The suicides among the Romanian police and public safety personnel in the period 2016-2021

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ABSTRACT. There is an important concern of public and professional organizations in the police and public safety sector to identify the best practices for suicide risk management, especially in USA. The suicide phenomenon from 2016 to 2021 at the level of the Ministry of Internal Affairs of Romania[2], captured through the annual suicide rates, varied positively or negatively compared with the annual suicide rates from Romania and with those at the level of institutions with a similar activity profile from the international level, from the USA and Italy. Based on the socio-demographic data available, the self-murderers' profiles at the level of MIA were created, but in their use, the particular aspects of the suicidal phenomenon must be considered. The self-murderers from the Romanian police and public safety institutions used firearms in 45.7% of the cases during the analyzed period. The algorithm used to predict the annual suicide numbers in the period 2022-2025 at the MIA level revealed that they will follow an increasing trend. In the period 2016-2021, the annual number of suicides among Romanian police and public safety personnel was higher than the number of deaths among the same personnel caused by accidents during service and assaults.

Keywords: suicide, police and public safety institutions, suicide prevention

INTRODUCTION

Suicide is an important global public health problem, ranked among the top twenty leading causes of death worldwide, causing around 800,000 deaths annually, and resulting in more deaths than those caused by malaria, breast cancer, war, homicide (World Health Organization, 2019), and motor vehicle accidents (CDC, 2014, and WHO, 2012, as cited by Franklin et al., 2016).

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[2] Hereinafter referred as MIA

Suicides and mental health problems that cause them have a significant negative effect on the productivity and well-being of workers (World Health Organization, 2006). Each death by suicide provokes a chain reaction, estimated to affect profoundly at least 6 to 14 relatives and close friends, and beyond the immediate group of family members and close friends, up to 135 people are in some sense affected by a single suicide (Westerlund, Hökby, & Hadlaczky, 2020).

Suicide is the most serious consequence of failure to treat mental disorders because post-traumatic stress syndrome, depression, and alcohol abuse are often present before suicide, each of these being associated with the opportunity to provide potentially life-saving treatment (Heyman, Dill and Douglas, 2018).

Age-standardized suicide rates estimated by the World Health Organization (2019) were, in 2016, 10.5 per 100,000 inhabitants worldwide and 12.9 per 100,000 inhabitants in Europe. The average annual suicide rate in Romania was 8.98 per 100,000 inhabitants in the period 2016-2021.

Suicide rates vary across occupational groups based on unique daily stressors that are characteristic of them, greater exposure to intensely stressful or violent incidents that can cause post-traumatic stress disorder, or rapid access to lethal means of suicide, such as firearms, drugs (in lethal doses) or pesticides (World Health Organization, 2006).

US law enforcement personnel are 54% more likely to die by suicide than all ordinary occupation decedents (Violanti & Steege, 2021). Suicide rates for police officers (including police and prison personnel) in the US, taken or calculated based on available data, are as follows:

- in 2016, there were 108 suicides among police officers, which means a suicide rate of 12 per 100,000 police officers (Heyman et al., 2018), and the overall suicide rate in the US was 13.4/100,000 (NIMH, n.d.);

- in 2017, there were 140 police suicides in the US (an increase of about 30% compared to 2016) (Heyman et al., 2018), which means a suicide rate of 15.55 per 100,000 police officers, and the overall suicide rate in the US was 14/100,000 (NIMH, n.d.);

- in 2018, there were 167 suicides among US police officers (Police Research Forum, 2019), which implies an estimated suicide rate of 18.55 per 100,000 police officers, and the overall suicide rate in the US was 14.2/100,000 (NIMH, n.d.);

- in 2019, there were 239 suicides among US police officers (Perine, 2021), which corresponds to an estimated suicide rate of 26.55 per 100,000 police officers, and the overall US suicide rate was 13.9/100,000 (NIMH, n.d.);

- in 2020, there were 116 suicides among police officers in the US (Nissim et al., 2022), which implies an estimated suicide rate of 12.88 per 100,000 police officers, and the overall suicide rate in the US was 13.5/ 100000 (NIMH, n.d.);

- in 2021, there were 61 suicides among US police officers (Nissim et al., 2022), which means an estimated suicide rate of 6.77 per 100,000 police officers.

Garbarino et al. (2021) presented the following data on suicides in the Italian State Police, which has a personnel of approximately 100,000 people aged between 25 and 65 years: 14 persons committed suicide in 2015, 7 in 2016, 13 in 2017, 10 in 2018, 18 in 2019, and 12 in 2020. In 2021, 8 cases of suicide were registered among Italian State Police personnel (Aumento alarmante dei suicidi "in uniform", 2022).

Maselli et al. (2022) stated that the mean annual suicide rate in the Italian State Police from 2016 to 2021 was 10.7 per 100,000 persons (95% CI = 9.54 – 11.86), the mean annual suicide rate between 2016 and 2019 was 12.10 per 100,000 persons (95% CI = 10.86–13.34), and the mean suicide rate between January 1, 2020, and October 31, 2021, was 7.88 per 100,000 persons (95% CI = 4.97–10.79).

According to data from high-income countries (that includes also Romania), where approximately 28% of all global suicides occurred, the hanging is used in 50% of suicides, and the use of firearms is the second most common method, used in 18% of suicides (World Health Organization, 2014). Among US law enforcement personnel, approximately 80 - 90% of suicides involved the officer's firearm (Violanti, 1996, 2007; Violanti & Aron, 1995, as cited by Chae & Boyle, 2013). In a study of suicides among police officers in the Italian State Police from 1995 to 2017, Grassi et al. (2019) found that suicide was committed using a firearm in 87.46% of cases (firearm service was used in 81.92% of cases and personal firearm in 5.54% of cases), and hanging was used in 7.01% of cases. At the level of the French National Police, in a study that covered all police suicides from 2008, Encrenaz et al. (2016) found that the firearm was used in more than half of the cases, 32 (65.3% of the total cases), the service firearm was used in 27 cases (55.1%) and the personal firearm in 5 cases (10.2%), 13 (26.5%) police officers hanged, and 4 (8.2%) used other methods.

The COVID-19 pandemic could have increased the number of suicide deaths due to affecting vulnerable groups through specific mechanisms such as increased anxiety, depression, alcohol use, or feeling trapped due to isolation, uncertainty, domestic violence, increased economic difficulties, and reduced social opportunities (Leske et al., 2021). However, the available data to date indicates that the COVID-19 pandemic has not increased suicide rates, as might have been expected, but acted in the opposite direction, both at the general population level, as revealed by Appleby (2021), and at the level of police officers, according to the results of research carried out by Garbarino et al. (2021) and Maselli et al. (2022).

The number of police officers who died by suicide each year in the United States (167 verified suicides in 2018) exceeds the number of those who are criminally or accidentally killed (55 criminally and 51 accidentally killed in 2018) (Police Research Forum, 2019). This situation suggests that mental health and well-being are an integral part of the police safety and well-being continuum and are essential to prevent their suicide (idem).

Being the state of research on suicide above mentioned and the lack of research about suicide of the Romanian police and public safety personnel, the present article aims to answer to the next research questions:

• What were the size and evolution of the suicide phenomenon during the period 2016-2021 at the level of the MIA personnel and the four major structures personnel, the Romanian Police, the Romanian Gendarmerie, the Romanian Border Police, and the Inspectorates for Emergency Situations?

• How did the suicidal phenomenon evolve at the level of the MIA personnel and its four large component structures during the Covid-19 pandemic compared to the previous period?

• What will be the likely evolution of suicide among the personnel of the MIA and the Romanian Police in the period 2022-2025?

• What were the methods of suicide used by the personnel of the MIA and its four large component structures in the period 2016-2021?

• Is the number of suicides higher/smaller than the number of deaths due to accidents and assaults at the MIA level in the period 2016-2021?

METHOD

Data

The data about the number of suicides from 2016 to 2021 at the level of four large structures with field missions/activities of the MIA, the Romanian Police, the Romanian Gendarmerie, the Romanian Border Police, and the Inspectorates for Emergency Situations, the suicide methods and the socio-demographics of the self-murderers (sex, professional body, type of activity carried out – field/support, age category) were provided by the mentioned large structures. The data related to the MIA as a whole was obtained based on the data from the four large structures mentioned previously. Also, data on the number of deaths as a result of work-related injury or assault were obtained from the same sources.

The data on the number of suicides in Romania between 2016 and 2021 was provided by the National Institute of Statistics from Romania.

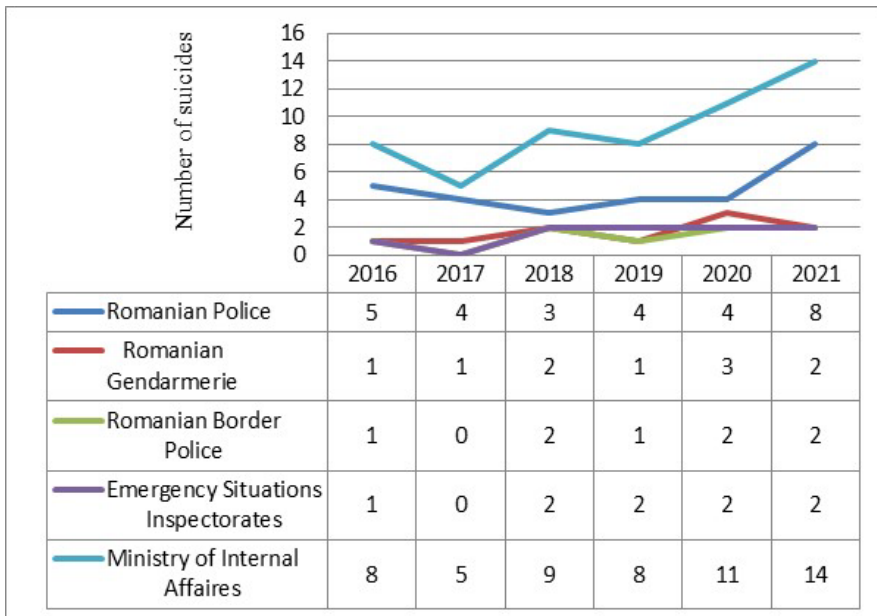Data on police suicide in other countries were collected from the scientific literature or public sources.

Analysis

Suicide rates per 100,000 people were calculated for each year from 2016 to 2021. The calculated suicide rate was crude and obtained by dividing the number of suicides in a specific group/population by the number of people in the respective group/population, and the result was multiplied by 100,000.

To predict the evolution of the suicidal phenomenon based on the data available was used the Forecast Sheet tool from Microsoft Excel 2016, that applies FORECAST.ETS function, based on the AAA version of the Exponential Smoothing (ETS) algorithm.
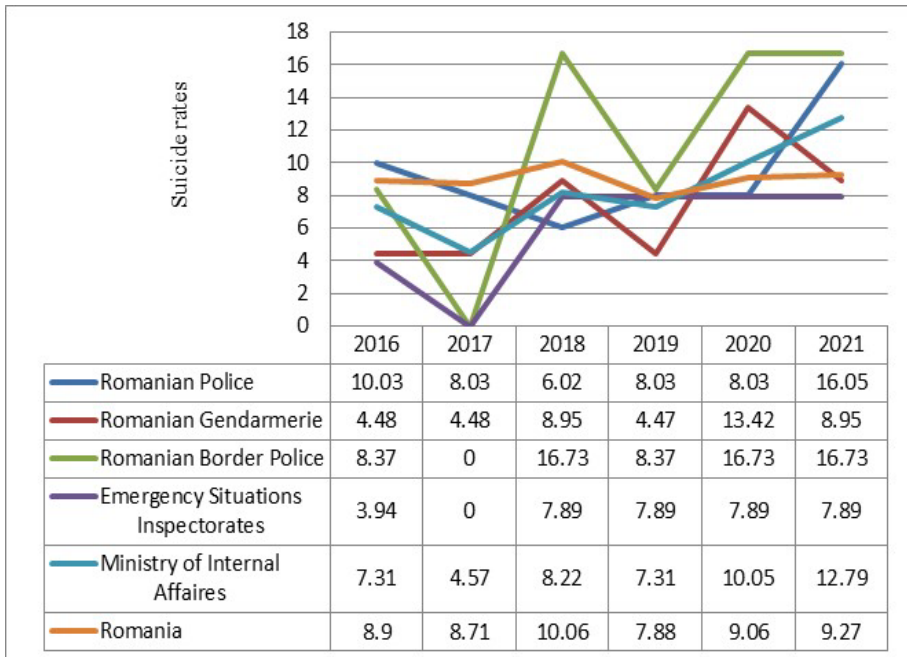
RESULTS

The annual numbers of suicides at the level of MIA and each of its large component structure are presented in Figure 1.

	2016	2017	2018	2019	2020	2021
Romanian Police	5	4	3	4	4	8
Romanian Gendarmerie	1	1	2	1	3	2
Romanian Border Police	1	0	2	1	2	2
Emergency Situations Inspectorates	1	0	2	2	2	2
Ministry of Internal Affaires	8	5	9	8	11	14

Figure 1. The evolution of the number of suicides at the level of MIA and each of its large component structure in the period 2016-2021

During the entire analyzed period, most suicides occurred among the Romanian Police personnel (50.9%). In the other 3 structures, the annual numbers of suicides were lower, relatively similar. The annual modal numbers of suicides during the analyzed period were: 4 in the Romanian Police, 1 in the Romanian Gendarmerie, 2 in the Romanian Border Police, 2 in the Emergency Situations Inspectorates, and 8 in the MIA. The most suicides among MIA personnel during the analyzed period were committed in 2021, and the fewest in 2017.

To facilitate the comparison of data between structures and the understanding of their meaning, Figure 2 shows the evolution of the annual suicide rates during the analyzed period at the level of the MIA, the large component structures, and of Romania.

	2016	2017	2018	2019	2020	2021
Romanian Police	10.03	8.03	6.02	8.03	8.03	16.05
Romanian Gendarmerie	4.48	4.48	8.95	4.47	13.42	8.95
Romanian Border Police	8.37	0	16.73	8.37	16.73	16.73
Emergency Situations Inspectorates	3.94	0	7.89	7.89	7.89	7.89
Ministry of Internal Affaires	7.31	4.57	8.22	7.31	10.05	12.79
Romania	8.9	8.71	10.06	7.88	9.06	9.27

Figure 2. The evolution of suicide rates in 2016-2021 at the level of the MIA, its large component structures, and of Romania

Broadly speaking, annual suicide rates show a slightly upward, oscillating trend in the analyzed period. At the level of the Romanian Border Police, although the annual numbers of suicides are low, the suicide rates are the highest among the four large structures that are components of the MIA in the period 2018-2021. Compared to the other structures, the Romanian Police
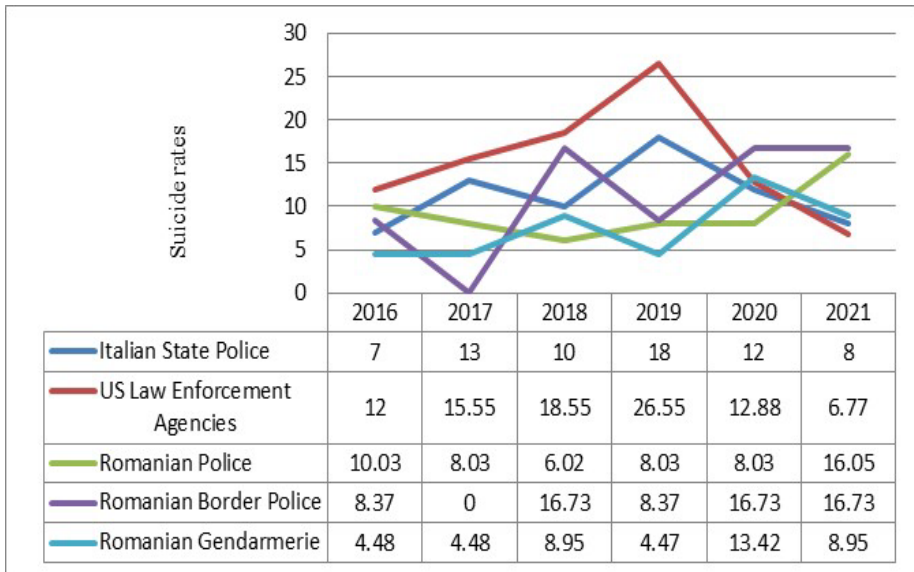
had the highest suicide rates in 2016 and 2017, and a high rate in 2021, the highest annual suicide rate among its personnel in the analyzed period, and the Romanian Gendarmerie has a higher suicide rate in 2020.

Compared to the annual suicide rates from Romania, those at the MIA level were in most years of the analyzed period lower, more precisely in the period 2016-2019, and in the period 2020-2021, in which the Covid-19 pandemic was declared by the World Health Organization, they show higher values. A more important increase in the suicide rate at the level of the MIA occurs in 2020 due to the strong increase in the suicide rates compared to the previous year at the level of the Romanian Gendarmerie and the Romanian Border Police, as well as in 2021 due to the doubling of the suicide rate compared to the previous year at the level of the Romanian Police and due to the maintaining a high suicide rate at the level of the Romanian Border Police.

The comparison of annual suicide rates from the pre-pandemic period of Covid-19, 2016-2019, and from the pandemic period, 2020-2021, reveals that:

- at the MIA level, suicide rates increased during the pandemic compared to those in the pre-pandemic period;

- at the Romania's level, in general, suicide rates increased during the pandemic period compared to those in the pre-pandemic period, except the 2018 year, when the suicide rate had the highest value from the analyzed period;

- at the level of the Romanian Police, the suicide rate from 2020 was similar to that of the previous year, and in 2021 the suicide rate increased significantly, having the highest value at the level of the respective structure during the analyzed period;

- at the level of the Romanian Border Police, suicide rates increased during the pandemic period compared to those in the pre-pandemic period, except the rate from 2018 that was equal to the suicide rates during the pandemic period;

- at the level of the Romanian Gendarmerie, suicide rates increased during the pandemic compared to those in the pre-pandemic period, except in 2021 when the suicide rate was equal to that of 2018, with 2020 being the highest suicide rate during the analyzed period at the level of the respective structure;

- at the level of the Inspectorates for Emergency Situations, suicide rates had the same value in the period 2018-2021.

To better understand the significance of the annual suicide rates at the level of Romanian law enforcement institutions during the analyzed period, these are presented in Figure 3 alongside the annual suicide rates at the level of some similar institutions from abroad.

	2016	2017	2018	2019	2020	2021
Italian State Police	7	13	10	18	12	8
US Law Enforcement Agencies	12	15.55	18.55	26.55	12.88	6.77
Romanian Police	10.03	8.03	6.02	8.03	8.03	16.05
Romanian Border Police	8.37	0	16.73	8.37	16.73	16.73
Romanian Gendarmerie	4.48	4.48	8.95	4.47	13.42	8.95

Figure 3. The evolution of suicide rates in the period 2016-2021 at the level of law enforcement institutions from Romania and of similar institutions from USA and Italy

The annual suicide rates from US law enforcement agencies, police and prisons institutions, were higher than those from the Romanian law enforcement agencies up to 2019, inclusive. In the period 2020-2021, the annual suicide rates from US law enforcement agencies were:

- compared to that of the Romanian Police, higher in 2020 and lower in 2021;
- compared to that of the Romanian Border Police, lower in both years;
- compared to that of the Romanian Gendarmerie, lower in both years.

The suicide rates from the Italian State Police were higher than those of the Romanian Police between 2017 and 2020, while in 2016 and 2021 the respective rates were lower.

In 2021, compared to 2020, at the level of Romanian Police personnel, the suicide rate increased sharply, although all the suicide rates at the level of the other institutions presented in the previous figure decreased or remained constant.

At the level of the Romanian Border Police, the sharp increase in suicide rates occurred in 2018, later it decreased, and in 2020 there was a sharp increase again, which remained at the same level in 2021. In the last two aforementioned years, the annual suicide rates from the level of the Romanian Border Police were higher than similar rates from the Italian State Police and US law enforcement

agencies. In 2018, the suicide rate at the level of the Romanian Border Police was higher than the similar rate at the level of the Italian State Police, but lower than the suicide rate at the level of US law enforcement institutions. At the level of the Romanian Gendarmerie, there was a sharp increase of the suicide rate in 2020, which decreased in 2021, in both mentioned years, the suicide rates being higher than those in the mentioned international law enforcement institutions.

The vast majority of MIA personnel who committed suicide were:

- male, 94.55% throughout the entire analyzed period, in 4 years, 2016, 2017, 2019, and 2020, self-murderers being only male.

- from the body of police agents/non-commissioned officers/military foremen, 85.45% in the entire analyzed period, in 3 years, 2017, 2019, and 2020, self-murderers being exclusively included in this professional body.

- among those who carried out a field activity, 83.64% in the entire analyzed period, in 3 years, 2016, 2019, and 2020, the self-murderers carrying out only this type of activity.

- from the category of those aged between 31 and 40, 32.73%, and aged between 41 and 50, 36.36%. There were no suicides among those under the 20 years, between the 21 and 30 years in 2016 and 2018, and over 50 years in 2017, 2019, and 2020.

To commit suicide, the vast majority of self-murderers among MIA personnel used hanging (50.9%) or shooting (38.2%).

Based on the number of suicide cases among the MIA personnel from 2016 to 2021, the prediction of the annual number of suicide cases in the years 2022 to 2025 was made, and the results are presented in Table 1.

Table 1. The results of the prediction of the number of suicide cases
from the MIA level in the period 2022-2025

Year	Value	Predicted value	Lower bound of the 95% confidence interval	Upper bound of the 95% confidence interval
2021	14	14	14.00	14.00
2022		14.81	10.46	19.17
2023		16.39	11.52	21.25
2024		17.96	12.62	23.29
2025		19.53	13.76	25.30

A continuous upward evolution of the predicted number of suicide cases at the MIA level is observed between 2022 and 2025. In the optimistic version, indicated by the values of the lower bound of the 95% confidence interval, after a clear decrease in 2022, a slightly upward evolution is possible of the annual number of suicides, but with values lower than the number of suicides from 2021.

The results of the prediction of the annual numbers of suicide cases in the years 2022-2025 at the level of Romanian Police personnel are presented in Table 2.

Table 2. The results of the prediction of the number of suicide cases
at the level of the Romanian Police in the period 2022-2025

Year	Value	Predicted value	Lower bound of the 95% confidence interval	Upper bound of the 95% confidence interval
2021	8	8	8.00	8.00
2022		8.28	4.96	11.60
2023		8.90	4.42	13.37
2024		9.51	4.13	14.89
2025		10.13	3.96	16.29

The predicted evolution of the number of suicide cases between 2022 and 2025 at the level of the Romanian Police has a slightly continuous upward trend. In the optimistic version, the evolution of the number of suicides will be strongly downward in 2022 and then relatively stagnant.
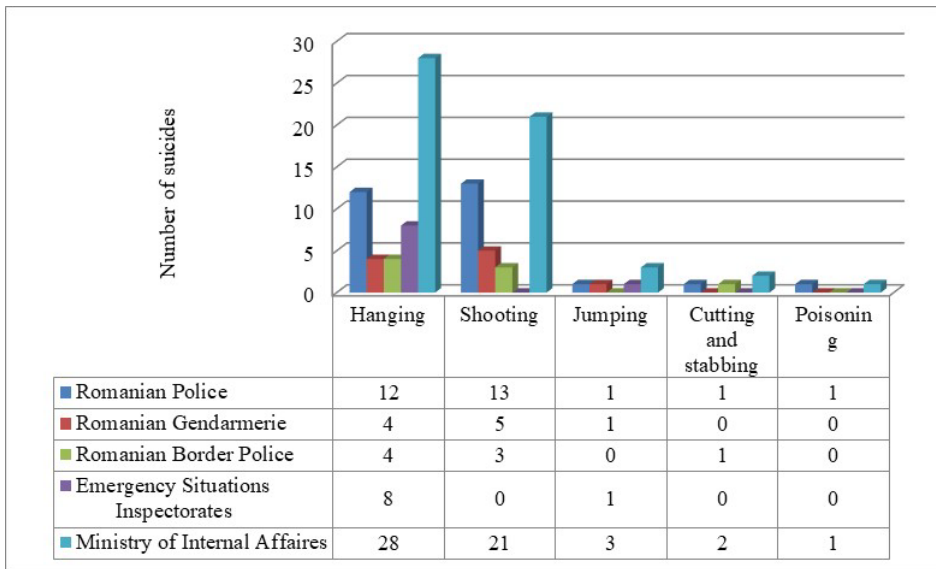
The situation of deaths among MIA personnel during the period 2016-2021 following suicide, work-related accidents and assaults is presented in Table 3.

Table 3. The situation of deaths among MIA personnel in the period 2016-2021
as a result of suicide, work-related accidents and assaults

Year	Number of suicide cases	Total number of persons deceased in occupational accidents and assaults
2016	8	4
2017	5	4
2018	9	1
2019	8	2
2020	11	1
2021	14	2

In every year of the analyzed period, at the level of the MIA personnel, there was a higher number of deaths by suicide than as a result of accidents during the execution of the service and of assaults.

The methods of suicide used by the MIA personnel during the period 2016-2021 are presented in Figure 4.

	Hanging	Shooting	Jumping	Cutting and stabbing	Poisoning
Romanian Police	12	13	1	1	1
Romanian Gendarmerie	4	5	1	0	0
Romanian Border Police	4	3	0	1	0
Emergency Situations Inspectorates	8	0	1	0	0
Ministry of Internal Affaires	28	21	3	2	1

Figure 4. Methods of suicide used by the MIA personnel and component structures personnel during the period 2016-2021

At the MIA level, the most used method of suicide was hanging, in 50.9% of cases, and the second most frequent, in descending order, was shooting, in 38.2% of cases.

The shooting was the most used method of suicide at the level of the Romanian Police, in 46.4% of the cases, and at the level of the Romanian Gendarmerie, in 50% of the cases, and was in second place in terms of frequency of use in the case of the Romanian Border Police, in 37.5% of cases. At the level of the Inspectorates for Emergency Situations, no person committed suicide by shooting.

The hanging was the most frequently used method at the level of the Inspectorates for Emergency Situations, in 88.9% of the cases, and at the level of the Romanian Border Police, in 50% of the cases.

DISCUSSION

In most of the years of the analyzed period, the suicide rates among MIA personnel were lower than those from Romania, more precisely in the period 2016-2019, and in the period 2020-2021, when the Covid-19 pandemic was declared by the World Health Organization, they had higher values. The increase of the annual suicides rate among MIA personnel in the pandemic period compared with the pre-pandemic period was consonant with the same evolution in the annual suicide rates from Romania, although the annual suicide rates presented of the international law enforcement institutions personnel had continuously decreased during the Covid-19 pandemic compared to the pre-pandemic period. Compared to the year 2020, in the year 2021, at the level of Romanian Police personnel, the suicide rate increased sharply, although all the suicide rates presented from the level of the other law enforcement institutions, at the Romania and international level, decreased or remained at the same level.

The evolution of annual suicide rates is relatively unpredictable, from year to year might appear both more or less accentuated decreases, which are welcomed, as well as accelerated increases, such as a 100% increase in the annual number of suicide cases among Romanian Police personnel in 2021 or the increase of the US law enforcement suicide rate from 18.55 in 2018 to a rate of 26.55 in 2019.

The algorithm used to predict the annual suicide rates in the period 2022-2025 revealed that the annual number of suicide cases will follow an increasing trend at the level of the MIA and a slightly increasing trend at the level of the Romanian Police.

The suiciders from the MIA law enforcement institutions used the firearm, a method with high lethality, in 45.7% of the cases during the analyzed period while the data available reveal that at the level of the international law enforcement institutions, from USA, Italy, and France, the personnel who used this method for suicide was between about 65% - 90% of the total number of suiciders.

In the period 2016-2021, the annual number of suicides among MIA personnel was higher than the number of deaths caused by accidents during service and assaults, a situation similar to that reported in the USA by the Police Research Forum (2019), which indicates that suicide is a real occupational risk.

CONCLUSIONS

The analysis of the annual suicide rates among MIA personnel in the period 2016-2021 revealed the fact that, compared to the annual suicide rates in the same period from Romania and from the level of some international law enforcement institutions, they had oscillating values, lower or higher. This situation is valid both at the level of the MIA and of the large structures within, except the annual suicide rates at the level of the Inspectorates for Emergency Situations, which are lower compared to the vast majority of suicide rates available.

The algorithm used to predict the annual suicide rates in the period 2022-2025 revealed that the number of suicide cases will follow a general trend of growth among MIA personnel.

In the period 2016-2021, the annual number of suicides among the MIA personnel was higher than the annual number of deaths caused by accidents during the service and assaults.

Taking into account issues such as those previously mentioned, as well as the effects of suicide that manifest at the level of the suicide's family, colleagues, and organization, it is necessary to manage carefully the suicide risk among MIA personnel, which must be based on detailed and updated data about suicide cases and attempts, as well as about the risk and protective factors for suicide among personnel, ideally obtained through psychological autopsies.

Limitations

One of the limitations of this study is that the data and information on suicides at the MIA level during the analyzed period were not collected based on a specially developed methodology, which would involve both standard rules and the mandatory reporting of all events that fall within a definition of suicide.

Another limitation of the study is that it cannot present an in-depth picture of the suicidal phenomenon in MIA containing possible explanations for it because there were no detailed data on the suicide cases committed during the analyzed period, regarding both the suicide itself and the particular risk and protection factors at the person level, workplace, and social environment.

Practical Implications

Following a careful opportunity and cost-benefit analysis, the actions like following can be implemented to manage suicidal risk at the level of MIA:

- Training of psychologists from the MIA level to prevent, intervene and post-vent in the issue of suicide;

- The training of psychologists from the MIA level as trainers to prevent and post-vent in the issue of suicide for the staff who provide peer support and for those with management positions;

- Development of a database related to suicides/suicide attempts from the level of MIA staff and its permanent updating;

- Development of a methodology for performing psychological autopsies in case of suicide/suicide attempt;

- Carrying out psychological autopsies in case of suicide/suicide attempt;

- Periodic analysis of data related to the suicidal phenomenon from the level of MIA staff/MIA structures;

- Elaboration and implementation of universal suicide prevention programs at the level of the entire staff;

- Elaboration and implementation of selective prevention programs at the level of groups exposed to the risk of suicide;

- Development and implementation of prevention programs indicated for people exposed to a high risk of suicide;

- Training non-specialist personnel in the field of psychology/mental health to recognize the warning signs of the immediate risk of suicide in a person and regarding the way of action in such situations;

- Elaboration of a guide on postvention activities following suicide among MIA staff;

- Conception and implementation of a peer support system;

- Designing and implementing a system of recuperative psychological intervention, including remotely, for staff with mental health problems;

- Reorganization of the psychology structure from the MIA level to avoid multiple professional relationships, more precisely to ensure that psychologists do not carry out psychological assessments completed with psychological results such as fit or unfit/psychological reports and psychological interventions at the level of the same person beneficiaries.

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