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## History of sexual abuse and suicide attempts in alcohol-dependent patients

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### Introduction

The prevalence of sexual abuse varies depending on the examined population and methodology of a study. However, the proportion across all the studies may be considered epidemic as the figures of lifetime sexual abuse range from 4 to 16% in males and from 16% to 25% in female populations (Banyard, Williams & Siegel, 2004; Dube et al., 2005; Leserman, 2005). History of childhood sexual abuse is considered an important risk factor for different psychiatric disorders emerging during adulthood (Maniglio, 2009a). In several studies associations between sexual abuse and depression (Chen et al., 2010; Chou, 2012; Maniglio, 2010), bipolar disorder (Maniglio, 2013c), anxiety disorder (Chen et al., 2010; Chou, 2012; Fergusson, McLeod & Horwood, 2013; Maniglio, 2013a), illicit drug dependence (Fergusson et al., 2013), posttraumatic stress disorder (Chen et al., 2010; Chou, 2012), sleep disorders (Chen et al., 2010), and eating disorders (Castellini et al., 2013; Chen et al., 2010; Chou, 2012; Fullerton, Wonderlich & Gosnell, 1995) were revealed. Sexual abuse was also shown to be associated with the course of bipolar disorder (Maniglio, 2013b) as well as psychotic disorders (Sheffield, Williams, Blackford & Heckers, 2013). Notably, in most studies associations persisted regardless of the victim's sex or age within childhood when abuse occurred (Banyard et al., 2004; Chou, 2012).

An association has also been reported (Fergusson et al., 2013; Maniglio, 2011a; Wilsnack & Wilsnack, 1995), showing that childhood sexual abuse substantially increases the risk of problem drinking as well as alcohol use disorders in both male and female victims. In addition higher rates of sexual victimization experienced in childhood are suggested to explain higher rates of substance use disorders among sexual minorities (Hughes et al., 2010). Notably, the association between childhood sexual abuse and problem drinking was

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#### Disclosures

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shown to persist in general population (Wilsnack & Wilsnack, 1995) and in specific clinical samples (Brown, McBride, Bauer & Williford, 2005; Fullerton et al., 1995).

However, whether the risk to develop alcohol use disorders stems from childhood sexual abuse *per se* versus high-risk family factors that predispose to both sexual abuse and alcohol-related problems is unclear. Family dysfunction, parental substance problems, and parental psychiatric disorders may predispose to both childhood sexual abuse and the development of alcohol dependence (Maniglio, 2011a). Notably, the experience of sexual abuse in childhood has also been associated with a greater likelihood of marrying an alcohol-dependent individual (for both men and women; Dube et al., 2005).

The experience of childhood sexual abuse has also been shown to be an important predictor of suicidal behaviors (Bruffaerts et al., 2010; Chen et al., 2010; Fergusson et al., 2013; Maniglio, 2011b), with childhood victims having more than four times the risk of suicide attempts later in their lifetime. Also, in the general female population, the experience of child sexual abuse was shown to be associated with heavy episodic drinking (Wilsnack & Wilsnack, 1995) which is considered to be the most risky pattern of drinking in terms of suicide attempt risk (Cornelius et al., 1996). However, most studies did not control for overlap with other high-risk factors, especially sociodemographic variables (such as social support, employment, alcohol use, and physical abuse; Maniglio, 2011b) that may coexist with childhood sexual abuse and increase the risk of suicide attempts. For example, one study of Malaysian youth found that childhood sexual abuse was a more important risk factor for suicide attempts than drinking alcohol (Chan et al., 2013). However, other sociodemographic factors were not taken into consideration in this study.

It has been shown that suicide attempts occur significantly more frequently in alcohol-dependent individuals than healthy ones. In alcohol-dependent individuals, the lifetime prevalence of suicide attempts and suicide is estimated to be 14 – 44% (Weissman, Myers & Harding, 1980; Wojnar M, 2008) and 7 – 18%, respectively (60–120 times higher than in healthy individuals; Inskip, Harris & Barraclough, 1998; Murphy & Wetzel, 1990; Murphy, Wetzel, Robins & McEvoy, 1992).

These two problems of high prevalence, alcohol dependence and childhood sexual abuse, coexist commonly and remain important risk factors of suicide attempts. Associations among these factors have been studied thoroughly in terms of psychiatric comorbidity and substance use (Bohnert, Roeder & Ilgen, 2011; Joiner et al., 2007; Kingree, Thompson & Kaslow, 1999; Wines et al., 2004). However, associations between history of sexual abuse and suicide attempts have not been studied thoroughly in the context of a comprehensive sociodemographic approach in alcohol-dependent individuals. Moreover, except for the study by Wines et al. (Wines et al., 2004), most of the studies accounted only for significance of childhood sexual abuse and did not take into consideration adulthood abuse, which was also shown to be a common life experience, frequent especially among previously maltreated individuals (Basile, Chen, Black & Saltzman, 2007; de Haas, van Berlo, Bakker & Vanwesenbeeck, 2012). Adulthood sexual abuse has been also shown to be a much more frequent experience in the lives of individuals having alcohol or other drugs

problems, especially among those having co-occurring substance problems and severe psychiatric disorders (Maniglio, 2009b).

## Aims

The aim of this study was to investigate the prevalence of lifetime, childhood and adulthood sexual abuse in a sample of Polish alcohol-dependent patients. In addition, we compared the characteristics of alcohol-dependent patients who were and were not sexually abused. Moreover, considering the lack of studies controlling for other well-recognized predictors of suicide attempts (severity of alcohol dependence, physical abuse history, psychiatric disorders in the family, unemployment, poor economic status, low social support; Modesto-Lowe, Brooks & Ghani, 2006; Murphy et al., 1992; Preuss et al., 2002; Sher, 2006a), we aimed at assessing all these social and demographic factors in order to compare their relative contribution to suicide attempts in relation to the history of childhood sexual abuse.

We hypothesized that alcohol-dependent patients with a history of childhood sexual abuse would be significantly more at risk of a lifetime suicide attempt than alcohol-dependent individuals without such experience. We also hypothesized that, considering its specifically traumatic nature early in life, the experience of sexual abuse would be an independent risk factor for suicide attempts and would remain significant after controlling for other sociodemographic factors.

## Methods

### Participants

The study was performed in accordance with the ethical principles described in the Declaration of Helsinki in 1964 and received approval from the Medical School Institutional Review Board at the University of Michigan and the Bioethics Committee at the Medical University of Warsaw.

The study recruited a group of 404 alcohol-dependent individuals entering abstinence-based, drug-free treatment programs in Warsaw, Poland. From this group, 386 participants were finally enrolled in the study, and 18 were excluded based on criteria described below. All participants gave written informed consent after the study protocol was explained and their questions were answered. The inclusion criteria included age over 18 and a current diagnosis of alcohol dependence according to the DSM-IV criteria (APA, 2000). The diagnosis of alcohol dependence was first established clinically and then confirmed with the MINI International Neuropsychiatric Interview (Sheehan et al., 1998). Patients with a history of psychosis or a co-occurring psychiatric disorder requiring current medication ( $n = 5$ ) were excluded from the study. Moreover, patients with acute alcohol withdrawal symptoms ( $n = 6$ ) or with clinically significant cognitive deficits ( $n = 7$ ; less than 25 on the Mini-Mental State Examination (Folstein, Folstein & McHugh, 1975) were not eligible to participate.

### Procedures

All participants were asked to complete a questionnaire to assess demographics and psychosocial variables. Questions concerning a lifetime history of suicide attempts was

asked by a trained member of the research team, using a semistructured instrument (see below).

## Measures

1. Questions regarding education, marital status, employment, economic status, family history of suicidal behavior, family history of psychiatric problems, and experiences of sexual and physical abuse before or after age of 18 were obtained using a modified version of the University of Arkansas Substance Abuse Outcomes Module (SAOM), a self-administered questionnaire (Smith, Ross & Rost, 1996) that was translated into Polish. Economic status was assessed with the question: "Do you have enough money to take care of your financial needs?" The answer was dichotomized as yes/no. In addition, questions concerning sexual abuse were: "Did you have sexual contacts that were against your wishes before 18 years of age?" and "Did you have sexual contacts that were against your wishes after 18 years of age?"
2. Lifetime history of suicide attempts was evaluated with question from the MINI International Neuropsychiatric Interview: "During the lifetime, have you ever tried to commit a suicide?" (Sheehan et al., 1998), using an available Polish version of MINI (Masiak & Przychoda, 1998).
3. The severity of alcohol dependence was evaluated using the Michigan Alcoholism Screening Test (MAST; Selzer, Vinokur & van Rooijen, 1975), which is self-administered scale that contains 25 yes/no items. It yields an overall score ranging from 0 to 53, because some items are weighted. Although originally designed as a diagnostic screening tool, it correlates strongly with the Alcohol Dependence Scale ( $r=0.79$ ), a measure of problem severity (Ross, Gavin & Skinner, 1990). Higher scores indicate greater severity. A Polish version was used in this study (Falicki, Karczewski, Wandzel & Chrzanowski, 1986; Habrat, 1988).
4. The level of social support was evaluated using the Medical Outcomes Study Social Support Survey (MOSSSS; Sherbourne & Stewart, 1991). The MOSSSS is a 20-item self-administered questionnaire with one question that measures the number of close of friends and relatives who are available for support and 19 items that assess perceived level of social support. The 19 items are each scored on a 5-point Likert scale with higher scores indicating more perceived support. The scale was validated on 2987 adults with chronic disease (hypertension, diabetes, coronary heart disease, or depression) resulting in a Cronbach's alpha of 0.97. A principal components analysis supported an overall support index with loading for each of the items ranging from 0.67 to 0.88. The MOSSSS was translated for this study into Polish and then back-translated in order to check the accuracy of the Polish version.

Given the results of studies confirming the psychopathological consequences of sexual abuse regardless of the victim's sex (Banyard et al., 2004; Chou, 2012), we conducted statistical analyses with the combined group of male and female participants.

## Statistical analysis

The statistical analysis was performed with Statistica 10.0 software and SPSS for logistic regression analysis. All continuous data were checked for normal distribution with the Kolmogorov–Smirnov test. Data are presented as arithmetic means and standard deviations (SD) for parametric variables. For non-parametric variables, data are presented as medians and quartiles (25;75).

## Main outcome measures

Analyses were conducted in three steps. First, participants with and without a history of lifetime sexual abuse were compared to evaluate and describe characteristics of alcohol-dependent individuals who experienced this kind of trauma. For continuous variables, independent t tests and Mann-Whitney tests were used- to assess significant differences for normally and non-normally distributed variables, respectively. Dichotomous variables were analyzed with chi square tests. Comparisons between groups were deemed significantly different if a two-tailed test was  $p < .05$ .

In the second step, bivariate comparisons of sociodemographic characteristics in individuals with and without a lifetime history of at least one suicide attempt were performed. In this step *childhood* sexual, as well as *childhood* physical abuse were taken into consideration. Third, all variables that were significantly associated with suicide attempts at a value of  $p < .05$  in bivariate analyses were entered simultaneously and forced to remain in a logistic regression analysis in order to determine the strongest and independent correlates of lifetime suicide attempts in alcohol-dependent individuals.

## Results

### Demographic characteristics

The study group comprised 284 men (73.6%) and 102 (26.4%) women. The mean age of participants was  $43.4 \pm 9.9$  years. All patients were Caucasian. At the moment of conducting the study 61.6% of participants were unemployed and about 62% of participants rated their income as inadequate to meet their needs. The median level of education was 12 years (the last level of secondary school in Poland). More than 36% of the study group confirmed legal problems in their lifetime. The mean age at onset of alcohol-related problems was  $24.5 \pm 9.2$  years; 42.5% of participants endorsed an experience of physical abuse during their lifetime; 61.1% of patients confirmed alcohol problems in the family, 19.9% had psychiatric problems in the family and 14.5% reported a history of either suicide or suicide attempts in their family.

### Sexual abuse

Among the full study group, 15.8% (61 individuals) reported a history of sexual abuse during lifetime. When analyzed by gender 7.4% of male and 39.2% of female patients had a lifetime history of sexual abuse. Among the 61 individuals with lifetime sexual abuse, 35 cases (57.4%; 21 women and 14 men) experienced it before 18 years of age. In this group, 19 (54.3%; 11 women and 8 men) patients also admitted being a victim of sexual abuse also during adulthood. In summary: 26.2% of the 61 participants with a lifetime history

experienced sexual abuse only before 18 years of age, 42.6% - only after 18 years of age, and 31.1 both before and after 18 years of age.

The detailed comparison of individuals with and without a history of sexual abuse is presented in table 1.

### Suicide attempts

A total of 123 individuals (31.9% of the study group; 89 men and 34 women) reported at least one suicide attempt during their lifetime. When analyzed by gender – 31.3% of male and 33.3% of female participants confirmed at least one lifetime suicide attempt.

We found a significant association between suicide attempts and a childhood history of sexual abuse ( $\chi^2=6.78$ ;  $df=1$ ;  $p = .009$ ) as well as childhood history of physical abuse ( $\chi^2=9.38$ ;  $df=1$ ;  $p = .002$ ). We also observed that the experience of revictimization was significantly associated with a lifetime history of a suicide attempt ( $\chi^2=6.24$ ;  $df=1$ ;  $p = .01$ ). When analyzed separately by gender, childhood history of sexual abuse was significantly associated with lifetime suicide attempts in women ( $\chi^2=6.74$ ;  $df=1$ ;  $p = .009$ ), but not in men ( $\chi^2=0.91$ ;  $df=1$ ;  $p = .34$ ). The detailed comparison of alcohol-dependent patients with and without a lifetime history of suicide attempts is presented in Table 2.

### Multivariable analysis

When entered into a logistic regression analysis with all seven variables that were significant in bivariate analyses, the experience of *childhood* sexual abuse was the strongest predictor of a suicide attempt in alcohol-dependent patients (OR=2.52; 95% CI [1.07, 5.94];  $p = .035$ ). A childhood history of physical abuse, social support as an adult, and family history of suicidal behavior were no longer significant after including them in the logistic regression model for predicting a lifetime history of suicide attempt (Table 3). When the experience of revictimization was put into the logistic regression model instead of childhood sexual abuse, it was also a significant predictor of lifetime suicide attempt (OR=3.21; 95% CI [1.01, 10.2];  $p = .048$ ).

### Discussion

The results of our study confirm that sexual abuse might be a common and important experience in individuals with alcohol dependence. Almost 40% of women taking part in the study reported a history of sexual abuse during their lifetime, which is almost double the prevalence of sexual abuse that was observed in most general population studies (15–25% women; Leserman, 2005) and is almost three times the prevalence of childhood sexual abuse for women in Poland (11–16%; Beisert, 2012). On the other hand, a recent large epidemiologic survey in the Dutch population found prevalence rates of sexual violence for women as high as 56% (de Haas et al., 2012).

The prevalence of childhood sexual abuse for men in our study (7.4%) is comparable to the general population (4–16% in men; Leserman, 2005) and in the male population in Poland (6–18%; Beisert, 2012). However, the revictimization rates from childhood to adulthood—number who were first abused in childhood and subsequently abused as adults divided by the

total number of those abused in childhood—of almost 60% for men and more than 50% for women in our study may be considered very high, even if compared to the very high numbers in the Dutch study (de Haas et al., 2012). Importantly, when the experience of revictimization was put into the logistic regression model for predictors of lifetime suicide attempts instead of childhood sexual abuse, it was a stronger predictor than childhood sexual abuse itself (OR=3.21 vs. 2.52). This underlies the significance of revictimization in the risk for suicide attempts during adulthood.

Notably, the data collected in the present study may be (especially in men) underestimated, as in other studies concerning sexual abuse based only on self-report data (Banyard et al., 2004). This would probably explain the fact that when analyzed separately in male participants, we observed no statistical association between childhood sexual abuse and suicide attempts. Regardless the specific numbers, the observation that (in comparison to general population) the experience of sexual abuse is more frequent in alcohol dependent women, but not in alcohol dependent men is interesting and consistent with theories pointing for psychopathological background of drinking in women (self-treatment) and other mechanisms of developing alcohol dependence in men (novelty seeking, reward craving; Nolen-Hoeksema & Hilt, 2006).

As reported by the World Health Organization (<http://apps.who.int/gho/data/node.main.GISAH>; [http://www.who.int/mental\\_health/prevention/suicide/suicideprevent/en/](http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/)), the average alcohol consumption per capita in Poland is comparable to other European countries and significantly higher than in countries on other continents. The Polish specificity reflects risky patterns of drinking (heavy episodic drinking, as described in the introduction), younger age of suicide attempts (15 to 21 years of age) as well as method used (90% of completed suicide in Poland in 2009 were done by hanging (Hofer et al., 2012). The prevalence of suicide attempts in Poland is similar to other European countries, but higher than in the United States (17.0 vs. 12.3 per 100,000) (Hoyert & Lu, 2012). Notably, the experience of sexual abuse was shown to be associated with heavy episodic drinking (Wilsnack & Wilsnack, 1995) as well as impulsive (but not more lethal) methods of suicide attempts (Spokas, Wenzel, Brown & Beck, 2012).

The clinical population of individuals with the highest frequency of childhood sexual abuse is the group of pedophilic child molesters. According to some studies, prevalence of childhood sexual abuse in this group of participants may be even 70 – 90% (Beisert, 2011). This fact remains one of the basics of the *abused abuser* theory (Krasowska et al., 2013). Although we did not collect information regarding the number of perpetrators in our sample, alcohol-dependent patients with a childhood abuse history were more likely to have parents with alcohol problems than those without such as history. In turn, children of alcohol-dependent patients, if the latter were sexually abused as children, may themselves be at higher risk for childhood sexual abuse, both because their parents were sexually abused as children and because their parents have alcohol dependence.

As expected, the statistical analysis revealed that alcohol-dependent individuals with a history of sexual abuse experienced more severe psychopathological problems in the family, as manifested by suicidal behavior and general psychiatric problems. Unexpectedly, the

comparison of sociodemographic factors concerning current social functioning showed that, apart from lower social support, there were no significant differences in terms of education, employment, marital and economic status as well as legal problems between patients with and without experience of sexual abuse. Moreover, we observed a statistical trend ( $p = .05$ ) for sexually abused individuals to suffer from less severe symptoms of alcohol dependence. This provides an interesting perspective that in the population of alcohol-dependent patients, an experience of sexual abuse increases the risk for suicide attempts, even though some markers of social functioning were intact in sexual victims. An exception was social support, which was both lower in victims of sexual abuse and predicted suicide attempts.

Our results replicate findings of other research studies reporting that several sociodemographic factors may contribute to the risk of suicide attempt. Similar to other studies (Sher, 2006b), lack of employment, poor economic situation, and low social support were associated with the risk of suicide attempts in alcohol-dependent individuals. Moreover, our results are consistent with the hypothesis that severity of alcohol dependence is associated with frequency of suicide attempts (Sher, 2006b).

The novel finding of our study is that a lifetime experience of sexual abuse was an independent predictor of suicide attempts and remained significant after controlling for other sociodemographic factors. Moreover, the lifetime experience of sexual abuse was the strongest predictor of lifetime suicide attempts in alcohol-dependent patients. To the best of our knowledge and also confirmed by a recent review of literature (Maniglio, 2011b), this is the first study to put sexual abuse in a comprehensive model of other sociodemographic variables in this group of patients. Our results indicate that history of sexual abuse may be a robust predictor of suicide attempts in alcohol-dependent individuals, independent from social problems, parental substance abuse or parental psychiatric disorder.

The results of the multivariable analysis show that physical abuse was no longer significant after putting into the model together with experience of sexual abuse. This observation suggests that, despite the fact that physical and sexual abuse commonly coexist (70% of patients with history of sexual abuse also disclosed physical abuse in the lifetime) sexual abuse may carry traumatic and fearful experience that outweighs the significance of physical violence itself.

Another interesting observation from the multivariable analysis is that a history of family psychiatric problems remained significant whereas a family history of suicidal behavior did not. A suicide attempt or completed suicide in the family is a well-recognized, important risk factor for suicide attempts (Mann, 2003; Preuss et al., 2002), potentially reflecting genetic factors as well as family environment to suicidal behavior. Nevertheless, only a history of family psychiatric problems remained significant in multivariate model. Notably, this model is consistent with the hypothesis that familial transmission of suicidal behavior may be mediated by the familial transmission of abuse (Brent, 2010) and/or psychiatric severity rather than suicide tendencies themselves.



## Limitations

The study has several limitations that have to be noted. The study protocol employed a retrospective design and pertains only to suicide attempts, not suicide or non-suicidal self-directed violence. Therefore, the identified predictors should only be specified as predictors of suicide attempts. Moreover, we analyzed neither the characteristics of previous suicide attempts (such as severity, lethality, or quantity) nor details of sexual abuse (such as: severity and number of times over what duration, the nature of the relationship between the victim and the perpetrator). According to a recent study by Cankaya et al. (Cankaya, Talbot, Ward & Duberstein, 2012), childhood sexual abuse perpetrated by a parent is associated with a significantly higher risk of suicide attempts compared with non-parental sexual abuse. However, these results were not confirmed in a recent study by Wherry et al. (Wherry, Baldwin, Junco & Floyd, 2013), suggesting a need for further research.

The term “sexual contacts” used in the specific questions concerning sexual abuse may be considered broad and difficult to define when the English language is in use. In addition, these two questions were not validated. However, in Polish culture and language “sexual contacts” are commonly understood by sexual penetration (vaginal, oral, anal) or other behaviors aimed at sexual satisfaction. Notably, in medical textbooks as well as formal education materials “sexual contacts” are a medical term used to describe the way of transmitting infectious diseases (see for example [www.aids.gov.pl](http://www.aids.gov.pl)). Therefore “sexual contacts” in our study group would be understood (with great probability) by the most serious forms of sexual behavior.

Finally, the study group comprised only patients who voluntarily entered treatment for alcohol dependence – individuals who were likely to have more severe consequences of alcohol drinking. Therefore, this group of patients cannot be considered fully representative of the population of all alcohol-dependent individuals. Moreover, as mentioned in the introduction, the contribution of sexual abuse to suicidal behavior may be confounded or mediated by psychiatric severity, which was not evaluated in this study. This may be considered a weakness of the project; however, our objective was to evaluate only social and demographic factors – ones that may be easily identified and evaluated – resulting in a relatively simple model of predictors for lifetime suicide attempts. In addition, we aimed at comparing the relative contribution of specific sociodemographic factors, which might have been blurred by including psychiatric comorbidity in the analysis.

## Conclusions

In conclusion, the results of our study suggest that a lifetime experience of sexual abuse may be a significant and independent risk factor of suicide attempts in alcohol-dependent individuals. Other sociodemographic factors that were significant in the logistic model are generally easy to identify and consider in screening groups at high risk for suicidal behaviors. These results may be useful in clinical practice when managing alcohol-dependent patients with an experience of lifetime sexual abuse.

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**Table 1**

Comparison of patients with and without lifetime history of sexual abuse

	<b>History of sexual abuse</b>	<b>No history of sexual abuse</b>	<b>p value</b>
Age (years)	41.5±9.7	44.2±9.9	0.058
Gender (females; %)	65.6	19.1	<b>&lt;0.000005</b>
Education (number of classes completed)	12.0±3.1	12.1±2.5	0.76
Employment (unemployed; %)	62.3	62.3	0.99
Lifetime history of physical abuse (%)	70.5	37.2	<b>&lt;0.000005</b>
Family history of psychiatric problems (%)	32.8	17.6	<b>0.006</b>
Family history of alcohol problems (%)	75.4	58.5	<b>0.01</b>
Suicide attempt or completed suicide in the family (%)	25.4	13.0	<b>0.003</b>
Social support (MOSSSS)	55.1±19.1	62.5±17.7	<b>0.004</b>
Severity of alcohol dependence (MAST)	32.26±10.3	34.8±9.1	0.05
Economic situation (enough money for needs, %)	36.7	37.3	0.93

MOSSSS — Medical Outcomes Study Social Support Survey, MAST — Michigan Alcoholism Screening Test. The values are presented in percentages, and means and standard deviations (mean±SD). For non-parametric variables, median and quartiles (25;75) are presented; p-values<0.05 are **bold**.

**Table 2**

Comparison of patients with and without lifetime history of suicide attempt

	History of suicide attempt	No history of suicide attempt	p value
Age (years)	41.3±9.5	44.9±9.9	<b>0.0008</b>
Gender (females; %)	27.6	25.9	0.71
Education (number of classes completed)	11.87±2.9	12.2±2.5	0.29
Employment (unemployed; %)	69.1	59.1	0.059
History of physical abuse in childhood(%)	38.2	23.2	<b>0.002</b>
History of sexual abuse in childhood (%)	14.6	6.5	<b>0.009</b>
Family history of psychiatric problems (%)	30.9	14.9	<b>0.00025</b>
Family history of alcohol problems (%)	64.2	59.7	0.395
Suicide attempt or completed suicide in the family (%)	22.3	11.5	<b>0.0073</b>
Social support (MOSSSS)	57.2±19.6	63.2±17.1	<b>0.003</b>
Severity of alcohol dependence (MAST)	37.0±9.3	33.2±9.1	<b>0.0002</b>
Economic situation (enough money for needs, %)	24.4	43.2	<b>0.002</b>

MOSSSS — Medical Outcomes Study Social Support Survey, MAST — Michigan Alcoholism Screening Test. The values are presented in percentages, and means and standard deviations (mean±SD). For non-parametric variables median and quartiles (25;75) are presented; p-values<0.05 are bold.

**Table 3**

Multivariate model of logistic regression analysis for the prediction of lifetime history of suicide attempt

	<b>OR</b>	<b>95%CI</b>	<b>p</b>
<b>History of sexual abuse in childhood</b>	<b>2.522</b>	<b>1.07–5.94</b>	<b>0.035</b>
<b>Family history of psychiatric problems</b>	<b>2.176</b>	<b>1.22–3.89</b>	<b>0.009</b>
<b>Economic situation</b>	<b>1.447</b>	<b>1.10–1.90</b>	<b>0.008</b>
<b>Severity of alcohol dependence (MAST)</b>	<b>1.038</b>	<b>1.01–1.06</b>	<b>0.008</b>
Age	0.976	0.95–1.01	0.063
Social support (MOSSSS)	0.988	0.97–1.02	0.091
History of physical abuse in childhood	1.157	0.67–1.99	0.597
Suicide attempt or completed suicide in the family	1.580	0.88–2.84	0.127

MOSSSS — Medical Outcomes Study Social Support Survey, MAST — Michigan Alcoholism Screening Test

95%CI – 95% confidence interval p values &lt; 0.05 are bolded

Model:

**R square (Nagelkerke) = 0.200**

chi square = 56.47; df=8; p&lt;0.0005