. We therefore propose developing a new, unified method of collecting data about suicides, which could prove helpful in developing prevention programmes. Despite these problems in collecting reliable data, our research highlights the following main problems:

- anomie (according to Durkheim’s typology) is the dominant type of suicide in Poland, which is associated with profound political, economic, and social changes. This especially applies to people at risk of losing their jobs and the unemployed,
- male suicide attempts dominate in Poland, and they are characterised by higher mortality than female suicide attempts. The number of female suicide attempts is relatively constant, while the number of male suicide attempts shows greater variation. There is 1 female death to every 6 male deaths. An increase in the number of female suicide attempts has been observed since 2012,
- the greatest number of suicide deaths is observed for people aged 45–54 years. It should be noted that there is an increase in the number of suicide deaths in people over 70 years of age. Despite the dramatic increase in the number of suicide attempts in young people (up to 24 years of age), a downward trend in the number of suicide deaths is observed,
- the greatest number of suicides in Poland occur on Monday. This applies both to suicide attempts and suicide deaths. A downward trend in the number of deaths from Tuesday to Saturday is observed, while there is another increase in the

number of suicides occurring on Sunday (data obtained for the period between 1999 and 2018). Data concerning suicide attempts are slightly different because they most frequently occur on Mondays, Tuesdays, and Sundays,

- the most common methods of attempted suicide in the studied period of 30 years were hanging, jumping from a height, and poisoning. There is a noticeable increase in the number of suicides involving firearms,
- in most cases, the state of mind of the suicide at the moment of taking their own life was not registered. The incomplete NPH data suggest that around 18% of suicides occurred under the influence of alcohol or another psychoactive substance. It is therefore necessary to introduce examinations for the presence of narcotic agents in blood and urine samples collected during an autopsy into the medico-legal practice of chemical and toxicological examinations,
- educational programs addressed both to specialists and to the general public should take into account the issues of counteracting the phenomenon of suicides.

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