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Suboptimal parenting practices as a risk factor for adolescent alcohol consumption in Ukraine

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BACKGROUND: The objective of this study was to investigate the association between alcohol use by adolescents and relationships with parents and parenting practices in Ukraine. For this analysis, the nested case-control study design was used with pooled data from 1999, 2003, and 2007 surveys of repeated cross-sectional study "European School Survey Project on Alcohol and other Drugs".

METHODS: A nationally representative sample of classes in Ukrainian secondary schools was used. The target population consisted of all 15-16-year-old students in Ukraine. Complete data were available for 10,494 participants. Main exposures were perceptions of the relationships with one's mother and father, rule-setting, control, and support provided by parents. Outcome measures were: regular use of alcohol, drinking to the point of intoxication, and age when students start consuming alcohol. Associations between the determinants and outcome measures were analyzed using multivariate binary logistic regression analysis.

RESULTS: Adolescents who were not so satisfied with the relationships with their mothers were

nearly twice as likely (OR=1.7; 95%CI=1.2-2.5) to have used alcohol 10 or more times during the last 30 days. Adolescents who were not at all satisfied with their relationships with father were at risk of drinking to the point of intoxication at least once during last year (OR=1.4, 95%CI=1.2-1.8).

Adolescents whose parents never know whom he/she spends evenings with were nearly twice as likely (OR=1.8, 95%CI =1.3-2.4) to have used alcohol 10 or more times during the last 30 days. However, the relationships between rule-setting by parents, perceived support and alcohol use were not consistent.

CONCLUSION(s): This study supports the hypothesis that the dissatisfaction with the relationships with one's mother, unlike the dissatisfaction with the relations with one's father, may be a risk factor for regular alcohol use among adolescents. Besides, our results denote the negative association of parental support and control with adolescent alcohol use.

KEY WORDS: adolescents, alcohol use, risk factors, parenting style.

Неоптимальный стиль воспитания как фактор риска употребления алкоголя подростками в Украине

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АКТУАЛЬНОСТЬ: Целью этого исследования было изучение связи между употреблением алкоголя подростками и отношениями с родителями/ стилем воспитания в Украине. Для этого анализа были использованы сведенные данные регулярного Европейского опроса учащейся молодежи об употреблении алкоголя и наркотических веществ, проведенного в 1999, 2003 и 2007 годах.

МЕТОДЫ: Опрос был проведен на национально-репрезентативной выборке классов в средних, средних специальных учебных заведениях и вузах I-II уровней аккредитации в Украине. Целевая группа состояла из 15-16-летних учеников. Полные данные были доступны для 10494 участников. Основными детерминантами были удовлетворенность отношениями с отцом/ матерью, установление правил, контроль поведения и поддержка, которую получали ученики от родителей. Связь между детерминантами и результирующими переменными анализировалась с помощью многофакторной бинарной логистической регрессии.

РЕЗУЛЬТАТЫ: Исследование выявило связь между неудовлетворенностью отношениями с матерью и употреблением алкоголя подростками (соотношение шансов OR=1.7; 95% доверительный интервал CI=1.2-2.5). Но связь с неудовлетворенностью отношениями с отцом наблюдалась только для приема алкоголя до состояния опьянения (OR=1.4, 95%CI=1.2-1.8) и раннего возраста начала употребления алкоголя подростками.

Подростки, чьи родители никогда не знали, с кем они проводят время, с вероятностью почти в два раза выше (OR=1.8, 95%CI =1.3-2.4) употребляли спиртное 10 раз и более на протяжении последних 30 дней по сравнению с теми, чьи родители всегда знали, с кем те проводят время. Но связь между установлением правил, поддержкой родителями и употреблением алкоголя подростками наблюдалась только в некоторых регрессионных моделях.

ВЫВОДЫ: Это исследование поддерживает гипотезу о том, что неудовлетворенность отношениями с матерью, но не с отцом, может быть фактором риска регулярного употребления ал-

коголя подростками. Кроме того, наши результаты указывают на присутствие обратной зависимости между контролем и поддержкой со стороны родителей и употреблением алкоголя подростками.

КЛЮЧЕВЫЕ СЛОВА: подростки, употребление алкоголя, факторы риска, стиль воспитания.

Неоптимальний стиль батьківства як фактор ризику вживання алкоголю підлітками в Україні

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АКТУАЛЬНІСТЬ: Метою цього дослідження є вивчення співвідношення між вживанням алкоголю підлітками та стосунками з батьками і стилем батьківства в Україні. Для цього аналізу були використані зведені дані регулярного Європейського опитування учнівської молоді щодо вживання алкоголю та наркотичних речовин, проведеного у 1999, 2003 та 2007 роках.

МЕТОДИ: Опитування було проведене на національно-репрезентативній вибірці класів у середніх, середніх спеціальних навчальних закладах та ВНЗ I-II рівнів акредитації в Україні. Цільова група складалася з 15-16 річних учнів. Повні дані були доступні для 10494 учасників. Основними детермінантами були задоволеність стосунками з батьком/матір'ю, встановлення правил, контроль за поведінкою та підтримка, що отримували учні. Залежними змінними були регулярне вживання алкоголю, пиття до стану сп'яніння та вік початку вживання алкоголю. Зв'язок між детермінантами та залежними змінними аналізували за допомогою багатофакторної бінарної логістичної регресії.

РЕЗУЛЬТАТИ: Дослідження показало зв'язок між незадоволеністю стосунками з матір'ю та жи-

ванням алкоголю підлітками (співвідношення шансів $OR=1.7$; 95% довірчий інтервал $CI=1.2-2.5$). Однак, незадоволеність стосунками з батьком була пов'язана тільки з питтям до стану сп'яніння ($OR=1.4$, 95% $CI=1.2-1.8$) та раннім віком початку вживання алкоголю підлітками.

Підлітки, чиї батьки ніколи не знають, з ким вони проводять час, майже вдвічі більш ймовірно ($OR=1.8$, 95% $CI=1.3-2.4$) вживали алкоголь 10 разів і більше протягом останніх 30-ти днів, порівняно з тими, чиї батьки завжди знали про їх місцеперебування. Але зв'язок між встановленням правил та підтримкою батьками і вживанням алкоголю спостерігався лише в окремих регресійних моделях.

ВИСНОВКИ: Це дослідження підтримує гіпотезу, що незадоволеність стосунками з матір'ю, але не з батьком, може бути фактором ризику щодо регулярного вживання алкоголю підлітками. Крім того, наші результати вказують на наявність зворотної залежності між контролем та підтримкою батьками і вживанням алкоголю підлітками.

КЛЮЧОВІ СЛОВА: підлітки, вживання алкоголю, фактори ризику, стиль батьківства.

INTRODUCTION

According to the theory of triadic influence (TTI), which integrates many behavioral theories into a comprehensive theory of health behavior, all behaviors originate in three domains: personality characteristics, current social situation, and cultural environment. (Pe-traitis, Flay, & Miller, 1995) Social risk factors associated with adolescent alcohol use include low socioeconomic status and minimal parental education, family disruption and conflict, weak family bonds, low parental supervision, parental permissiveness and lack of rules about alcohol use, family history of alcoholism, peer alcohol

use, perceived adult approval of alcohol use, and perceived peer approval of alcohol use. (Branstrom, Sjostrom, & Andreasson, 2008; Komro & Toomey, 2002; Latendresse et al., 2008; Petronyte, Zaborskis, & Veryga, 2007). Among parental factors, style of parenting, relationships with parents, level of parental monitoring and emotional support were found to be factors of alcohol use by adolescents. (Choquet, Hassler, Morin, Falissard, & Chau, 2008; Kokkevi et al., 2007; Ledoux, Miller, Choquet, & Plant, 2002)

When elaborating interventions to address early alcohol use among adolescents, public health profes-

sionals need to account for the factors related to social environment and parenting which are expected to interfere with the projected interventions. As a country with traditions of socially accepted alcohol use, Ukraine may be a good socio-cultural environment to explore familial influences. (Popova, et al., 2007)

There is no certainty that the risk factors identified in some countries will be the same in other countries. Hence, the information about parental style and relationships with parents as risk factors for alcohol consumption needs validation in the Ukrainian context, so that new preventative measures are

based on evidence. (Choquet, et al., 2008) Participation of Ukraine in all four waves of the European School Survey Project on Alcohol and other Drugs (ESPAD) gave the scientists an opportunity to obtain a large set of data about the frequency of alcohol consumption, intoxication with alcohol, binge drinking and different personality and socio-demographic characteristics of 15-16-year-old adolescents still attending schools. The aim of this study was to define if there is an association between regular alcohol use, drinking to the state of intoxication, and early initiation of alcohol use by adolescents and (1) the level of students' satisfaction with their relationships with their mother/father, (2) perceived rule-setting and control by parents, and (3) support provided by parents.

METHODS

Study Population

ESPAD is a repeated cross-sectional study that is conducted every four years aimed to collect comprehensive and comparable data on the use of tobacco, alcohol and other drugs among 15-16-year-old students in European countries. By now, four waves of ESPAD survey have been conducted in Ukraine: in 1995, 1999, 2003 and 2007, all done by the Ukrainian Institute of Social Research. The Ukrainian Institute of Social Research is an independent research institution that conducts nation-wide surveys in representative samples of adolescents, young people, and representatives of high-risk groups.

The surveys were conducted with a standardized methodology and a common questionnaire to provide as comparable data as possible. Data were collected with the use of

group-administered questionnaires at schools in nationally representative samples of classes. The questionnaire was developed from the battery of questions prepared by the Pompidou School Survey Subgroup. (Hibell B., 2007)

Assuming that 10% of students would be absent and that some selected classes would be unable to participate, ESPAD guidelines recommended a sample size of 2,800 students.

The target population consisted of all students in Ukraine born in 1979 for 1995 survey, in 1983 for 1999 survey, in 1987 for 2003 survey, and in 1991 for 2007 survey. Students that study in all types of schools in all 26 regions of Ukraine were eligible to be included into the sample. The sample was a two-stage stratified cluster sample. At the first stage, schools were randomly chosen. Each educational establishment was assigned individual number according to the category (secondary school in a city, secondary school in a village, vocational school, or college) and location. Further sampling was done for every category of educational establishment proportionally to the number of students of relevant age that study there. For sampling of schools, the method of random numbers was used. The method of systematic choice with predetermined step was used for sampling of vocational schools and colleges.

At the second step, classes/ groups were selected in each educational establishment using tables of random numbers. Only one class was included into the sample from each school.

In some cases, the questionnaire was answered by students not born in the target year of the survey.

They were included in the analysis if their age corresponded to the age of the students born in the target year (15-16 years old).

Data Collection

The Ukrainian Institute of Social Research had access to the regional network of research groups that were responsible for the data collection. The questionnaires were answered in classrooms under the supervision of a research assistant and under the same conditions as those for administering a written test. The students and schools were informed that the participation in the survey was voluntary, confidential, and anonymous. The written/formal permission from the Ministry of Education and Science of Ukraine had been obtained.

Study participants were recruited only among those students still at school and present in class on the day of the survey. Based on the information from the student register in each school, the response rate was 85% in 1995, 81% in 1999, 83% in 2003, and 82% in 2007. This represents students in participating classes who were not ill or absent for other reasons on the day of the survey. For this particular analysis, the study sample consisted of the students surveyed in years 1999, 2003, and 2007, since questions about family determinants were not included into 1995 questionnaire. Questionnaires were collected from 12687 students. Because it was permitted not to answer those questions that seemed obscene or inconvenient to students, there was certain number of missing answers for the variables that are analyzed in this study. Questionnaires with incomplete data on the outcome of interest or any of the factors used for multi-

variate analysis were excluded from the analysis. As a result, the final sample consisted of 10,494 students. The values of alcohol use variables of the students retained for the analysis did not differ significantly from the values of those excluded because of incomplete data.

Outcome measures

The measures of alcohol consumption were determined through the questions about frequency and patterns of alcohol use. To assess the practice of regular use of alcohol, the question “On how many occasions (if any) have you had any alcoholic beverage to drink? (during last 30 days)” was asked. The answers were used to construct the dichotomous variable: “Use of alcohol 10 times or more during last 30 days.”

To identify those who had ever been drunk, students were asked a question “On how many occasions (if any) have you been drunk from drinking alcoholic beverages; for example, you didn’t remember what happened, you walked unevenly, vomited or were not able to talk? (during last 12 months).” The indicator “Drunkenness at least once during last 12 months” was constructed.

To establish the age when the students started consuming alcohol, they were asked a question “When (if ever) did you FIRST do each of the following things? (drink beer (at least one glass); drink wine (at least one glass); drink spirits (at least one glass)). The variable “Drinking initiation at age of 13 or younger” was constructed for the analysis.

Determinants of the Study

The respondents were asked questions about their perceptions of the relationships with their mothers and fathers: “How satisfied are you usually with your relationships with your mother/ with your father?” The response options were as follows: (1) Very satisfied; (2) Satisfied; (3) Neither satisfied nor unsatisfied; (4) Not so satisfied; (5) Not at all satisfied.

To determine the level of rule-setting, control, and support provided by parents, the students were asked to state how often the following statements applied to them: “(1) My parent(s) set definite rules about what I can do outside the home; (2) My parent(s) know whom I spend evenings with; (3) I can easily get emotional support from my mother and/or father.” The respondents could choose one of the following options for each statement: “(1) Always; (2) Often; (3) In half of cases; (4) Rarely; (5) Never.”

Statistical analysis

All outcome measures, potential determinants, as well as expected confounders were analyzed by gender using the χ^2 independence test. The associations between the determinants and outcome measures were analyzed using bivariate and multivariate binary logistic regression analysis. As the values of outcome measures changed significantly over three surveys, (Hibell B., 2007) the year of the survey was controlled for in the multivariate binary regression models.

The associations of potential confounders, which were identified in the prior research reports, (Pe-traitis, et al., 1995) with the out-

come measures were analyzed in a bivariate analysis (data not shown). Those variables that appeared to be associated with the outcomes were controlled for in a multivariate logistic regression model. They included socio-demographic characteristics determined by the same questionnaire, such as age (15 vs. 16 years old), gender, type of the attended school (secondary school in a city, secondary school in a village, vocational school, or college), smoking (smoker vs. non-smoker), friendship with drinkers (nobody, some, most, or all), family type (traditional, one parent, other family type).

The results of the multivariate logistic regression analysis were presented as odds ratios with 95% confidence intervals. Associations with p-value less than 0.05 were considered statistically significant. The data were analyzed using the statistical package SPSS 13.0 for Windows.

RESULTS

The study sample consisted of more female than male respondents (53% vs. 47%). There was no difference between boys and girls in relation to age. Most of the students attended secondary schools in cities or towns (54.7% of boys and 58.3% of girls), while 28% of the respondents studied in secondary schools in villages. The others attended vocational schools or colleges. The study sample was the biggest in 1999 – 2,420 boys and 2,662 girls; 1,561 boys and 1,767 girls took part in the survey in 2003, and 1,980 boys and 2,297 girls – in 2007. As it was expected, regular alcohol use, drunkenness to the point of intoxication and early initiation of drinking were more frequent among males than fe-

males. Other characteristics of study population, as well as the number of the missing answers for each variable are shown in Table 1.

Satisfaction with relationships with mother and father

Being not satisfied with their relationships with one's mother was associated with a higher risk of alcohol use among adolescents. Bivariate analysis is shown in Tables 2, 3 and multivariate analysis in Table 4. Compared to adolescents who were satisfied or very satisfied with their relationships with mother, the adolescents who were not so satisfied or not at all satisfied were nearly twice as likely (OR= 1.70; 95% CI= 1.15 - 2.48) to have used alcohol 10 or more times during the last 30 days.

Relationships with father were not consistently associated with adolescent's regular alcohol use (Tables 3, 4). Adolescents who were not satisfied with their relationships with father were at risk of drinking to the point of intoxication at least once during last year (OR = 1.28, 95% CI = 1.06-1.54 for not so satisfied and OR=1.44, 95% CI=1.17-1.76 for not at all satisfied).

Rule-setting and control, care and support provided by parents

Rule-setting by parents outside one's home was not associated with regular alcohol use, but there was a negative relationship between rule-setting and drunkenness, rule-setting and early start of alcohol use. In the families where parents rarely set definite rules about what is allowed to do outside home, adolescents tend to initiate alcohol use earlier with 1.5 times higher odds of drinking first full drink before

Table 1. Characteristics of the study participants: males and females, N = 12687

Characteristic of respondent	Value	Male		Female	
		N	%	N	%
		(5961, or 47%)		(6726, or 53%)	
Use of alcohol 10 times or more during last 30 days;					
p<0,0001*	Less than 10 times	5336	94.0	6166	95.9
Missing 582	Ten times and more	338	6.0	265	4.1
Drunkenness at least once during last 12 month;					
p<0,0001*	Never	2753	48.6	3697	56.8
Missing 510	At least ones	2910	51.4	2817	43.2
Drinking initiation at age of 13 or younger;					
p<0,0001*	After 13 years old	1499	25.7	2046	30.9
Missing 229	At age of 13 or younger	4343	74.3	4570	69.1
Age;					
p=0,76*	15	2479	41.6	2779	41.3
	16	3482	58.4	3947	58.7
Family structure;					
p<0,0001*	Traditional	3686	61.8	4285	63.7
	One parent	1375	23.1	1498	22.3
	Other	900	15.1	943	14
Smoking status;					
p<0,0001*	Non-smoker	3471	58.2	5078	75.5
Missing 4	Smoker	2489	41.8	1645	24.5
Year of survey;					
p=0,44*	1999	2420	40.6	2662	39.6
	2003	1561	26.2	1767	26.3
	2007	1980	33.2	2297	34.2
Type of school;					
p<0,0001*	Secondary school in a village	1718	28.8	1892	28.1
	Secondary school in a city	3260	54.7	3981	58.3
	Vocational school	599	10.0	438	6.5
	(or trade school, where one gets special professional skills)				
	College	384	6.4	478	7.1
	(an institution with mainly vocational courses, but a possibility to obtain bachelor degree)				

*p, p-value for a chi-square test

13 years old (OR=1.56, 95% CI = 1.34-1.82) (Table 4).

Parents being not aware of who an adolescent spends evenings with

was associated with all the outcome measures defined for this study. Adolescents whose parents never know whom he/she spends

Table 2. Percentage distribution of variables characterizing relationships with parents and perceived parental style among adolescents in Ukraine characterized with different levels of alcohol consumption, experience of drunkenness, and different age of drinking initiation, N = 10494

Determinant	Use of alcohol 10 times or more during last 30 days, N (%)		Drunkenness at least once during last 12 months, N (%)		Drinking initiation at age of 13 or younger, N (%)	
	Less than 10 times	More than 10 times	Never	At least once	After 13 years old	At age of 13 or younger
How satisfied are you usually with your relationships with your mother?						
Very satisfied	6091 (61.0%)	293 (57.6%)	3771 (68.1%)	2613 (52.7%)	2078 (70.1%)	4306 (57.2%)
Satisfied	2647 (26.5%)	120 (23.6%)	1270 (22.9%)	1497 (30.2%)	621 (21.0%)	2146 (28.5%)
Neither satisfied nor unsatisfied	668 (6.7%)	37 (7.3%)	249 (4.5%)	456 (9.2%)	135 (4.6%)	570 (7.6%)
Not so satisfied	427 (4.3%)	37 (7.3%)	174 (3.1%)	290 (5.8%)	85 (2.9%)	379 (5.0%)
Not at all satisfied	120 (1.2%)	18 (3.5%)	52 (0.9%)	86 (1.7%)	28 (0.9%)	110 (1.5%)
No such person	32 (0.3%)	4 (0.8%)	19 (0.3%)	17 (0.3%)	17 (0.6%)	19 (0.3%)
How satisfied are you usually with your relationships with your father?						
Very satisfied	4705 (47.1%)	230 (45.2%)	2971 (53.7%)	1964 (39.6%)	1698 (57.3%)	3237 (43.0%)
Satisfied	2690 (26.9%)	138 (27.1%)	1374 (24.8%)	1454 (29.3%)	683 (23.0%)	2145 (28.5%)
Neither satisfied nor unsatisfied	1076 (10.8%)	51 (10.0%)	484 (8.7%)	643 (13.0%)	238 (8.0%)	889 (11.8%)
Not so satisfied	721 (7.2%)	33 (6.5%)	306 (5.5%)	448 (9.0%)	141 (4.8%)	613 (8.1%)
Not at all satisfied	570 (5.7%)	41 (8.1%)	243 (4.4%)	368 (7.4%)	133 (4.5%)	478 (6.3%)
No such person	223 (2.2%)	16 (3.1%)	157 (2.8%)	82 (1.7%)	71 (2.4%)	168 (2.2%)
My parent(s) set definite rules about what I can do outside the home.						
Always	1611 (16.1%)	86 (16.9%)	1027 (18.6%)	670 (13.5%)	646 (21.8%)	1051 (14.0%)
Often	1699 (17.0%)	73 (14.3%)	977 (17.7%)	795 (16.0%)	548 (18.5%)	1224 (16.3%)
In half of cases	1823 (18.3%)	69 (13.6%)	950 (17.2%)	942 (19.0%)	466 (15.7%)	1426 (18.9%)
Rarely	2059 (20.6%)	110 (21.6%)	1091 (19.7%)	1078 (21.7%)	536 (18.1%)	1633 (21.7%)
Never	2793 (28.0%)	171 (33.6%)	1490 (26.9%)	1474 (29.7%)	768 (25.9%)	2196 (29.2%)
My parent(s) know whom I spend evenings with.						
Always	5228 (52.4%)	215 (42.2%)	3265 (59.0%)	2178 (43.9%)	1834 (61.9%)	3609 (47.9%)
Often	1902 (19.0%)	78 (15.3%)	985 (17.8%)	995 (20.1%)	499 (16.8%)	1481 (19.7%)
In half of cases	1231 (12.3%)	70 (13.8%)	530 (9.6%)	771 (15.5%)	250 (8.4%)	1051 (14.0%)
Rarely	895 (9.0%)	77 (15.1%)	390 (7.0%)	582 (11.7%)	190 (6.4%)	782 (10.4%)
Never	729 (7.3%)	69 (13.6%)	365 (6.6%)	433 (8.7%)	191 (6.4%)	607 (8.1%)
I can easily get emotional support from my mother and/or father.						
Always	6436 (64.5%)	277 (54.4%)	3798 (68.6%)	2915 (58.8%)	2055 (69.3%)	4658 (61.9%)
Often	1922 (19.2%)	108 (21.2%)	1000 (18.1%)	1030 (20.8%)	517 (17.4%)	1513 (20.1%)
In half of cases	819 (8.2%)	55 (10.8%)	345 (6.2%)	529 (10.7%)	179 (6.0%)	695 (9.2%)
Rarely	445 (4.5%)	32 (6.3%)	212 (3.8%)	265 (5.3%)	105 (3.5%)	372 (4.9%)
Never	363 (3.6%)	37 (7.3%)	180 (3.3%)	220 (4.4%)	108 (3.6%)	292 (3.9%)

evenings with were nearly twice as likely (OR = 1.78, 95% CI = 1.32-2.40) to have used alcohol 10 or more times during the last 30 days, compared to those whose parents always know their whereabouts (Table 4).

The parental support perceived by the adolescents was not consistently associated with alcohol use. Regular alcohol use was more likely for the adolescents who perceived parental support “In half of cases” and “Never”, and drunken-

ness during last 12 month and early initiation of alcohol use was more likely for those respondents who chose the answers “In half of cases” and “Frequently”, compared to the reference category “Always”.

Table 3. Risk of alcohol consumption by adolescents in Ukraine according to the level of satisfaction with the relationships with their parents and perceived parental style. Bivariate binary logistic regression analysis, N = 10494.

Determinant	N	Use of alcohol 10 times or more during last 30 days (OR*, CI (95%)*)	Drunkenness at least once during last 12 months (OR*, CI (95%)*)	Drinking initiation at age of 13 or younger (OR*, CI (95%)*)
How satisfied are you usually with your relationships with your mother?				
Very satisfied	6384	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Satisfied	2767	0.94 (0.76-1.17)	1.70 (1.56-1.86)**	1.67 (1.50-1.85)**
Neither satisfied nor unsatisfied	705	1.15 (0.81-1.64)	2.64 (2.25-3.11)**	2.04 (1.68-2.48)**
Not so satisfied	464	1.80 (1.26-2.57)**	2.41 (1.98-2.92)**	2.15 (1.69-2.74)**
Not at all satisfied	138	3.12 (1.87-5.19)**	2.39 (1.69-3.38)**	1.90 (1.25-2.88)**
No such person	36	2.60 (0.91-7.40)	1.29 (0.67-2.49)	0.54 (0.28-1.04)
How satisfied are you usually with your relationships with your father?				
Very satisfied	4935	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Satisfied	2828	1.05 (0.85-1.30)	1.60 (1.46-1.76)**	1.65 (1.48-1.83)**
Neither satisfied nor unsatisfied	1127	0.97 (0.71-1.32)	2.01 (1.76-2.29)**	1.96 (1.68-2.29)**
Not so satisfied	754	0.94 (0.65-1.36)	2.28 (1.88-2.76)**	1.59 (1.29-1.96)**
Not at all satisfied	611	1.47 (1.05-2.07)**	2.29 (1.93-2.72)**	1.89 (1.54-2.31)**
No such person	239	1.47 (0.87-2.48)	0.79 (0.60-1.04)	1.24 (0.94-1.65)
My parent(s) set definite rules about what I can do outside the home.				
Always	1697	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	1772	0.81 (0.59-1.11)	1.25 (1.09-1.43)**	1.37 (1.19-1.58)**
In half of cases	1892	0.71 (0.51-0.98)	1.52 (1.33-1.74)**	1.88 (1.63-2.17)**
Rarely	2169	1.00 (0.75-1.34)	1.52 (1.33-1.72)**	1.87 (1.63-2.15)**
Never	2964	1.15 (0.88-1.50)	1.52 (1.34-1.71)**	1.76 (1.55-2.00)**
My parent(s) know whom I spend evenings with.				
Always	5443	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	1980	1.00 (0.77-1.30)	1.51 (1.37-1.68)**	1.51 (1.34-1.69)**
In half of cases	1301	1.38 (1.05-1.82)**	2.18 (1.93-2.47)**	2.14 (1.84-2.48)**
Rarely	972	2.09 (1.60-2.74)**	2.24 (1.95-2.57)**	2.09 (1.77-2.48)**
Never	798	2.30 (2.74-3.05)**	1.78 (1.53-2.07)**	1.62 (1.36-1.92)**
I can easily get emotional support from my mother and/or father.				
Always	6713	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	2030	1.31 (1.04-1.64)**	1.34 (1.22-1.48)**	1.29 (1.15-1.45)**
In half of cases	874	1.56 (1.16-2.10)**	2.00 (1.73-2.31)**	1.71 (1.44-2.04)**
Rarely	477	1.67 (1.14-2.44)**	1.63 (1.35-1.96)**	1.56 (1.25-1.95)**
Never	400	2.37 (1.64-3.39)**	1.59 (1.30-1.95)**	1.19 (0.95-1.50)**

* OR, odds ratio; CI, confidence interval.

** p<0.05

DISCUSSION

The study considered such social factors of alcohol use by adolescents as their relationships with their parents and parenting practices, including support, control,

and rule-setting. We found that dissatisfaction with the relationships with one's mother was associated with regular alcohol use; however, we cannot make a final conclusion whether such dissatisfaction was a risk factor or a consequence of

adolescent alcohol use due to cross-sectional design of the study. Parental control was negatively associated with adolescent alcohol use, which could be a sign of a protective effect if we assume a causal

Table 4. Risk of alcohol consumption by adolescents in Ukraine according to the level of satisfaction with the relationships with their parents and perceived parental style. Multivariable binary logistic regression analysis, controlled for socio-demographic variables*, N = 10494.

Determinant	N	Use of alcohol 10 times or more during last 30 days (OR*, CI (95%)*)	Drunkenness at least once during last 12 months (OR*, CI (95%)*)	Drinking initiation at age of 13 or younger (OR*, CI (95%)*)
How satisfied are you usually with your relationships with your mother?				
Very satisfied	6384	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Satisfied	2767	0.89 (0.70-1.12)	1.25 (1.12-1.40)**	1.32 (1.18-1.48)**
Neither satisfied nor unsatisfied	705	0.82 (0.56-1.18)	1.57 (1.30-1.90)**	1.28 (1.04-1.58)**
Not so satisfied	464	1.69 (1.15-2.48)**	1.41 (1.12-1.78)**	1.48 (1.14-1.92)**
Not at all satisfied	138	1.86 (1.08-3.20)**	1.32 (0.87-2.00)	1.15 (0.73-1.79)
No such person	36	1.32 (0.42-4.18)	2.35 (1.06-5.21)**	0.55 (0.27-1.15)
How satisfied are you usually with your relationships with your father?				
Very satisfied	4935	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Satisfied	2828	1.00 (0.80-1.26)	1.19 (1.06-1.33)**	1.36 (1.21-1.52)**
Neither satisfied nor unsatisfied	1127	0.71 (0.51-0.98)	1.22 (1.04-1.42)**	1.40 (1.18-1.65)**
Not so satisfied	754	0.74 (0.50-1.10)	1.28 (1.06-1.54)**	1.59 (1.29-1.96)**
Not at all satisfied	611	1.10 (0.76-1.58)	1.44 (1.17-1.76)**	1.36 (1.09-1.69)**
No such person	239	0.74 (0.42-1.29)	1.08 (0.78-1.48)	1.25 (0.91-1.70)
My parent(s) set definite rules about what I can do outside the home.				
Always	1697	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	1772	0.83 (0.60-1.17)	1.22 (1.04-1.44)**	1.28 (1.10-1.49)**
In half of cases	1892	0.74 (0.53-1.04)	1.34 (1.14-1.57)**	1.66 (1.42-1.94)**
Rarely	2169	0.95 (0.70-1.29)	1.22 (1.05-1.43)**	1.56 (1.34-1.82)**
Never	2964	1.10 (0.83-1.46)	1.13 (0.97-1.31)	1.45 (1.26-1.67)**
My parent(s) know whom I spend evenings with.				
Always	5443	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	1980	0.91 (0.69-1.19)	1.34 (1.19-1.52)**	1.28 (1.13-1.45)**
In half of cases	1301	1.10 (0.82-1.47)	1.62 (1.40-1.88)**	1.57 (1.34-1.84)**
Rarely	972	1.50 (1.13-1.99)**	1.53 (1.29-1.80)**	1.52 (1.27-1.82)**
Never	798	1.78 (1.32-2.40)**	1.30 (1.09-1.56)**	1.26 (1.04-1.51)**
I can easily get emotional support from my mother and/or father.				
Always	6713	1.00 (ref.)	1.00 (ref.)	1.00 (ref.)
Often	2030	1.23 (0.97-1.56)	1.25 (1.11-1.41)**	1.19 (1.06-1.35)**
In half of cases	874	1.41 (1.03-1.93)**	1.56 (1.32-1.85)**	1.32 (1.10-1.59)**
Rarely	477	1.35 (0.91-2.01)	1.11 (0.89-1.38)	1.17 (0.92-1.49)
Never	400	1.98 (1.34-2.91)**	1.17 (0.91-1.49)	0.98 (0.76-1.25)

* age, gender, type of school a respondent attends, smoking, friendship with drinkers, family type).

** p<0.05.

*** OR, odds ratio; CI, confidence interval.

link between parenting style and drinking level.

Satisfaction with the relationships with one's mother was associated with most outcome measures of adolescent alcohol use. But the re-

lationships with one's father were not characterized by such a strong association; the answers which presumably characterized dissatisfaction were associated only with drunkenness and early initiation of

drinking alcohol, which is more likely to show deteriorated relations as a result of alcohol use in the family. So, if an adolescent is dissatisfied with the relationship with his/her father, this may be be-

cause of some violence and child abuse on the part of a father, and hence, this may cause drunkenness to the point of intoxication among adolescents. The association could be intermediated with fathers' alcohol use, since the prevalence of alcohol drinking is higher among male population in Ukraine. The quality of the parent-adolescent relationship was found to have a significant impact on the initiation and level of adolescent alcohol use in other studies as well. (Newman, Harrison, Dashiff, & Davies, 2008)

The specific finding regarding Ukraine was the relative importance of the relationships with one's mother for adolescent alcohol use compared to the relationships with one's father.

The perceived lack of parental support was associated with regular drinking, episodes of drunkenness, and earlier initiation of alcohol use. However, this does not necessarily mean direct causal relationship, since regular drinking by a child might also be a cause of problematic relationships with his/her parents. No associations were found with drinking to the point of intoxication and early start of alcohol use in the groups receiving parental support "rarely" or "never".

Parents being not aware of who a student spends evenings with was associated with all measures of alcohol use defined for this study. This corresponds to the results of longitudinal studies in other countries. (Beck, Boyle, & Boekeloo, 2004; Guo, Hawkins, Hill, & Abbott, 2001) However, according to our results, the rule-setting by parents outside their home did not correlate with regular adolescent drinking. "Never" occurring parental control is overall associated with a lower risk than parental

control "rarely". The same peculiarity was observed in French ESPAD study, despite the fact that they used another question to assess the level of control provided by parents. (Choquet, et al., 2008)

Estimates of the relative risk for selected exposure-outcome relationships in this study were somewhat lower compared to those reported for other ESPAD countries, partly because of a different set of confounders that were controlled for. Another peculiarity for Ukraine was significance of the association between satisfaction with the relationships with mother and alcohol use by adolescents, unlike in France and England. (Ledoux, et al., 2002)

There are several limitations in this study which could impact the validity. The cross-sectional design of the study does not allow drawing firm conclusions about causal associations between the determinants and the level of alcohol consumption by adolescents. The confounding in this study may have been not fully controlled for because the questionnaire lacked reliable information about alcohol consumption by parents and some other possible factors that can be associated with impaired parenting. Each outcome variable, as well as some determinants and confounders, had a considerable amount of missing values, which could threaten the validity of the results. Nevertheless, since the alcohol use of the students retained for the analysis did not differ from that of those excluded, missing values is not a major source of bias in the estimates of association.

CONCLUSIONS

Dissatisfaction with the relationships with one's mother was asso-

ciated with alcohol use by adolescents. The perceived lack of parental support was associated with regular drinking, episodes of drunkenness, and earlier initiation of alcohol use. Introduction of more control by parents over child's whereabouts may be an effective preventive effort to delay the onset of alcohol drinking.

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