Coll. Antropol. **29** (2005) 2: 519–525
UDC 616.89-008.441.44(497.5)"1993/2003"
Original scientific paper

Epidemiological Study of Suicide in Croatia (1993–2003) – Comparison of Mediterranean and Continental Areas

Dalibor Karlović[1], Ruža Gale[2], Vlatko Thaller[1], Marko Martinac[1], Križo Katinić[1] and Ana Matošić[1]

[1] Department of Psychiatry, University Hospital »Sestre milosrdnice«, Zagreb, Croatia
[2] Department of Criminology, Police Academy, Ministry of Interior, Zagreb, Croatia

A B S T R A C T

The aim of this study is to analyze eventual differences in characteristic of suicide between two areas of the Republic of Croatia, mediterranean and continental, according to the following variables: suicidal rates, season, month, day, method, places, socioeconomic variables such as gender, ages, marital status, employment, education, and psychiatric or medical characteristic. Data were collected from the Suicide register of the Ministry of Interior, and Croatian Bureau of Statistic. Analysis was done on all suicide cases committed in the period 1993–2003. According to the Suicide Register of Ministry of Interior, 11,359 suicides were reported in period between 1993 and 2003. The average suicide rate in the Mediterranean area was lower (16.44 suicides per year) than in continental area of Croatia (26.34 suicides per year). Suicide committers in the Mediterranean area was statistically significant younger than suicide committers in the continental area of Croatia. In the continental area male suicide committers were more often than in the Mediterranean area of Croatia. In the Mediterranean area suicide committers were in most cases with high school education while in continental area of Croatia most cases of suicide committers were with elementary school education. Alcohol dependence, family conflicts, and medical disorders were more often present as suicidal motive in suicide committers in continental area of Croatia than in the Mediterranean area where undefined and unknown reason of suicide is present in majority of suicide cases. Cold steel, drowning, and jumping from height were more often present as suicidal method in the Mediterranean area of Croatia opposite to continental area of Croatia where jumping in front of car or train and suicide with firearms and explosive were more often. Also, in the Mediterranean area of Croatia suicides was mostly committed on open spaces and public places while in continental area of Croatia suicides was mostly committed in private plot.

Key words: *suicide, Croatia, mediterranean area, continental area, socio-demographic characteristics, suicide method, suicide motive*

Introduction

Suicide is a complex phenomenon of voluntary and intentional act of taking one's own life, associated with many social, biological, and psychological factors[1]. Suicide is among the top 10 causes of death of people of all ages in most countries[2]. In previous researches it was pointed out that suicide is associated with older ages, male sex, low social class and unemployment, family problems or divorcing, mental disorders especially alcohol dependence and depression. Also, majority of suicides are committed on the morning and in summer[1,3–5].

One of the most interesting topics in suicide research is distribution of suicide rates across regions and countries[6]. Worldwide annual suicide rates are different and are ranged from very low in the Guatemala and the Philippines (0.5), Albania (1.4), Dominican Republic (2.1), and Armenia (2.3) to very high such as in Latvia (42.5), Lithuania (42.1), Estonia (38.2), Russia (37.8), and Hungary (35.9)[6]. Regional differences of suicide rates have been reported in some European countries as well as in Europe in general[7]. Generally, higher rates of suicide have been reported in eastern and northern European countries, and lower rates in mediterranean countries[6,7]. Former research of suicides in Croatia showed that Croatia belonged to countries with a medium mor-

Received for publication June 11, 2004

tality rate due to suicide with approximate rate of 19 suicides per year[8,9]. However, the comparison of suicide rates among states is difficult, due to the unreliability of official statistics of suicides, as well as different methodology of suicides researches[10,11].

Also, Croatia is country with interesting location, one area of Croatia is located on Adriatic Sea belong to Mediterranean area with coast length of 1778 kilometers. This area of state borders across the sea with Italy. Other area of Croatia is continental having the highlands and Panonian plain bordering with Hungary and Slovenia on the north and west.

These nearest states, on Croatian state board, have different annual suicidal rate. Hungary and Slovenia have very high suicidal rate and belong to countries with extremely high annual suicide rate (Slovenia annual suicide rate is 27–31, Hungary annual suicide rate is 31–36)[6,7]. Contrary to that, Italy is a country with very low annual suicide rate of 6–7[12], as well as other Mediterranean states such as Greek, Spain, Portugal, Israel and Albania[13,14]. According to that, our hypothesis is that there is a significant difference in suicide rates between the Mediterranean and continental area of Croatia.

The aim of this study is to analyze possible differences in suicide characteristic between two areas of Republic of Croatia, Mediterranean and continental, according to the following variables: suicidal rates, season, month, day, method, places, socioeconomic variables such as gender, ages, marital status, employment, education, and psychiatric or medical characteristic.

Subjects and Methods

Data source

Our research was based upon two sets of data: the Suicide Register of the Ministry of Interior, and the data of the Croatian Bureau of Statistics.

We included the data about the number of committed suicides from the Register of the Ministry of Interior of the Republic of Croatia between 1993–2003 period. The Suicide Register is based upon the investigations of the reasons and cause of death, which were made by police officers at the place of suicide in cases of sudden death, or suicide. The data were collected for the cases when it was clear that the cause of death was suicide and when a person died at the place where suicide was committed. Persons who attempted suicide were registered if the police were notified, but there were no follow-up data or data after medical intervention. These data were not included in the analysis.

The following data from the Register of suicide of the Ministry of Interior of the Republic of Croatia were used for this study: police department responsible for the area where suicide committed, approximate hour, day, month, and season when suicide was committed, previous suicide attempts, suicidal notes, physical or psychological disturbances and disorders (mental disorder, alcohol dependence, family disturbances, work and socio-economic problems), location (place of living; private plot; nearness of or on lakes, sea, river; public institution; forest, meadow, or ranch; in the open place such as streets, roads, motorway, square; and other), and method (hanging, jumping from heights, drowning, jumping in front of the car or train, firearms or explosive weapons, cold steel, intoxication, other) of suicide committers. We additionally analyzed socio-demographic data such as sex (male, female), age (in years), education level (none, elementary school, secondary school, and college or university education), and working status (employed, unemployed or other) of suicide committers. The data were collected in a homogenous way. The suicides from the whole territory of the Republic of Croatia were included. An individual police department has authority over a country, an administrative and territorial unit of the Republic of Croatia. Out of the total 20 counties in Croatia, 7 are Mediterranean (on Adriatic Sea and with sea county border with Italy, and 13 are continental counties bordering with Hungary and Slovenia in the west and north and Yugoslavia on the east).

Data from the Croatian Bureau of Statistics included the number of inhabitants in the Republic of Croatia according to the census in 1991, the number of the inhabitants in each country in the Republic of Croatia according to the census in 1991.

Subjects

The population of Croatia was 4.5 million in 1991 census. In the Mediterranean area of the country live approximately 1.3 million and in continental 3.1 million of people. According to the data from the Ministry of Interior, there were 11,359 suicides committed in the period 1993–2003. There were 8469 men and 2890 women (2.93:1 ratio). Their age ranged from 7 to 97 (51.7±18.8).

Statistical analysis

The number of committed suicides in each year and area is present as a suicide rate and an absolute number in the year when the suicide was committed**.** The difference between suicide rates in the Mediterranean area opposite to Croatia continental was calculated by Poisson regression model. The age differences were analyzed with t-test for large independent samples, and in order to test the normal probability distribution, Kolmogorov-Smirnov test was used. All other variables were analyzed by χ^2-test.

Results

The average suicide rates, as well as the total number of suicides in the Mediterranean and continental area of Croatia, according to the data of the Ministry of the Interior are presented in Table 1. The average annual suicide rate in the Mediterranean area of Croatia in the period from 1993 to 2003 is lower (16.44), opposite to the higher average suicide rate in the continental area of Croatia (26.34). According to data in Table 1 av-

TABLE 1
THE NUMBER OF SUICIDES AND SUICIDE RATES ACCORDING TO THE REGISTER OF THE MINISTRY OF INTERIOR IN THE MEDITERRANEAN AREA AND CONTINENTAL AREA OF CROATIA

	Mediterranean area of Croatia		Continental area of Croatia	
	Annual suicide number	Annual suicide rate	Annual suicide number	Annual suicide rate
1993	277	20.17	994	32.44
1994	281	20.46	1131	36.94
1995	268	19.51	1051	34.33
1996	276	20.02	1003	32.73
1997	218	15.87	687	22.45
1998	201	14.64	698	22.78
1999	188	13.69	739	24.12
2000	217	15.80	655	21.38
2001	176	12.82	643	20.98
2002	186	13.54	638	20.82
2003	196	14.27	636	20.76
Average 1993–2003	226	16.44	807	26.34

TABLE 2
SOCIO-DEMOGRAPHIC FEATURES AMONG PEOPLE WHO COMMITTED SUICIDE, AND HOUR, DAY, AND SEASON OF SUICIDE IN MEDITERRANEAN AND CONTINENTAL AREA OF CROATIA

Characteristics	Area of Croatia		χ^2	p-value
	Mediterranean number (%)	Continental number (%)		
Sex:				
Males	1747 (70)	6722 (76)	29.9531	<0.01
Females	737 (30)	2153 (24)		
Marital status:				
Married	772 (31.1)	2644 (29.8)	1.5295	0.216
Single / divorced / widower	1712 (68.9)	6231 (70.2)		
Education level:				
Elementary school or less	902 (36.3)	4526 (51.0)	72.311	<0.01
High school	1334 (53.7)	3718 (41.9)		
College or university education	248 (10.0)	631 (7.1)		
Employment status:				
Employed	332 (13.3)	917 (16.7)	19.706	<0.01
Unemployed or Other	2152 (86.7)	7958 (83.3)		
Time (hours):				
1–6	352 (14.2)	1166 (13.1)	3.891	0.273
7–12	833 (33.5)	2918 (32.9)		
13–18	663 (26.7)	2523 (28.4)		
19–24	636 (25.6)	2268 (25.6)		
Day of the week:				
Monday	374 (15.1)	1397 (15.7)	3.179	0.785
Tuesday	365 (14.7)	1372 (15.5)		
Wednesday	375 (15.1)	1314 (14.8)		
Thursday	370 (14.9)	1281 (14.4)		
Friday	372 (13.8)	1266 (14.3)		
Saturday	339 (13.6)	1147 (12.9)		
Sunday	319 (12.8)	1098 (12.4)		
Season:				
Autumn	561 (22.6)	1951 (22.0)	1.688	0.639
Winter	563 (22.7)	1939 (22.7)		
Spring	711 (28.6)	2584 (28.6)		
Summer	649 (26.1)	2401 (26.1)		

erage suicide rate is constantly higher in continental area of Croatia in comparison to mediterranean area. Also, Poisson regression analysis showed that suicides is more frequent and statistically significant higher in continental area of Croatia opposite to mediterranean part of Croatia (Regression coefficient = –5.78479, χ^2= 315195.46, p=0.001).

In the Mediterranean area of Croatia suicide committers were statistically significant younger than in continental area of Croatia (50.9±18.8 vs. 52.1±18.7, t-test =2.1906, p=0.02). Also, there was a statistical difference of distribution of suicide committers by gender between the Mediterranean area of Croatia and the continental area of Croatia (Table 2). This difference is because males committed suicide in lower percentage (70% and females in higher percentage (30%) in the Mediterranean area of Croatia versus continental area of Croatia where males committed suicides in higher percent (76%) than females (24%).

We have not found statistically significant differences between the Mediterranean area and continental area of country according to marital status (Table 2), because in area of country single, divorced, and widowed suicide committers are numerous.

In the Mediterranean area suicide committers in most cases have secondary school education, whereas in the continental area of country suicide committers have mostly elementary schooled (Table 2). Also, in the Mediterranean area suicide committers are employed in higher percentage than in the continental area of Croatia.

TABLE 3
SOCIO-DEMOGRAPHIC FEATURES AMONG PEOPLE WHO COMMITTED SUICIDE, AND HOUR, DAY, AND SEASON OF SUICIDE IN THE MEDITERRANEAN AND CONTINENTAL AREA OF CROATIA

Characteristics	Area of Croatia		χ^2	p-value
	Mediterranean number (%)	Continental number (%)		
Suicidal motive[1]:				
Alcohol dependence	41 (3.1)	511 (11.0)		
Mental disorder	339 (25.0)	1253 (27.0)		
Medical, somatic problems	122 (9.1)	731 (15.8)		
Drug dependence	12 (0.2)	15 (0.3)	197.5428	<0.01
Financial, economic hardship	20 (1.5)	63 (1.4)		
Family problems	71 (6.3)	325 (7.0)		
Unknown or undefined reason	729 (54.5)	1712 (36.9)		
School failure	3 (0.2)	15 (0.3)		
Problems with criminal law	1 (0.1)	14 (0.1)		
Suicide method:				
Hanging	991 (56.9)	6651 (56.9)		
Jumping from heights	240 (12.9)	380 (5.7)		
Jumping in front of car or train	31 (1.7)	207 (3.1)		
Drowning	78 (4.2)	168 (2.5)	296.8917	<0.01
Firearms, explosive	351 (18.9)	1705 (25.6)		
Cold steel	76 (4.1)	125 (1.9)		
Intoxication	73 (3.9)	254 (3.8)		
Other	15 (0.8)	27 (0.4)		
Place of suicide:				
Place of living	1428 (57.5)	4721 (53.2)		
In water, sea	80 (3.2)	126 (1.4)		
Forest, meadow, range	193 (7.8)	607 (6.8)	296.8917	<0.01
Public place	185 (7.4)	423 (4.8)		
Open space	314 (12.6)	731 (8.2)		
Private plot	262 (10.5)	2212 (24.9)		
Other	22 (0.9)	55 (0.6)		
Previous suicide attempts[1]:				
Yes	186 (13.9)	702 (15.1)	1.2444	0.264
No	1152 (86.1)	3937 (84.9)		
Suicidal mesage[1]:				
Yes	256 (19.1)	823 (17.7)	1.3604	0.243
No	1082 (80.9)	3816 (82.3)		
War area:				
Area directly affected by war	571 (23.0)	3399 (38.3)	200.1326	< 0.01
Area indirectly affected by war	1913 (77.0)	5476 (61.7)		

[1]Only for a period from second half 1997 to end of 2003

We have not found statistically significant differences between the Mediterranean area and continental area of Croatia according to the time, day of the week, and season of suicide (Table 2).

There was a statistically significant difference between the Mediterranean and continental area of Croatia according to the suicide motive: alcohol dependence, family conflicts, and medical or somatic problems were more common in continental area of Croatia. On the contrary, unknown or undefined cause seemed to be statistically more often present in the Mediterranean than continental area of Croatia (Table 3).

Hanging was the most frequent method of suicide among committers in the Mediterranean and continental area of Croatia. However, there was statistically significant difference in suicide method between two areas of Croatia because in the Mediterranean area more often suicide methods are jumping from heights, suicide with cold steel, and drowning than the continental area where suicide committers more often kill themselves with firearms or jump in front of car or train (Table 3).

Suicide committers in the Mediterranean area often commit suicide in public institutions or in open public spaces, where in continental area of Croatia suicide committers often commit suicide on private plot. In both areas of Croatia most cases of suicide commitment were done in place of living, as well as majority of suicide victims did not leave suicide note and have one or more suicide attempts (Table 3).

There was a statistically significant difference between Mediterranean and continental area of Croatia in number of suicide commitments in areas directly affected by war and indirectly affected by war (Table 3). That is because in continental area, suicides are more often in areas directly affected by war than in Mediterranean area of Croatia.

Discussion

Our results show that there is a difference in annual suicide rate between the Mediterranean area and continental area of Croatia, because in Mediterranean area average annual suicide rate is lower (16.44), while in continental area of Croatia average annual suicide rate is higher (26.34). This result is in line with previous researches in which point out that suicide rate is permanently lower in Mediterranean opposite to Northern or Middle European areas[6,7]. However, suicide rate in Mediterranean area of Croatia is higher than in Italy[12] and Greece[14] or other Mediterranean countries where annual suicidal rate is lower than 10[6,13,15]. This discrepancy in suicide rates between Mediterranean area of Croatia with other Mediterranean countries can be explained by some socio-economic and political factors[16,17]. For example, transitional countries and countries with economic recession, such as Croatia, have higher suicidal rate than economically and politically stabile countries[1]. Also, high unemployment as suicidal risk factor[16,17] may be the reason for higher suicidal rate in Mediterranean area of Croatia opposite to other the Mediterranean countries where unemployment rate is lower.

However, opposite to Mediterranean area, the suicide rate in continental area of Croatia is similarly high as in bordering countries, Hungary and Slovenia, where suicide rates varies between 25 and 36[6,7]. That difference in suicide rate between the Mediterranean area and continental area of Croatia in one hand, and on the other hand, similarity of suicidal rate between continental area of Croatia and neighbor countries such as Slovenia and Hungary we can also explain by some cultural and socio-economic factors. Namely, in continental area of Croatia, opposite to Mediterranean area, in most cases family structures are nuclear with relatively poor family ties[18]. Family support in periods of crisis, psychological, or socio-economic problems, is relatively strong in Mediterranean area contrary to continental area of Croatia[18,19]. The family support it self, is according to same studies, in difficult periods of life is a crucial factor in suicide prevention[20]. Also, social isolation, which has been positively related to suicide[21], is still relatively low in Mediterranean area of Croatia contrary to continental area where it shows increasing tendencies in the bigger cities and industrialization. In explanation of lower suicide rates in Mediterranean area of Croatia opposite to continental area we find also in some trans-cultural differences in Mediterranean and continental way of behavior. Namely, externalization of anger and aggression are socially acceptable in Mediterranean area opposite to continental area of Croatia where calm, gentle and distant temperament represents a quality[21]. Also, low isolation and alienation between neighbors and family members, fairly short distances in communication between family members, relatives, neighbors, and in population in general are characteristics of people temperament in Mediterranean area of Croatia[18].

Also, the connection with Catholic Church and the church influence on life and culture is stronger in Mediterranean area than in continental area of Croatia[18]. We also find church influence as one of the crucial factors of lower suicide rates in Mediterranean area. Durkheim, one of the most respectable scientists in suicidology, showed that regional differences in suicide rates depend in great extent on religious influence[22]. For example, Durkheim showed that religious homogeneity in society contributes to low suicide rate opposite to religiously in-homogeneous society, with more than one religious community. Other Religions, such as Protestant, Orthodox, and Islam are presents besides Catholic Religion that is in majority in the continental Croatia. According Durkheim theory, that religious in-homogeneity in the continental area of Croatia contributes to higher suicide rate than in the Mediterranean area.

In our research most of suicides were committed in spring or summer and in morning hours without any differences between Mediterranean and continental area of Croatia according to these variables. These findings are in line with previous studies whose purpose was to explore seasonal distribution of suicides[23]. Also, single,

widowed, or divorced marital status is one of the suicidal risk factor[17,24 25] which we also confirmed in our research, without any differences between continental and Mediterranean area of Croatia.

Interesting finding in our research is the difference in level of education between suicide committers in the continental area where majority of suicide committers were with elementary school education opposite to the Mediterranean area of Croatia where most of suicide committers graduated from high school.

The above mentioned demographic characteristics of suicide committers in Mediterranean area and continental area of Croatia do not result from possibly different demographic features between those two areas (continental and Mediterranean), since according to annual statistics manual and other recent demographic surveys there were no differences un sex, marital, economic, educational and working structure between continental and Mediterranean area of Croatia[18,19,26]. Also, both of these areas have similar geographical environment, therefore increased number of suicides committed by jumping from heights in Mediterranean area of Croatia cannot be explained with greater number of mountains in Mediterranean Croatia[18,19,26].

In both Mediterranean and continental area of Croatia suicide was committed by hanging and in one's own home. That result is in line with other studies that pointed out that hanging is one of the most usual method of suicide, without any differences across the European countries[27,28]. Also, place of living, such as house or apartment, was the most often place where suicide was committed. However, we found, also, some differences in method and place of suicide commitment between continental and Mediterranean area of Croatia. For example, in Mediterranean area besides hanging, jumping from height, drowning, intoxication, and suicide with cold steel is statistically significant more often than in continental area of Croatia where suicide with firearms or explosive is significantly higher. The explanation for those results we found in fact that large territory of continental Croatia was directly affected by war than Mediterranean area. Namely, a previous study showed that in areas directly affected by war suicide with firearms and explosives rapidly rise[27,28]. On the other hand higher drowning as the main method in Mediterranean opposite to continental area is logical because nearness of sea. Higher rate of intoxication, as a typical female suicide method, in Mediterranean area of Croatia contrary to continental area is a probable result of higher rate of female suicides in Mediterranean area of Croatia. Suicide method in Mediterranean area is in line with place of suicide. Namely, besides of place of living as most often place of suicide committing in both continental and Mediterranean area of Croatia, in continental area of Croatia private plot is very often the place where suicide is committed. Opposite to that, in Mediterranean area of Croatia open places, as roads, squares, streets, public places, or public institutions are very often the places where suicide is committed. This discrepancy in places of suicide commitment between continental and Mediterranean area of Croatia we found in differences in temperament and mentality. For example, in continental area of Croatia mentality of people in general as we previously described is more introvert, according to that it is easy to explain why in continental area of Croatia suicide committers choose one's own home or home plot as place of suicide. Opposite to continental mentality, Mediterranean mentality is more extrovert, because of that it is easy to explain why in Mediterranean area more suicide was done in external places such as squares, streets, and public places. The similar results were found other researchers in the Mediterranean countries[12–14].

The differences in suicidal motive between Mediterranean and continental area of Croatia is very interesting, because of high proportion of suicide committers with alcohol dependence in continental, opposite to Mediterranean area of Croatia. According to previous researches alcohol dependence is a strong risk factor for suicide committing[29–32]. Further, in continental area of Croatia there is higher rate of alcoholics than in Mediterranean area of Croatia[33,34]. That fact explains for higher suicide rate of alcoholics in continental area of Croatian opposite to Mediterranean. Further, in Mediterranean area of Croatia there is a high proportion of unidentified suicide motives opposite to continental area of Croatia. Mental disorders, drugs dependence, family problems, and socio-economic problems as suicidal motive represent variables in which there are no differences between Mediterranean and continental area of Croatia.

Researchers in previous studies showed that only 15 to 25% of the people who commit suicide leave suicidal notes[25]. In our study we did not find differences between Mediterranean and continental area of Croatia in number of suicide committers who leave suicidal note. Also, in our sample percentage of leaving suicidal notes is in upper range[11, 35,36].

However, our study has also several limitations. Firstly, there is a question of the reliability and validity of official suicide statistics. Several authors discussed this topic previously. Also, the war in Croatia contributed to migrations in some area of Croatia, and caused different population structure and density than described in official statistics[37–39].

In conclusion, our study showed a significant difference in suicide rate between Mediterranean and continental area of Croatia because in Mediterranean area of Croatia the suicide rate is lower. Furthermore, we found same differences in suicidal motive, place of suicide, suicide method, sex, education level, and working status of suicide committers between Mediterranean and continental area of Croatia. Further studies are needed to evaluate eventual genetic differences between Croatian population from Mediterranean and continental area of Croatia. Also, analysis of social and cultural influences, especially war influence on suicide rate in Croatia is needed.

REFERENCES

1. MARIS, R. W., A. L. BERMAN, M. M. SILVERMAN: Comprehensive textbook of suicidology. (The Guilford Press, New York, 2000). — 2. BILLE-BRAHE, U., Nord. J. Psychiat., 48 (1994) 257. — 3. GUNNEL, D., H. WEHNER, S. FRANKEL, Lancet, 353 (1999) 556. — 4. GUNNELL, D., A. LOPATATZIDIS, D. DORLING, H. WEHNER, H. SOUTHALL, S. FRANKEL, Br. J. Psychiat., 175 (1999) 263. — 5. MOSCICKI, E. K., Psychiat. Clin. N. Am., 20 (1997) 499. — 6. BUNTING, J., S. KELLY, Pop. Trend., 93 (1998) 7. — 7. GUNNELL, D., Int. Rev. Psychiat., 12 (2000) 21. — 8. MARCIKIĆ, M., M. UGLJAREVIĆ, T. DIJANIĆ, B. DUMENČIĆ, I. POŽGAIN, Coll. Antropol., 27 Suppl. 1 (2003) 101. — 9. World Health Statistic Annual. Health for all 2000 database. (Geneva, Switzerland, World Health Organization, Regional Office for Europe, 1994). — 10. ATKINSON, M. W., N. KESSEL, J. B. DALGARD, Br. J. Psychiat., 127 (1975) 274. — 11. O'DONNELL, I., R. FARMER, Br. J. Psychiat., 166 (1995) 458. — 12. GUAIANA, G., B. C. D'AVANZO, C. BARBUI, Soc. Psych. Psych. Epid., 37 (2002) 267. — 13. LUBIN, G., S. GLASSER, V. BOYKO, V. BARELL, Soc. Psych. Psych. Epid., 36 (2001) 123. — 14. ZACHARAKIS, C. A., M. G. MADIANOS, G. N. PAPADIMITROU, C. N. STEFANIS, Soc. Psych. Psych. Epid., 33 (1998) 471. — 15. LAVECCHIA, C., F. LUCCHINI, F. LEVI, Acta Psych. Scand., 90 (1994) 53. — 16. JOHANSON, S. E., J. SUNDQUIST, Pub. Health, 111 (1997) 41. — 17. CHARLTON, J., S. KELLY, K. DUNNELL, B. EVANS, R. JENKINS, R. WALLIS, Popul. Trend., 71 (1993) 34. — 18. AKRAP, A., D. ŽIVČIĆ, Društvena Istraživanja, 10 (2001) 621. — 19. CRKVENČIĆ, I., S. ŠTERC, Geo. J., 38 (1996) 21. — 20. HIRSCH, J., J. B. ELLIS, Int. J. Soc. Psychiat., 41 (1995) 26. — 21. JOHANSSON, L. M., J. SUNDQUIST, S. E. JOHANSSON, J. QVIST, B. BERGMAN, Soc. Psych. Psych. Epid., 32 (1997) 165. — 22. DURKHEIM, E., Suicide. (Free Press, Glencoe, IL, 1951). — 23. PRETI, A., P. MIOTTO, Psych. Res., 81 (1998) 219. — 24. KOSKINEN, O., K. PUKKILA, H. HAKKO, J. TIIHONEN, E. VAISANEN, T. SARKIOJA, P. RASANEN, J. Affect. Disord., 70 (2002) 197. — 25. KESSLER, C. R., J. A. M. A., 56 (1999) 617. — 26. Statistical Yearbook of the Republic of Croatia. (Central Bureau of Satistic of Republic of Croatia, 2001). — 27. MOENS, G. F., M. J. LOYSCH, S. HONGGOKOESOEMO, H. VAN DE VOORDE, Acta Psych. Scand., 79 (1989) 207. — 28. LESTER, D., Acta Psych. Scand., 81 (1990) 260. — 29. RAMSTEDT, M., Addiction, 96 (2001) 59. — 30. THALLER, V., D. BULJAN, D. BREITENFELD, S. MARUšIĆ, T. BREITENFELD, D. DE SYO, Z. ZORIČIĆ, Coll. Antropol., 22 (1988) 603. — 31. THALLER, V., D. BREITENFELD, D. BULJAN, Eur. J. Psychiat., 11 (1997) 43. — 32. THALLER, V., Z. BRZOVIĆ, D. BREITENFELD, D. BULJAN, Coll. Antropol., 19 (1995) 493. — 33. HUDOLIN, V., Int. J. Soc. Psychiatry., 15 (1969) 85. — 34. SOLTER, V, V. THALLER, A. BAGARIĆ, D. KARLOVIĆ, D. CRNKOVIĆ, Eur. J. Psychiat., 18 (2004) 15. — 35. FARBEROW, N. L.: Suicide in different cultures. (University Park Press, Baltimore, 1975). — 36. SCHMIDKE, A., B. WEINACKER, A. APTER, Arch. Suicid. Res., 5 (1999) 81. — 37. KARLOVIĆ, D., S. MARUŠIĆ, M. MARTINAC, Wien. Klin. Wochenschr., 116 (2004) 385. — 38. KARLOVIĆ, D., D. BULJAN, M. MARTINAC, D. MARČINKO, J. Korean. Med. Sci., 19 (3) 431. — 39. KARLOVIĆ, D., M. MARTINAC, D. BULJAN, Z. ZORIČIĆ, Acta. Med. Okayama, 58 (1) 2004.

D. Karlović

Department of Psychiatry, University Hospital »Sestre milosrdnice«, Vinogradska cesta 29, 10000 Zagreb, Croatia
e-mail: dalibor.karlovic@zg.htnet.hr

EPIDEMIOLOŠKA ANALIZA SUICIDA U HRVATSKOJ (1993.–2003.) – USPOREDBA MEDITERANSKOG I KONTINENTALNOG DIJELA

SAŽETAK

Cilj ovog rada je analizirati eventualne razlike u karakteristikama ubojstava između dviju regija Republike Hrvatske, mediteranske i kontinentalne regije s obzirom na sljedeće varijable: stope ubojstva, godišnje doba, mjesec, dan, sredstvo odnosno metoda, mjesto izvršenja, socioekonomske varijable kao što su spol, godine, obiteljski status, zaposlenost, obrazovanje i psihijatrijska ili medicinska karakteristika. Koristili su se podaci iz Registra Suicida Ministarstva unutarnjih poslova i Hrvatskog zavoda za statistiku. Analiza je rađena na svim slučajevima počinjenim u periodu od 1993. do 2003. godine. Prema Registru Suicida Ministarstva unutarnjih poslova, bilo je prijavljeno 11,359 samoubojstava u periodu od 1993. do 2003. Prosječna godišnja stopa suicida na mediteranskom području je niža (16.44) nego u kontinentalnom području Hrvatske (26.34). Počinitelji suicida u mediteranskoj regiji su bili statistički značajno mlađi nego počinitelji suicida u kontinentalnom dijelu Hrvatske. Muškarci kao počinitelji suicida su bili češći u kontinentalnom dijelu nego na mediteranskom području. Na mediteranskom području počinitelji suicida su u većini slučajeva bili visoko obrazovani dok su u kontinentalnom dijelu počinitelji samoubojstava u većini slučajeva imali osnovnu školu. Kao najčešći motivi suicida za počinitelje u kontinentalnom dijelu Hrvatske bili su: alkoholizam, konflikti u obitelji i medicinski poremećaji dok su na mediteranskom području u većini slučajeva motivi za činjenje samoubojstava bili nedefinirani i nepoznati. Najčešći načini izvršenja suicida na mediteranskom području Hrvatske bili su hladnim oružjem, utapanjem i skakanjem s visine suprotno od kontinentalnog dijela Hrvatske gdje su najčešće metode samoubojstava bile skakanje pod vozilo, vlak, suicidi počinjeni vatrenim oružjem ili eksplozivom. Također, na mediteranskom području Hrvatske suicidi su većinom počinjeni na otvorenim i javnim mjestima dok je okućnica bila najčešće mjesto izvršenja samoubojstava u kontinentalno dijelu Hrvatske.