

Psychosocial Autopsy Study of Suicide in Lithuania: Gender Differences

Savižudybių psichosocialinės autopsijos tyrimas Lietuvoje: lyčių skirtumai

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SUMMARY

Background. Psychosocial autopsy is one of the most valuable methods to examine the relationship between antecedents and suicide. This method involves collection of data from relatives/acquaintances/friends or people who know well the suicide completers. This can help reconstruct the psychosocial environment of suicide completers and understand the circumstances of their death.

Aim. This study aimed to examine gender differences in psychosocial factors among suicide completers.

Methods. Subjects of this study included 145 suicide completers whose closest relatives/acquaintances/friends or people who know them well consented to participate in this study. Gender differences on psychosocial factors of suicide completers were analyzed by using information collected for the psychosocial autopsy study. Descriptive analyzes was performed to analyze age, gender, suicide method, place where the suicide occurred, the suicide completers socioeconomic profile, and risk factors of suicide completers.

Results. Of the 145 suicide completers, 111 (76.5%) were male and 34 (23.5%) were female (ratio 3:1) and 38% have had a history of previous non-fatal suicide attempt. Overall, among suicide completers most men (30%) and women (26%) were young adults aged 18 to 30 years, followed by middle-aged men (21%) and women aged 70+ (26%). The most prevalent factors associated with suicide among men were linked to interpersonal difficulties, family difficulties, difficulties in work and financial problems; while among women the most prevalent factors were health problems, and bereavement. Among all suicide completers, women had a significantly higher prevalence of past suicide attempts than men (58.8% vs. 32.4% respectively, $p=0.022$). Mental disorders were reported more frequently in women than men (56% vs. 34%, $p=0.027$). Of these, 56% of men and 73% of women regularly visited family doctors and other health specialists. History of mental disorders was reported in 29% of suicide completers: 23% of men, 47% of women.

Conclusions. Most of suicide completers were young adults, of both genders, aged 18 to 30 years, followed by middle-aged men and women aged 70+. The most prevalent factors associated with suicide among men were interpersonal stressors, family conflicts, problems in work and financial difficulties, while among women the most prevalent factors were health problems, and bereavement. A higher proportion of men suffered from drug and alcohol abuse.

Keywords: suicide, gender differences, psychosocial autopsy.

SANTRAUKA

Įvadas. Psichosocialinės autopsijos tyrimas grindžiamas duomenų rinkimu iš artimųjų/pažįstamų/draugų ar asmenų, gerai pažinojusių nusizudžiusius asmenis. Šie duomenys gali padėti atkurti nusizudžiusių asmenų psichosocialinę aplinką ir tokiu būdu suprasti savižudybių aplinkybes.

Tikslas. Ištirti nusizudžiusių asmenų psichosocialinių veiksnių skirtumus tarp lyčių, naudojant psichosocialinės autopsijos metodą.

Metodai. Tyrimo imtį sudarė 145 nusizudę asmenys, kurių artimiausi giminaičiai/pažįstami/draugai, gerai pažinoję nusizudžiusįjį, sutiko dalyvauti tyrime. Psichosocialinės autopsijos pagalba buvo išanalizuoti nusizudžiusių asmenų psichosocialiniai veiksniai ir jų skirtumai tarp lyčių. Aprašomoji duomenų analizė buvo atlikta siekiant apibūdinti tiriamąją imtį pagal amžiaus grupes ir lytį, savižudybės metodą, savižudybės vietą, nusizudžiusių asmenų socialinį ir ekonominį profilį bei rizikos veiksnius.

Rezultatai. Iš 145 nusizudžiusių asmenų 111 (76,5 proc.) buvo vyrai ir 34 (23,5 proc.) moterys (santykis 3:1). Ankstesnių savižudžiškų bandymų turėjo 38 proc. Dauguma nusizudžiusių vyrų (30 proc.) ir moterų (26 proc.) buvo jauno amžiaus, nuo 18 iki 30 metų; šiek tiek mažiau buvo vidutinio amžiaus vyrų (21 proc.) ir vyresnių nei 70 metų moterų (26 proc.). Interviu metu, nusizudžiusių asmenų artimųjų dažniausiai nurodomos savižudybės aplinkybės (mažėjančia tvarka) tarp vyrų buvo susijusios su tarpasmeniniais sunkumais, sunkumais šeimoje, darbo ir finansinėmis problemomis; o tarp moterų – su sveikatos problemomis ir netektimis. Ankstesnių bandymų žudytis dažnis tarp moterų buvo didesnis nei vyrų (atitinkamai 58,8 proc. ir 32,4 proc., $p=0,022$). Moterų, lyginant su vyrais, psichikos sutrikimais buvo stebėti dažniau (atitinkamai 56 proc. ir 34 proc., $p=0,027$). Iš jų 56 proc. vyrų ir 73 proc. moterų reguliariai lankėsi pas šeimos gydytoją ir kitą specialistą. Psichikos sutrikimų, kuriuos paminėjo nusizudžiusių artimieji, galėjo turėti 29 proc. nusizudžiusių asmenų: 23 proc. vyrų, 47 proc. moterų.

Išvados. Daugiausia mirusiųjų dėl savižudybės, abiejų lyčių, buvo 18–30 metų amžiaus, vyrų – vidutinio amžiaus, ir moterų nuo 70 metų amžiaus. Vyrų, dažniau negu moterys, prieš savižudybę patyrė tarpasmeninius stresorius, konfliktus šeimoje, turėjo problemų darbe ir finansinių sunkumų. Tuo tarpu moterys, dažniau negu vyrai, turėjo sveikatos problemų ir netekčių. Didesnė dalis vyrų nukentėjo nuo piktnaudžiavimo narkotikais ir alkoholiu.

Raktažodžiai. savižudybė, lyčių skirtumai, psichosocialinė autopsija.

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INTRODUCTION

Although the suicide rate in Lithuania is on a consistent decline, the overall number of people taking their own lives remains rather high, that which highlights problems in the mental health system [1, 2]. Lithuania ranks fourth in the world's suicide rate, and has a second rank for the male suicide rate among all countries in the world [3]. The most vulnerable groups include mid-aged (45–59 years) and over 75 years old males living in rural and socially isolated environment [4]. Available information on risk for suicide completion in women is limited. Despite a high suicide rate among these groups, there is a significant lack of empirical evidence on their suicide behavior [5]. To improve prevention and detection of suicide risk factors, more research is needed on gender differences in contributors to suicidal behavior and associations between precipitating factors and suicide means [6]. Psychosocial autopsy study is probably the most direct technique currently available for determining the relationship between particular antecedents and suicide [7, 8]. This can help reconstruct the psychosocial environment of suicide completers and thus understand the circumstances of their death.

We examined the characteristics of suicide completers aged 18 years and older using data from the semi-structured interview of relatives/acquaintances/friends or people who know well the suicide completers and who agreed to participate in this study. The study took into account data by age range and gender, suicide method, place where the suicide occurred, socioeconomic profile, and the circumstances related to most common difficulties experienced by suicide completers.

MATERIAL AND METHODS

Subjects

Subjects of this study included 145 suicide completers whose closest relatives/acquaintances/friends or people who know well consented to participation in our study. The investigator chose bereaved (informant) who replied, and could participate in an interview.

Procedures

A present study with 145 suicide cases/informants was undertaken from January 2017 to December 2019. The study data was collected using a semi-structured interview method that was based on a protocol specifically designed for this study. A semistructured interview was conducted with adult (older than 18 years old) relatives/acquaintances/friends or people who know well the suicide completers and the suicide was at least six months ago, but no more than three years ago. The participants of study were invited through media, social media, universities, health institutions, crisis centers, and mental health centers. More people responded to the invitation of this study after published psychoeducational articles and shared invitations from famous people in social media and less from the communication with the administration of municipal or institutions offering a psychosocial help. The study participants were Lithuanian citizens, from various areas of Lithuania. The participants were informed about the study and were able to withdraw from the study at any time of the study. The confidentiality of information supplied by the research participants was guaranteed. Participation in the study was voluntary, and the research participants provided written consent thereof. The study protocol was approved by the

Kaunas Regional Biomedical Research Ethics Committee.

Assessment measures

This study was conducted based on the psychosocial suicide autopsy interview method. A semi-structured interview was administered by psychologists. The interview consisted of 57 open and closed questions covering the following main groups of questions: a) socio-demographic data about the people who committed suicide and their relatives; b) short prehistory of suicide and circumstances related to most common difficulties experienced by suicide completers (e.g. family conflicts, interpersonal relationships, bereavement, abuse, financial and health problems, problems in work and study, and others); c) physical and mental health, the use of medical services. The interviews were taken place at either private rooms of district municipalities, crisis centers, or community mental health centers. Confidentiality was guaranteed. The duration of the interview was, in average, 1.5 hours.

Statistical analysis

All statistical analyses were executed using the Statistical Package for Social Sciences (SPSS) for Windows (version 17.0). We analyzed gender differences in psychosocial and psychiatric characteristics of suicide completers using information collected for the study. Variables included for data analysis were sociodemographic, suicide related characteristics, previous suicidal behaviors and family history of suicidal behaviors, and medical problems. Pearson's Chi Square test, and Fisher's exact test were used to examine frequencies, T-test analysis was used to determine the significance of the difference between mean values in the independent groups. Because of the small numbers and the incompleteness of data available for many variables, statistical analysis for this report is mainly limited to counts and percentages. All findings are indicative, and no significance testing of differences was carried out. Due to the smaller number of women who died by suicide, breakdowns by gender may not always be provided. Statistical significance was accepted at $p < 0.05$.

RESULTS

Among analyzed of the 145 suicide completers, 111 (76.5%) were men and 34 (23.5%) were women. The mean age was 41 ± 17 (range 18–85) years in the male group, 49 ± 22 (range 18–87) years in the female group (total 43 ± 18 , range 18–87) (Table 1).

More than a third (38%) of the all suicide completers were aged 31 to 50 years old. The higher differences in age group between males and females were in the 31–40 age group (19% vs. 9%) and 70+ age group (8% vs. 26%).

Sociodemographic characteristics of suicide completers

In our study sample, more than a half (59%) of suicide completers lived in the urban and 39% in rural area; only 2% (3 suicides completers) lived outside of Lithuania. The majority of suicide completer (40%) were married, 34.5% never married, 17.9% divorced or separated, and 7.6% were widowed. According to gender, more than half (65%) of women were never married or widowed. Among all suicide completers of our study, around a quarter (22%) had higher university education. A half (52%) of study sample were employed, while 18% were unemployed, 12% were students, 16% were retired and 4% unable to work due to illness or disability.

Table 1. Sociodemographic characteristics of suicide completers

Characteristics	All, N=145	Men, N=111	Women, N=34	P men vs. women
Age, mean (SD) min–max	43 (18)18–87	41 (17)18–85	49 (22)18–87	p=0.039
Age group, n (%)				$\chi^2=10.7$ p=0.058
18–30	42 (29.0)	33 (29.7)	9 (26.5)	
31–40	24 (16.6)	21 (18.9)	3 (8.8)	
41–50	31 (21.4)	25 (22.5)	6 (17.6)	
51–60	19 (13.1)	16 (14.4)	3 (8.8)	
61–70	11 (7.6)	7 (6.3)	4 (11.8)	
70+	18 (12.4)	9 (8.1)	9 (26.5)	
Region, n (%)				$\chi^2=1.9$ p=0.585
rural	57 (39.4)	44 (39.6)	13 (38.2)	
urban	85 (58.6)	64 (57.7)	21 (61.8)	
other	3 (2.1)	3 (2.7)	0	
Marital status, n (%)				$\chi^2=39.0$ p<0.001
married	58 (40)	50 (45.1)	8 (23.4)	
never married	50 (34.5)	39 (35.1)	11 (32.4)	
divorced/separated	26 (17.9)	22 (19.8)	4 (11.8)	
widowed	11 (7.6)	0	11 (32.4)	
Education, n (%)				$\chi^2=4.1$ p=0.668
primary	7 (4.8)	5 (4.5)	2 (5.9)	
lower secondary	19 (13.1)	14 (12.6)	5 (14.7)	
upper secondary	30 (20.7)	22 (19.8)	8 (23.5)	
vocational education and training	40 (27.6)	34 (30.6)	6 (17.6)	
post-secondary	16 (11.0)	10 (9.0)	6 (17.6)	
university	32 (22.1)	25 (22.5)	7 (20.6)	
unknown	1 (0.7)	1 (0.9)	0	

Suicide methods and place

Among all suicide completers, 38% have had a history of previous non-fatal suicide attempt. A higher proportion of females experienced a history of suicide attempts compared with males (58.8% vs. 32.4%, $p=0.022$).

Around three-quarters (73.1%) of the all of 145 suicides were completed by hanging, strangulation or suffocation (Table 2). For both male and female subjects, hanging was the most frequently used suicide method (74.8% and 67.7% respectively). The second most common method of suicide was jumping from a height (7.5%). The suicide rate by jumping from a height and by poisoning among female suicide completers is greater than among men. In contrast, eight (7.2%) of male subjects used a firearm.

Other methods' accounted for 9.6% of all suicides, comprising of methods, such as drowning (3 women), suicides on the railway (4 men), used a sharp tool (1 man), suicides via poisoning by alcohol and/or recreational drugs (1 man

and 1 woman), by opening veins (2 men), carbon monoxide poisoning (1 man), electrocute in the bath (1 man).

Overall, men were more likely to use firearms, suicides on railway and more likely to use hanging than women, while women were more likely to use jumping from a height, poisoning and drowning as suicide method.

Most suicides took place at the individual's home (56%, $n=81$) or nearby workshop, outbuilding, basement or garage (14%, $n=21$). The next most common location was parents', grandparents' homes, or near them (11%, $n=16$), woodland or park (8%, $n=12$), followed by railway (2%, $n=4$).

Difficulties perceived by suicide completer prior suicide

The circumstances related to interpersonal relationships, health problems, and bereavement most commonly were reported by interviewing relatives/friends of suicide completers (Figure 1).

Overall difficulties experienced by suicide completers and generally restricted to the previous 12 months (yes vs. no/

Table 2. Suicide methods by gender

	Suicide method, N (%)				
	Hanging/ suffocation	Jumping from a height	Poisoning	Firearm	Other methods
All (N=145)	106 (73.1)	11 (7.5)	6 (4.1)	8 (5.5)	14 (9.6)
Men (N=111)	83 (74.8)	6 (5.4)	4 (3.6)	8 (7.2)	10 (9.0)
Women (N=34)	23 (67.6)	5 (14.7)	2 (5.9)	–	4 (11.7)

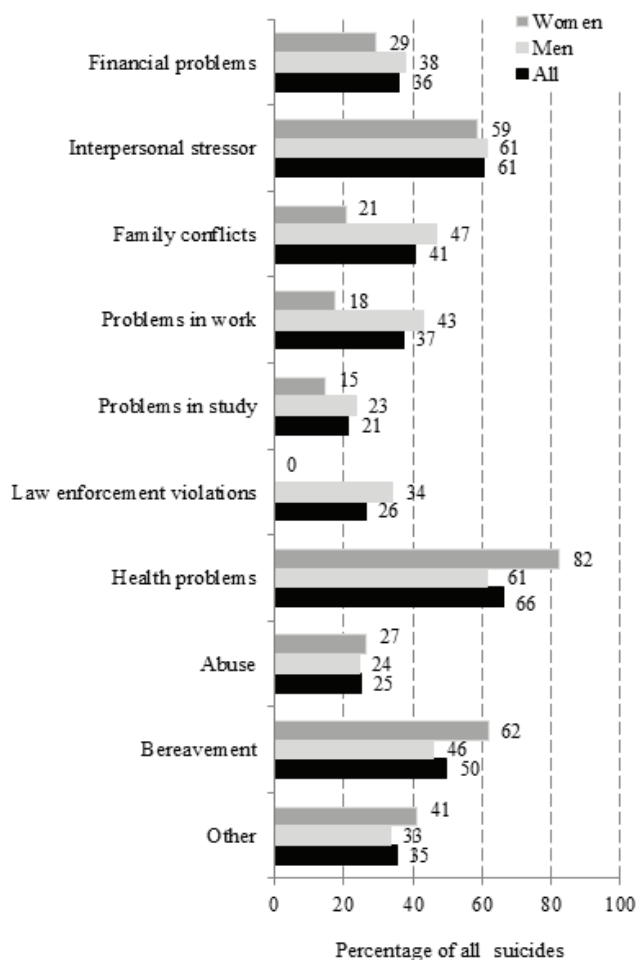


Figure 1. Difficulties experienced by suicide completers by gender

unknown), reported by interviewing relatives/friends of suicide completers, were related to: health problems (66%, n=96), interpersonal stressors (61%, n=88), family conflicts (41%, n=59), financial problems (36%, n=52), bereavement (50%, n=72). Over a quarter (26%, n=38) of suicide completers were known to have been involved with the criminal justice system (this includes a history of prison, or other remand).

According to the data, there was evidence of either history or current emotional, sexual, physical, financial or other type of abuse in 25% (n=36) of suicide completers. The largest

Table 3. History of physical health conditions in suicide completers

Disease	N (%)
Cardiovascular system disorders	8 (5.5)
Metabolism or nutritional disorders	8 (5.5)
Musculoskeletal disorder	6 (4.1)
Cancer (prostate, breast, cervical, brain tumor)	6 (4.1)
Digestive system disorders	4 (2.8)
Retarded development	4 (2.8)
Traumas	3 (2.1)
Respiratory system disorders	2 (1.4)
Infectious diseases	2 (1.4)
Post stroke	2 (1.4)
Epilepsy	2 (1.4)
Eye (glaucoma)	1 (0.7)
General or unspecified health problems (Asperger syndrome, hay fever, hepatitis)	11 (7.6)

proportions were for physical and emotional types of abuse: aggressive father or stepfather in childhood (10%, n=15), parents did not show love in their teens (n=1), male violence against women (4%, n=6), battles on the street (6%, n=9). Some people experienced more than one type of abuse. More than a half (56%) of suicide completers suffered four or more difficulties.

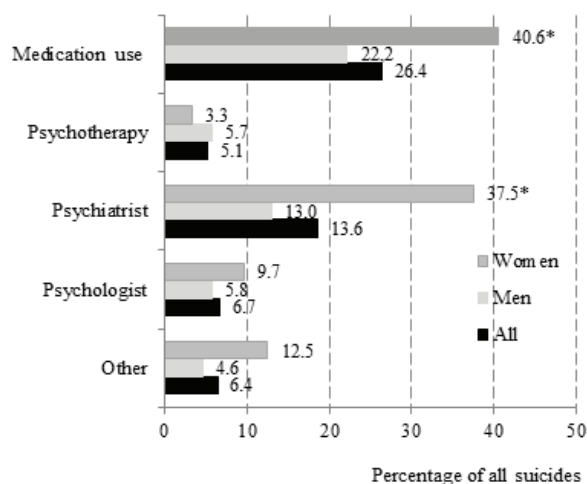
Differences in experienced difficulties between suicide completers by gender are presented in Figure 1. They are most pronounced for health problems (61% of men vs. 82% of women), bereavement (46% vs. 62%), family conflicts (47% vs. 21%), financial problems (38% vs. 29%) and involvement with the criminal justice system (only 34% of men).

Over a quarter (28%, n=41) of suicide completers had a family history of suicide, with similar proportions for men (28%, n=31) and women (29%, n=10).

History of health disorders and use of mental health services

According to the data collected history of implied (no diagnosed) physical illness was reported in 39% (n=57) of suicide completers, significantly more frequently in women than men (56%, n=38 vs. 34%, n=19 suicides; p=0.027). As reported, of these, 56% (n=20) of men and 73% (n=14) of women regularly visited family doctors and specialists. Having any physical health condition was most common among the suicide completers at age 50 to 70 years (53%, n=16/30) followed by those at age 30–50 years (37%, n=20/55), and lowest at age 18–30 years (24%, n=10/42). Cardiovascular system disorders (5.5%), metabolism or nutritional disorders (5.5%) were the most common followed by general or unspecified health problems (7.6%), musculoskeletal disorders (4.1%) and cancer (4.1%) (Table 3).

According to the data collected through interviews a lifetime history of diagnosed mental disorder have had reported in 29% (n=42) of suicide completers: 23% (n=26) of men, 47% (n=16) of women. More than a third (37%, n=54) of all suicide completers had history of mental disorders treatment with higher proportions for women (59%, n=20) than men (31%, n=34). The diagnosed mental disorders were treated and managed in several ways (Figure 2).



* p<0.005 men vs. women

Figure 2. Reported treatment of mental disorders according to gender

Medication use and visit to psychiatrist were more prevalent treatment of mental disorder with a higher proportion among women (40.6% and 37.5% respectively) than men (22.2% and 13% respectively).

The use of alcohol was reported in 50% (n=73) of all suicide completers. As reported, 14% (n=20) used alcohol on an irregular basis and 35% (n=50) on a regular basis. In line with the higher proportion of men suicide completers, the majority of alcohol users were men: 51% (n=57) of men vs. 44% (n=15) of women.

There is evidence that mental health may be associated by the use mental health services utilization. Over a third (32%, n=46) of all suicide completers were in contact with general practitioner 1-month prior their death, 9% (n=13) were admitted to a psychiatric hospital, while 10% (n=14) were referred for treatment to a psychiatric service.

DISCUSSION

This study analyzed of 145 adult suicide completers, who died by suicide during 2017–2019 years, using a psychosocial suicide autopsy method and interviewing relatives/acquaintances/friends or people who know well the suicide completers. Our pilot analysis is the one-dimensional trend that evaluates factors related to suicide as isolated and not as multiple, interacting factors. First, an initial analysis was performed according to frequency of variables, with the purpose of describing the studied sample.

Our study results presented sociodemographic characteristics of suicide very close to what is already known in the previous studies in Lithuania [9, 10, 11]. For example, gender is one of the most frequently replicated predictors for suicide; while rates of suicide in most countries are higher in males than females [12, 13].

In our study, among suicide completers female male ratio was 1:3. In most country men have higher rates than women, ranging from 3:1 to 7.5:1. According to data provided by the Institute of Hygiene in Lithuania, men are five times more likely to commit suicide than women [4]. Two exceptions are China and India, where suicide ratio are contrary: women have higher rates than men [14].

In our study women were significantly older than men. Among female suicide completers most were aged 18–30 (26%) and 70+ (26%) followed 41–50 (18%). Around two thirds (65%) of women were never married or widowed. The highest suicide risk is for middle-aged (45–59) and over 75 years old women [4]. Consistent with many (but not all) studies, lived alone and never married were found to be significant risk factors for the middle-aged suicides in our study [15–17].

In our study, women had a significantly higher prevalence of a history of suicide attempts than men. There are several possible explanations. First, women's greater vulnerability to suicidal behavior is likely to be due to gender related vulnerability to psychopathology and to psychosocial stressors [16]. Second, men choose more lethal method to commit suicide than women, while women tend to use self-poisoning for suicidal acts, which often have low lethality [18].

In our study, among suicide completers 30% of men and 26% of women were young adults aged 18 to 30 years, followed by middle-aged men (21%) and women aged 70+

(26%). Lithuanian statistics are similar – mostly suicide rates are in the middle age groups (35–54 years) and older age group (55–75 years). There were 29 suicides by young people aged under 25 (23 men, 6 women). These results are in line with previous studies indicating higher number of male committing suicide who was mid-aged and living in urban area [4]. This distribution according to age may be related to a nonlinear relationship between suicide risk and age. A separate analysis requires a middle-aged group.

Our study revealed, that both men and women share many experienced difficulties. The difficulties most commonly reported by interviewing relatives/friends of suicide completers by decreasing order of magnitude were: relationship problems, family conflicts and health problems were the most frequently reported life events associated with both men and women suicides. There were differences between men and women in terms of experienced difficulties, with financial problems and difficulties in work noted for men and bereavement and health problems for women.

Our study confirmed previous findings, that the most common method of suicide remains hanging, both for males and females [4, 19]. In our study, jumping/drowning was the second most common suicide method, whereas only eight men used firearm. Women were more likely to use jumping from a height, poisoning and drowning as suicide method. In general, men tend to choose more violent means (eg., hanging or shooting) and women less violent methods. (eg., self-poisoning) [18, 20].

According to our data half of those who committed suicide had a problem with alcohol. In line with the higher proportion of men suicide completers, the majority of alcohol users were men. McGirr and coworkers (2006) concluded that despite a lower prevalence of suicide among females, high levels of impulsivity and alcohol abuse appear to be valid risk factors for both genders [17]. The findings emphasize that more attention should be focused on evaluating alcohol use and the risk of alcohol dependence on suicide [21, 22].

The role of physical illness and life problems in contributing to suicide is potentially important with regard to suicide prevention. Mental disorders, greater social isolation, dealing with stressful life events, and having personality traits are associated with suicide risk, physical illness and functional impairment [23]. According to our data collected through interviews, nearly a third of all suicide completers could have mental health problems, and could be treated from mental disorders before death, and could be contacted to their family practitioner one month before death.

Case-control psychological autopsy studies have firmly established risk associated with some mental disorders including major depressive episodes and alcohol dependence [24] providing critical information for prevention efforts. The systematic review of Cavanagh et al. (2003) found that the mental disorders had the strongest associations with suicide [24]. The mental disorder, as currently defined, is a relatively homogeneous concept in most cultural groups but psychosocial factors are less so. Thus, reports of high relative and attributable risks associated with unemployment may be overestimates due to lack of controlling for the association with mental disorder [24, 25]. Nevertheless, that people rarely approach mental health professionals when faced

with difficulties in Lithuania [26] other authors suggest that improving the detection and treatment of all disorders, particularly in primary care, may be the most effective way of reducing suicide rates [24, 27].

This study provides crucial insights into suicide in Lithuania; strength of the study is large number of cases; however, our results should be considered and interpretation with caution given these limitations. First, the psychosocial autopsy method and necessary use of a proxy informant. All subjects were characterized used proxy-based interviews, family members of suicide completers were sources of information, therefore may bias results due to the shame and stigma around suicide deaths and other aspects. Second, the cross-sectional design of this study may not allow determination of causality. Third, the suicide completers in the study were not controlled with a healthy group. Our results cannot be generalized beyond our sample population.

CONCLUSION

Our results revealed differences among men and women in sociodemographic characteristics, and psychosocial factors. In summary, among suicide completers most were young adults

of both genders aged 18 to 30 years, followed by middle-aged men and women aged 70+. The most prevalent perceived difficulties prior suicide, by decreasing order of magnitude, among men were interpersonal stressors, family conflicts, problems in work and financial difficulties, while among women were health problems, and bereavement. Among suicide completers, compare with men, a higher proportion of women: were widowed, experienced a history of suicide attempts, had health problems, mental disorders treatment by medication use and regularly visited family doctors and other specialists. Subjects of both genders had history of committed suicide in their family, but a higher proportion of men suffered from drug and alcohol abuse.

These data provide scientific knowledge on gender differences of suicide completers in different socio-cultural contexts, and may be useful for suicide prevention oriented to gender.

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