THE PROFILE OF THE PRISONER WITH DELIBERATE SELF-HARM BY SUBSTANCE ABUSE

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Abstract

This paper aims to define the socio-demographic characteristics of inmates who used chemical means (drug poisoning and other toxic substances) than those inmates who used physical means and besides those subjects from the general population who used the same method. The following variables were recorded to all patients: sex, age, date of submission (we are interested in the month and day of the week), the schedule when it has been made, the number of autolitic attempts in their antecedents, the psychiatric disorders, the method chosen, if treatment was accepted or rejected and if they required hospitalization or they were outpatients. The average age was the lowest: 25.2 ± 7.6 years (those with self-harm by physical means 28.2 ± 6.8, those of the general population 35.6 ± 14.6). There were no differences in the frequency of relapses between inmates or between inmates and the general population. Regarding the psychiatric antecedents there were no differences between prisoners and the general population. There were significant differences between both categories of prisoners and between prisoners and the general population regarding temporal placement of the act (month, day, time slot). No differences between inmates were registered on treatment acceptance and need for hospitalization. The inmates with substance abuse refuse the treatment to a lesser extent than those in the general population but require less hospitalization than these. It can be concluded that there are significant differences that support the idea that prisoners carrying non-lethal autolitic acts by substance abuse is a different category compared both with those who performed the act in the same way as those of the general population and to prisoners who performed the act through mechanical means. The study needs to be deepened both by extending the monitoring period and the collection and processing of other variables.

Keywords: non-lethal self-injury, deliberate self-harm, substance abuse, suicide attempt

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1. Introduction

Suicide and suicidal equivalence is a public health problem facing all countries, Romania making no exception in this regard. The prison environment is an additional risk factor in raising the frequency of this phenomenon among prisoners compared with the general population. Life in captivity along with the deviant companions very often associated with disciplinary measures unbearable to most people, causes specific features of the autolitic acts in prisons [1]. Thus, on the one hand, we have to do with an increase in those provisions to the general population, on the other hand due to the restriction of access to various resources that may cause injury, the methods used by prisoners may be different [1, 2].

This paper aims to define the socio-demographic characteristics of inmates who used chemical means (drug poisoning and other toxic substances) – considered as substance abuse – achievement of the autolitic non-fatal act compared to inmates who chose to physically produce it (wounds at various levels and/or ingestion of foreign bodies). There is an old collaboration between the Penitentiary of Maximum Security and C.I.R.T.I.T.A. Medical Association which resulted in the conclusion of a written protocol between the two entities, the aim of which patient's attitude towards autolitic shall be the primarily concern at this time. On the other hand we were interested in outlining the differences between them and the patients from the general population who used the same methods of self-harm during the same period.

In this respect, all the patients who developed non-lethal autolitic documents produced by chemical means were included in the study (ingestion of drugs or other toxic substances) and all detained patients who achieved such acts regardless of the chosen method.

2. Materials and methods

From 1 January 2009 to 31 December 2009, 771 patients with autolitic acts were registered in the FEU (First Emergency Unit) of Saint John Emergency Hospital from Iaşi. The group was divided in two: on the one hand patients from the Penitentiary of Maximum Security (N = 175), on the other hand those from the general population. In this second group only those patients achieving an autolitic act by chemical means (drugs or other toxic ingestion) (N = 446) were taken in this study. The patients in state custody were in turn differentiated into two groups: patients who used chemical means (N = 48) and patients who used physical means (wounds and foreign body ingestion) (N = 122). Five detained patients appealed to both physical and chemical means. Their number being too small to be a statistically significant group was excluded from the study.

The following variables were recorded to all patients: sex, age, date of submission (we are interested in the month and day of the week), the schedule when it has been made, the number of autolitic attempts in their antecedents, the

psychiatric disorders, the method chosen, if treatment was accepted or rejected and if he/she required hospitalization or they were outpatients. Data were processed with SPSS 10.0 for Windows, using their descriptive frequency analysis, cross analysis (cross-tabulation analysis), benchmarking the environments (ANOVA, T-test) and as parametric tests – chi-square test.

3. Results

3.1. Comparative results between the prisoners with substance abuse and the prisoners with mechanical autolitic acts

Over this period a total of 175 on record patients in state custody who did deliberate self-harm actions were registered. All of the patients were male. Their age ranged between 18 and 54 years with an average age of 26.69 years and a standard deviation of 7.49 years. Among those who have turned to substance abuse the age also ranged between 18 and 54 years, but with an average of 25.22 years and a standard deviation of 7.69 years while the age of those who have used mechanical means of self-harm varied between 19 and 43 years with a mean of 28.24 years and a standard deviation of 6.84 years. Grouping the patients by age there is a difference in their distribution by type of used media, seen in Table 1, reflected in the highest concentration of patients in the age group below 24 years for those with substance abuse and in the group of 25-34 years for others. The difference is statistically significant, the calculated confidence index being $p = 0.001$.

Table 1. Data cross-tabulation age group/used method.

Age	Substance abuse		Physical abuse	
	N	%	N	%
18-24	21	43.8	17	13.9
25-34	19	39.6	73	59.8
35-44	7	14.6	30	24.6
45-54	1	2.1	2	1.6
Total	48	100.0	122	100

In a higher proportion patients with substance abuse compared to those who use mechanical means in turn that the relapse rate was higher were recorded as the first autolitic attempt. Data regarding the number of relapses are summarized in Table 2. Although there is a difference, there is no statistical significance $p = 0.321$.

Lower differences in frequency analysis fields were recorded regarding the association of psychiatric antecedents. They were found in 29.2% among patients with substance abuse ($N = 14$) and 23% among others ($N = 28$). The data on this variable are summarized in Table 3.

Table 2. Data cross-tabulation relapse/used method.

Autolitic antecedents	Substance abuse		Physically abuse	
	N	%	N	%
first attempt	44	91.7	97	79.5
an episode	3	6.2	14	11.5
two episodes	1	2.1	5	4.1
three episodes	-	-	4	3.3
four episodes	-	-	2	1.6
Total	48	100	122	100.0

Table 3. Data cross-tabulation psychiatric antecedents/used method.

Psychiatric antecedents	Substance abuse		Physically abuse	
	N	%	N	%
absent	34	70.8	94	77
present	14	29.2	28	23
Total	48	100.0	122	100

Data processing by calculations of comparing the circumstances confirm that there are no significant differences between the two groups of patients (p = 0.401).
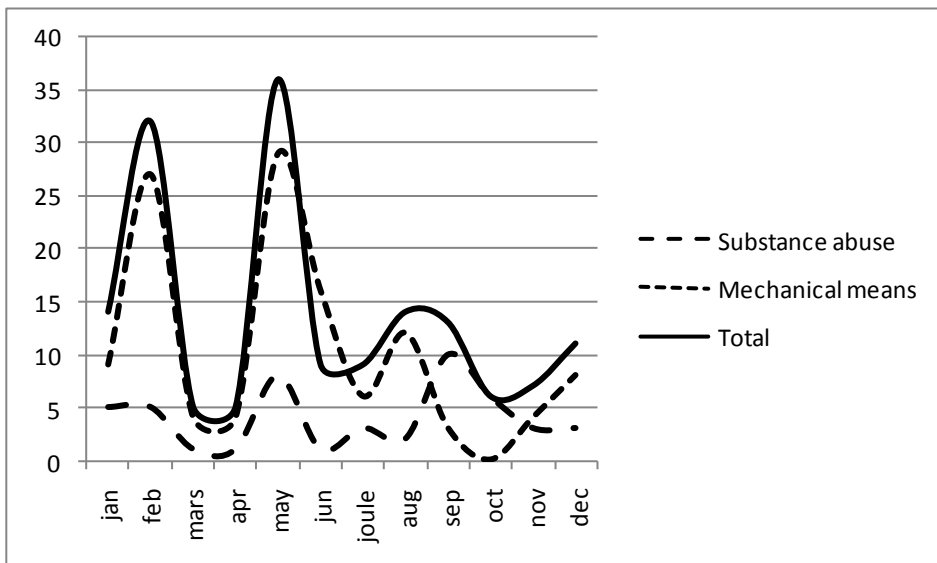

Figure 1. The analysis of submissions per month depending on the chosen method.

Analyzing in parallel the two groups according to the month in which the presentation was made it becomes obvious that two frequency peaks for each category were present (Figure 1). For those with substance abuse in May and

September, and for those who have used mechanical means in February and May. In May there has been a maximum of cases for inmates with egolitic acts. The differences between the two groups were statistically significant, p <0.0001.
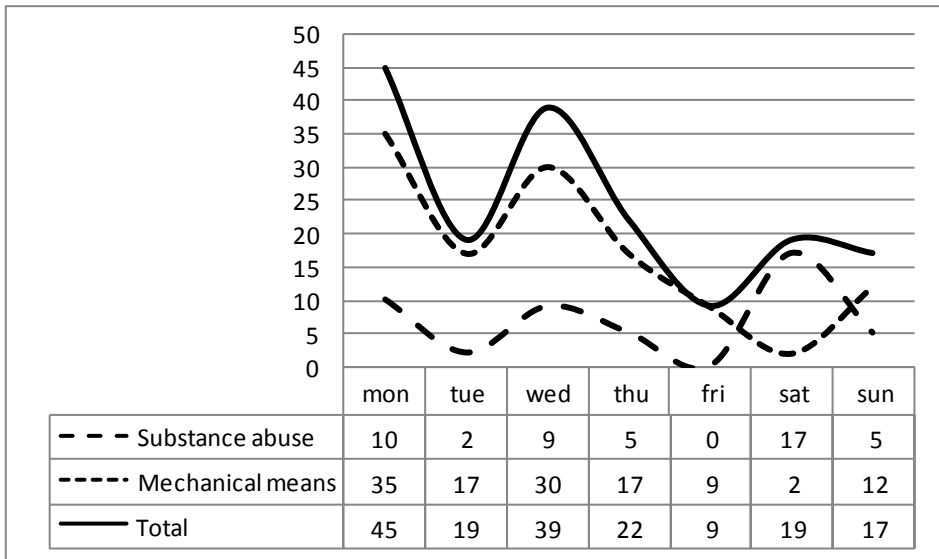

	mon	tue	wed	thu	fri	sat	sun
− − − Substance abuse	10	2	9	5	0	17	5
----- Mechanical means	35	17	30	17	9	2	12
—— Total	45	19	39	22	9	19	17

Figure 2. The analysis of submissions per day depending on the chosen method.

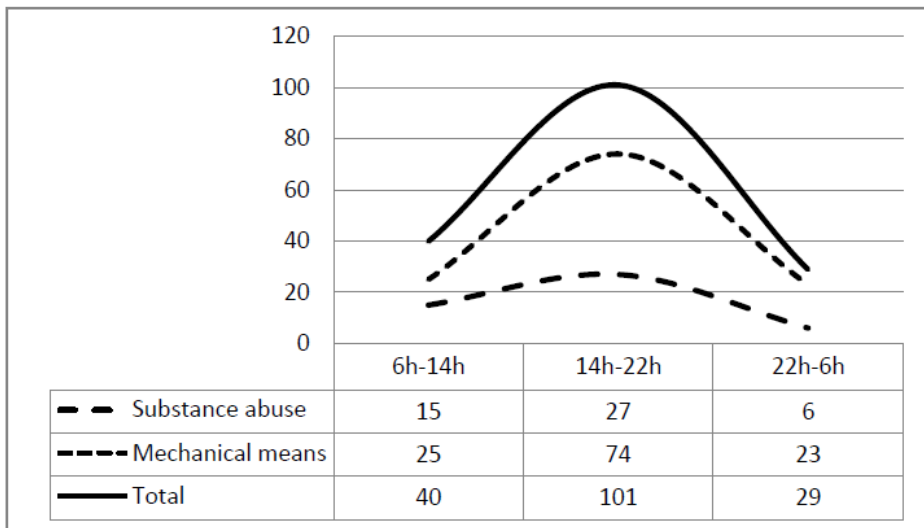|	6h-14h	14h-22h	22h-6h
▬ ▬ Substance abuse	15	27	6
---- Mechanical means	25	74	23
—— Total	40	101	29

Figure 3. The analysis of submissions on hour intervals depending on the chosen method.

Regarding the day of the week in which the presentation was made there is a certain similar distribution on weekdays but with an obvious difference for the weekend (Figure 2). While for those cases with substance abuse there were no cases recorded on Friday and a peak was marked on Saturday followed by a decreasing on Sunday; those with mechanical aggression a minimum was scored on Saturday. The difference presentation during the weekend is statistically significant, the confidence index is $p < 0.0001$.

In Figure 3 the data regarding the hour of presentation for each group and overall are materialized. It is noted that the same type of distribution is the maximum recording time interval 14-22 and fewer in the morning and at night. By comparing the averages calculations it is confirmed the absence of significant differences regarding how the deliberate self-harm and the scheduling during this fact takes place $(p = 0.273)$.

There is a tendency in some patients with autolitic attempts to refuse the treatment. In the group of the confined patients there were 22 such refusals (12.6%) distributed as follows (Figure 4): 6 of those with substance abuse (12.5%) and 16 of those with mechanical self-harm (13.1 %). The difference is small and not statistically significant $(p = 0.915)$.

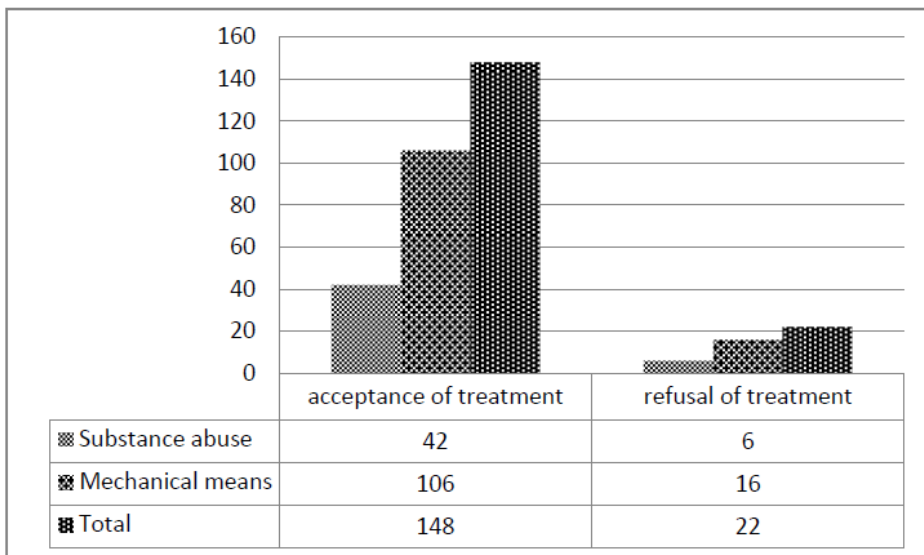|	acceptance of treatment	refusal of treatment
▨ Substance abuse	42	6
▨ Mechanical means	106	16
▨ Total	148	22

Figure 4. The review of the treatment refusal depending on the chosen method.

47.91% (N = 23) of the patients with substance abuse who accepted the treatment could be treated as outpatients, while 39.6% (N = 19) required hospitalization. While patients who used mechanical means were outpatients at a rate of 54.91% (N = 83), those hospitalized were 32% (N = 39). The visible difference in Figure 5 is nearly 9 percent between the two groups, but does not also reach the threshold of the statistical significance $(p = 0.349)$.
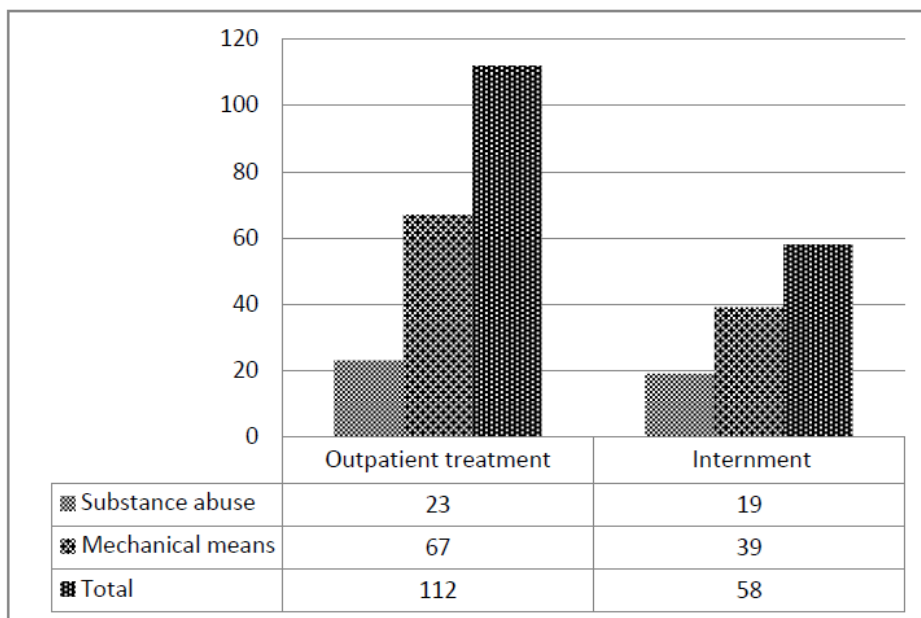
Figure 5. The analysis of the need for hospitalization according to the chosen method.

3.2. Comparative results between the prisoners and the patients from the general population with autolysis by substance abuse

In the same period, 446 patients were registered with deliberate self-harm by ingestion of toxic substances or other drugs. Of these, 60.5% (N = 270) were women and 39.5% (N = 176) were male. Gender distribution differs greatly from the county sex distribution of the population (49% men vs. 51% women) and by applying the chi-square test result it is obtained $\chi = 3.859$ and $\alpha = 0.049$ showing that there is a link between the membership type and incidence of the autolitic attempts by substance abuse.

Table 4. Data cross-tabulation age group/category of population.

Age	Inmates		General population	
	N	%	N	%
to <18 years	-	-	4	0.9
18-24	21	43.8	121	27.1
25-34	19	39.6	109	24.4
35-44	7	14.6	96	21.5
45-54	1	2.1	59	13.2
55-64	-	-	36	8.1
65-74	-	-	16	3.6
≥ 75 years	-	-	5	1.1
Total	**48**	**100.0**	**446**	**100**

The age ranged from 15 to 86 years with an average of 35.67 years and a standard deviation of 14.63 years. Age difference to prisoners has a statistical significance (p = 0.001). The difference is observed in a cross-analysis conducted by age between the two groups of patients (Table 4). It is noted that among the prisoners there were no patients under 18 years and in the age groups over 55 years.

The cross-analysis of data regarding the autolitic relapse of substance abuse show relative figures similar to prisoners and the general population (Table 5), the cross-tabulation is also confirmed by calculating the averages (p = 0.567).

Table 5. Data cross-tabulation relapse/category population

Autolitic antecedents	Inmates		General population	
	N	%	N	%
first attempt	44	91.7	402	90.1
an episode	3	6.2	20	4.5
two episodes	1	2.1	14	3.1
three episodes	-	-	9	2
multiple episodes	-	-	1	0.2
Total	48	100	446	100

Regarding the existence of pre-existing psychiatric disorders (Table 6), a difference statistically significant according to calculated averages and parametric tests (chi square) – p = 0.034 was found present in their higher percentage in the general population (40.8% vs. 59.2%).

Table 6. Data cross-tabulation psychiatric antecedents/population group.

Psychiatric antecedents	Inmates		General population	
	N	%	N	%
absent	34	70.8	264	59.2
present	14	29.2	182	40.8
Total	48	100.0	446	100

Regarding the distribution of presentations throughout the year (Figure 6) it was found that while inmates have undertaken instrument with large differences from one to another with maximum presentations in May and September (16.7% and 20.8%) and minimum in March, April and June (by 2.1%) patients in the general population were registered evenly with a plateau around 12% during the months of March to June and a minimum in February (4.5%), October (4%) and November (2.9%). The differences between groups were statistically significant, p <0.0001.
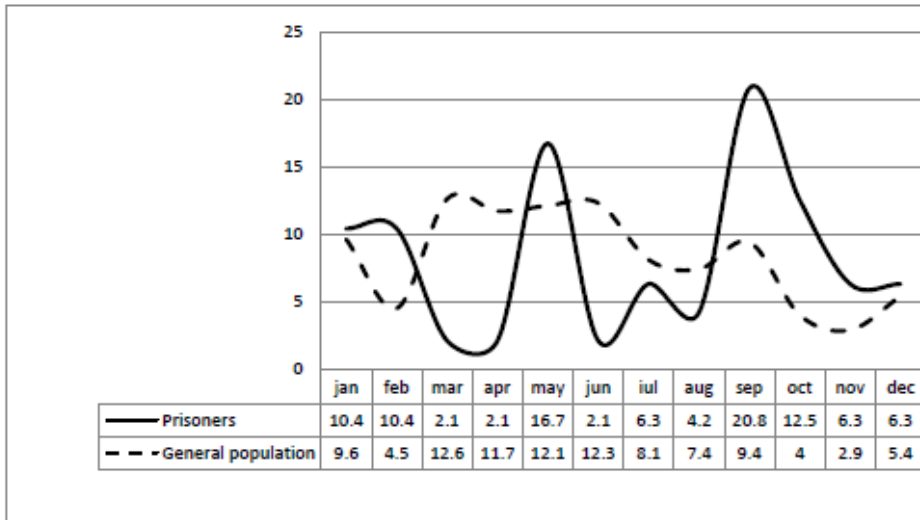
Figure 6. The analysis of monthly presentations by population category.

Analyzing the distribution of patients according to the day of the week in which it is present (Figure 7), we find that while at the detained patients there is a maximum sinusoidal curve type on Mondays, Wednesdays and Saturdays, patients from the general population had a more uniform distribution throughout the week not dropped below the minimum of 10.3% and the maximum of 18.2%. The difference becomes statistically significant by applying parametric tests (p = 0.001)
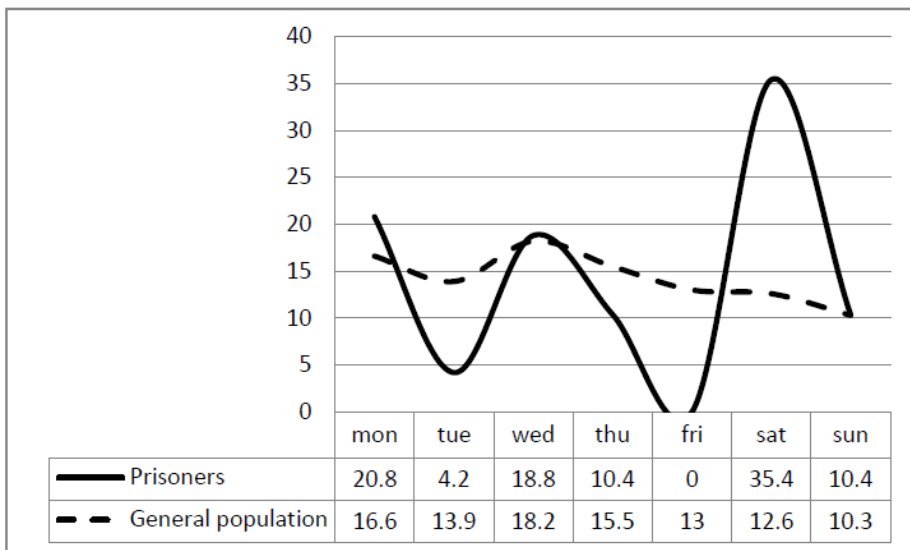

Figure 7. The analysis of submissions per day depending on population category.

The scheduling that was present was also different from prisoners to other patients (Figure 8). Thus, while the first maximum of presentations was made between the hours of 2:22 p.m. (56.3% - N = 27), for others it was reached in the morning, or in the range between 6 and 14 (46.9 % - N = 209). For both categories the minimum of presentations was noted during the night, between 6.22 (12.5% vs. 22.9%). The difference is statistically significant for both overall distribution (p<0.0001) and for each interval in part (range 6-14 - p = 0.018, range 14-22 - p = 0.012, range 6.22 - p = 0.036).

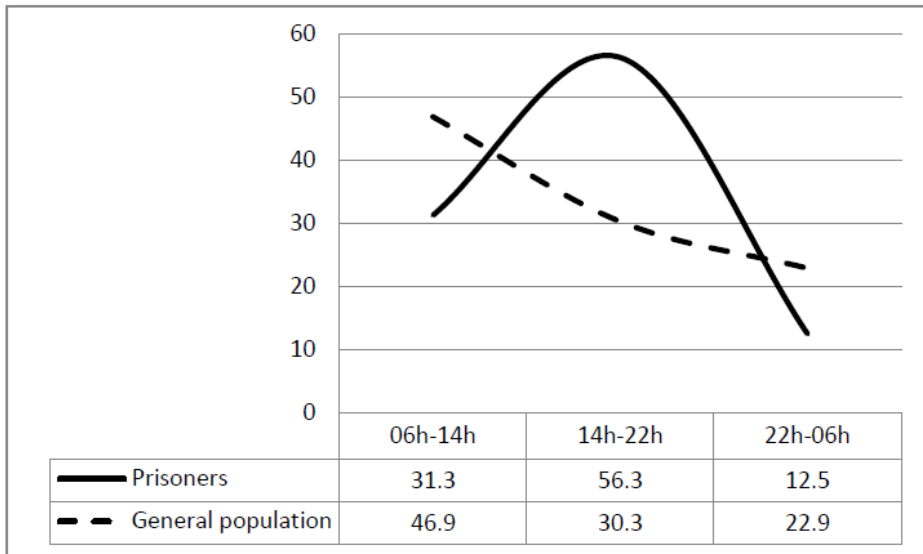|	06h-14h	14h-22h	22h-06h
Prisoners	31.3	56.3	12.5
General population	46.9	30.3	22.9

Figure 8. The analysis of submissions on intervals by population group.

There was a greater tendency to refuse treatment to patients from the population (35.7%, N = 159) versus those in custody (12.5%, N = 6), a statistically significant difference (p = 0.003). Among those who accepted the treatment of the detained patients, (N = 42), 54.76% (N = 23) of them were outpatients, while 45.23% were hospitalized. Meanwhile, the patients from the general population who accepted the treatment (N = 287) had a higher proportion of patients who required hospitalization – 60.27% (N = 173) than those who were outpatients - 39 72% (N = 114). And this difference is statistically significant (p = 0.001).

4. Discussion and conclusions

Non-lethal deliberate self-harm is a behavioural disorder insufficiently systematically studied. The databases regarding the psychological and pharmacological treatment of these patients are insufficient and uncorroborated, as well. Besides producing superficial wounds, the ingestion of mostly drug substances is the most common method of achieving these autolitic acts. Due to

the heterogeneity of defining the notion of non-lethal deliberate self-harm, different authors report different data on the socio-demographic structure of the studied groups.

Thus, in terms of the patient's sex there are some works supporting women's predominance especially those young patients [3, 4] and others arguing for the predominance of the male patients [5, 6] or who have equal incidents for both sexes [7]. In this study, the prisoners were all male, although at the Maximum Security Penitentiary in Iaşi, a less number of women are also present. Approximately, every day there are 1,600 men and 100 women in custody. The records of the detained patients were made on longer periods of time than the present research, yet there was no entry for female patients with autolitic acts. Women predominated in the general population.

The average age of the prisoners with substance abuse (25.2 ± 7.6 years) was lower than the other inmates (28.2 ± 6.8) and especially to that from the general population (35.6 ± 14.6).

Table 7. Summary of differences between categories of the studied subjects.

	General population Substance abuse	Inmates Substance abuse	Prisoners Mechanical means
Average age	35.6 ± 14.6	25.2 ± 7.6	28.2 ± 6.8
Recurrence	9.9%	8.3%	20.5%
Psychiatric antecedents	40.8%	29.2%	23%
Maximum presentations/month	March June	May September	February May
Maximum presentations/day	Wednesday	Saturday	Mondays
Maximum presentation/hour	6-14	14 to 22	14 to 22
Refuse treatment	35.7%	12.5%	13.1%
Require hospitalization	60.27%	39.6%	32%

More papers on this subject establish a close link between the deliberate self-harm and the mental disorders [8-10]. In the studied group, the frequency of these disorders was diagnosed in 24% of prisoners (to a greater extent among those with substance abuse: 29.2% than among those who have turned to mechanical injuries) and 40.8% of patients in the general population. The concern is that the cross-analysis of data on relapse and those relating to the existence of psychiatric history shows that 8 patients in first relapse, 5 in the second and 3 with multiple relapses of patients in the general population were not known with such antecedents. Instead, all the prisoners were registered with relapsed and psychiatric antecedents. This observation leads to the conclusion

that a part of the healthy patients not receiving integrative monitoring system after conducting such an act, on the other hand observed that although medical and psychological prisoners are not sufficiently supervised to prevent relapses, remains a big question mark on their integrative management in the emergency department. This shows a major shortcoming interdisciplinary treatment of the patients with non-lethal autolitic acts and especially to those with light injuries which did not require specific treatment. The deficiency is based on objective reasons, namely that there is a hired psychologist in the hospital, being excluded one of the hospital's emergency department. It is possible that this is due to subjective factors, considering this pathology as a minor consuming and 'unreasonable' time and resources in comparison with other pathologies. There have been differences in the frequency of relapses among prisoners with substance abuse and general population but more often they were the prisoners who use mechanical means. A summary of the differences between the three investigated groups of subjects is shown in Table 7.

It can be concluded that there are significant differences that support the idea that prisoners carrying non-lethal autolitic acts by substance abuse is a different category compared both with those who performed the act in the same way of the general population and to prisoners who performed the act through mechanical means. The study needs to be deepened both by extending the monitoring period and the collection and processing of other variables.

References

[1]   L.M. Hayes, J. Correct Health Care, **18** (2012) 233.
[2]   J.R.Goss, K.Peterson, L.W. Smith, K. Kalb and B.B. Brodey, Psychiatr. Serv., **55** (2002) 574.
[3]   U. Bille-Brahe, A. Kerkhof, D. De Leo, A. Schmidtke, P. Crepet, J. Lonnqvist, K. Michel, E. Salander-Renberg, T.C. Stiles, D. Wasserman, B. Aagaard, H. Egebo and B. Jensen, Acta Psychiatr. Scand., **95(2)** (1997) 81.
[4]   A. Polewka, S. Kroch and J. Chrostek Maj, Przegl. Lek., **61** (2004) 261.
[5]   K. Skogman, M. Alsén and A. Ojehagen, Soc Psych. Psych. Epid., **39** (2004) 113.
[6]   M. Nordentoft, Dan. Med. Bull., **54** (2007) 306.
[7]   P. Corcoran, H.S. Keeley, M. O'Sullivan and I.J. Perry, Irish J. Med. Sci., **172** (2003) 107.
[8]   H. Fliege, J.R. Lee, A. Grimm and B.F. Klapp, J. Psychosom. Res., **66** (2009) 477.
[9]   M. Oumaya, S. Friedman, A. Pham, T. Abou Abdallah, J.D. Guelfi and F. Rouillon, Encephale., **34** (2008) 452.
[10] M.K. Nock, Self-injury, Annu. Rev. Clin. Psychol., **6** (2010) 339.