

# DRINKING PATTERNS IN THE ELDERLY ROMANIAN POPULATION – PREVALENCE AND CHARACTERISTICS

ALINA ELENA STANCA<sup>1</sup>, EUGENIA-CLAUDIA BRATU<sup>2</sup>, DANA GALIETA MINCĂ<sup>3</sup>

<sup>1</sup>“Alessandrescu-Rusescu” National Institute for Mother and Child’s Health, Bucharest,

<sup>2,3</sup>“Carol Davila” University of Medicine and Pharmacy Bucharest

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**Abstract:** Confronted with demographic ageing, the cross-sectional study was designed to estimate the characteristics of alcohol use among older Romanians. Based on a sample of 107 people aged 65+, data regarding alcohol use, socio-demographic and clinical characteristics were collected. 52.4% of the participants were current drinkers, 6.5% excessive drinkers, 14.95% binge drinkers and 13% had alcohol-related problems. Current drinking was mostly reported by non-hospitalized males lacking close social contacts, but with smoking history and exposed to alcohol use and stressful life events. Harmful drinkers were mostly married males not living alone, exposed to alcohol use and having grown up alongside an alcoholic. Alcohol-related problems were mostly found among depressed male drinkers with family history of alcoholism. As alcohol use and misuse are encountered among aging Romanians at rates comparable to other countries, more awareness needs to be drawn onto this matter.

## INTRODUCTION

The percentage of people aged 60+ around the globe is expected to grow from 10% in 2000 to 21.1% in 2050, becoming the fastest growing population subgroup.(1) Although alcohol use decreases with age, recent surveys have shown that the incidence of alcohol consumption among the elderly is slowly increasing (2-4) and mortality rates linked to alcohol use tend to be higher within this age group.(5) Older people are more susceptible to alcohol’s effects even at lower levels of use.(2,4,6-8) Because of the altered brain responsiveness, alcohol is a faster depressant (5) and the potential for harmful interactions between medications and alcohol is also greater within this age group because of the altered metabolism and polypharmacy.(4-12) In addition, alcohol use can exacerbate pre-existing medical conditions commonly seen among them.(2,6)

Healthcare workers usually avoid asking older people about their drinking habits and even when they do, few suitable screening instruments exist to ease their work.(2,4,5) Thus, the diagnosis of alcohol use disorders in the elderly is still underestimated (13,14), although older people with alcohol misuse may benefit as much as younger adults from specialized treatment and even respond better.(2,3,15)

Alcohol-related problems’ detection in the elderly is also encumbered by the scarcity of specially tailored alcohol use guidelines for this age group. Few countries, such as USA and Italy, have adopted alcohol consumption guidelines for the elderly.(2,4,9) In addition, the diverse definitions of standard drinks among countries (16) have made outlining the levels of unhealthy drinking in this age group even more difficult.

## PURPOSE

The aim of the study was to determine the alcohol consumption patterns embraced by older Romanians. Aside from estimating the prevalence of alcohol use and harmful drinking among older people, the study examined their

association with a wide range of socio-demographic and clinical characteristics, including depression.

## MATERIALS AND METHODS

### Study design and population

The data for our analysis were taken from a cross-sectional observational study based on a questionnaire administered by an interviewer. The sole inclusion criterion was being at least 65 years old. 107 older people were included in the study, 56 of them hospitalized at that moment and 51 recruited using an online version of the questionnaire.

**Socio-demographic variables.** Respondents were asked about their age, gender, marital status, level of education, residence, living situation, working status and monthly income. They were also questioned about their smoking status (former and current smokers being considered as having smoking history) and the quality and number of social contacts. The stressful life events experienced during the last year were quantified using the *Elders Life Stress Inventory* (ELSI).(17)

**Alcohol consumption.** Each participant was asked about his exposure to alcohol use (attendance to social events where alcohol is drunk, attitude of his social circle towards alcohol use) and his potential family history of alcoholism. Participants were initially categorized as current drinkers (who reported alcohol use during the last year), former drinkers (who reported alcohol use in their lifetime, but not during the last year) and lifetime abstainers. Data on average alcohol use and circumstances of drinking were collected from current drinkers. As Romania has no generally accepted definition (16), we considered a standard drink as 10 g ethanol, the equivalent of 250 ml beer with 5% alcohol, 125 ml wine with 11% alcohol and 30 ml spirits with 45% alcohol. We used quantity and frequency questions for each type of alcoholic beverage (wine, beer, spirits), as they were considered more accurate.(18) According to their drinking frequency, current drinkers were divided in occasional (drinking less than once a month) and

<sup>2</sup>Corresponding author: Eugenia Claudia Bratu, Str. Dr. Leonte, Nr. 3-5, Institutul de Sănătate Publică, Et. 2, cam. 224, București, România, E-mail: ioneugenia@yahoo.com, Phone: +40765 956609

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regular drinkers (consuming alcohol at least once a month). The average weekly alcohol use was then calculated by multiplying the number of units of each type of alcoholic beverage drunk on a usual day by a factor derived from the frequency of use.(19)

Excessive alcohol consumption was considered an average weekly alcohol use of more than 70 g ethanol in wine, beer or spirits. The definition of binge drinking offered by NIAAA (20) was adapted to the standard drink used here, considering binge drinking as serving at least 6 standard drinks in one session. Both excessive alcohol use and binge drinking were considered patterns of harmful drinking. The existence of alcohol-related problems among current drinkers was screened using the Short Michigan Alcoholism Screening Test – Geriatric Version (SMAST-G), where a final score  $\geq 2$  is considered an indicator of such problems.(21)

**Health status.** Respondents were asked to evaluate their own health status using Likert scales. They were also screened for depression with the short form of the *Geriatric Depression Scale* (GDS), where a score  $\geq 5$  suggests a certain degree of depression.(22)

Data were collected using Microsoft Office Excel. The statistical significance of the differences observed between various subgroups was tested with  $\chi^2$  test in Epi Info™ 7. Statistical significance was set at  $p < 0.05$ .

**RESULTS**

**Sample description**

The study sample was represented by 107 people aged 65 to 93 years, with a median age of 73.5 years. Most of them were females (65.4%), living in urban areas (60.75%), married (58.9%) or widowed (37.4%), with less than high school diploma (45.8%), retired (96.3%), with a monthly income bigger than 700 RON (66.4%) and living with their families (75.7%).

29% of the participants were lifetime abstainers, 18.7% former drinkers, 18.7% occasional drinkers and 33.7% regular drinkers, 52.4% of them being current drinkers. 14.95% admitted experiencing at least one episode of binge drinking during the last year, while 6.5% reported excessive alcohol consumption. 13% obtained a SMAST-G score  $\geq 2$ .

The alcoholic beverage whose use was reported most often was wine, followed by beer and spirits, mainly bought from a supermarket or homemade. When asked about circumstances of use, participants mostly reported drinking at

home, during meals, alongside a small group of people (1-5 people), usually family members or friends.

When requested to self-rate their health status, 47.7% responded it was “very good”/“good”, 36.4% considered it “not so good”, while 15.9% rated it as “bad”/“very bad”. 52.4% of the study sample scored 5 or more when screened using GDS.

**Statistical test findings**

Compared to lifetime abstainers, current drinkers were mostly males who lacked very close social contacts, experienced at least one health-related stressful life event during the last year, attended social events where alcohol was consumed and were part of a group that approved alcohol use. Former alcohol use was strongly associated with male sex, a small number of social contacts (maximum 8 people), being exposed to at least one egocentric or health-related stressful life event during the last year and the absence of depressive symptoms (GDS score  $\leq 4$ ). Both current and former drinking were more frequently reported among non-hospitalized respondents and among those with smoking history (see table no. 1).

Subjects embracing harmful drinking patterns enrolled in our study were exclusively regular drinkers. When compared to the rest of the current drinkers, those reporting excessive alcohol use were more likely to be male and to have grown up alongside an alcoholic. All of them were married elderly, living with their families, exposed to alcohol use by their entourage. Respondents admitting binge drinking were also more likely to be male and to attend social events where alcohol was drunk. In addition, binge drinking was statistically associated to a coexisting smoking history and to not being hospitalized at the moment data were gathered (see table no. 2).

The existence of alcohol-related problems was also mostly observed among non-hospitalized male regular drinkers with family history of alcoholism. Having a small number of social contacts also tended to increase the risk of alcohol-related problems, although the result had no statistical significance. On the contrary, having depressive symptoms was statistically associated with a SMAST-G score  $\geq 2$  (see table no. 2).

Whereas wine was drunk almost universally by our current drinkers, beer and spirits consumption was mostly reported by younger males (<75 years old) residing in rural areas. Rural dwellers were also more likely to drink homemade alcoholic beverages (OR=9.41, 95% CI= 2.56-34.53,  $p=0.0003$ ).

**Table no. 1. Risk factors associated with current and former alcohol use among study participants**

Characteristics		Former drinker vs lifetime abstainer		Current drinker vs lifetime abstainer	
		OR(95% CI)	P value	OR (95% CI)	P value
Gender	Male	17.72 (3.30-95.29)	0.0001	10.88 (2.36-50.10)	0.0004
	Female	0.06 (0.01-0.30)	0.0001	0.09 (0.02-0.42)	0.0004
Quality of social contacts	Not very close	1.39 (0.36-5.35)	0.63	3.61 (1.28-10.16)	0.01
	Very close	0.72 (0.19-2.77)	0.63	0.28 (0.10-0.78)	0.01
Number of social contacts	Maximum 8 people	3.38 (1.04-10.96)	0.04	2.25 (0.91-5.57)	0.08
	More than 8 people	0.30 (0.09-0.96)	0.04	0.44 (0.18-1.10)	0.08
Egocentric stressful life events/last 12 months	No	0.22 (0.06-0.88)	0.03	0.31 (0.10-1.03)	0.05
	Yes	4.50 (1.13-17.88)	0.03	3.20 (0.97-10.51)	0.05
Health-related stressful life events/last 12 months	No	0.10 (0.02-0.39)	0.004	0.21 (0.07-0.69)	0.006
	Yes	10.13 (2.55-40.23)	0.004	4.70 (1.45-15.27)	0.006
Attendance to social events with alcohol consumption	No	0.50 (0.15-1.62)	0.24	0.29 (0.11-0.73)	0.008
	Yes	2.00 (0.62-6.47)	0.24	3.51 (1.37-8.99)	0.008
Social circle's attitude towards alcohol use	Disapproval	0.50 (0.16-1.61)	0.24	0.09 (0.03-0.29)	0.000008
	Approval	1.98 (0.62-6.31)	0.24	10.88 (3.42-34.62)	0.000008
Smoking history	No	0.20 (0.06-0.69)	0.008	3.61 (1.28-10.16)	0.01
	Yes	5.09 (1.45-17.82)	0.008	0.28 (0.10-0.78)	0.01
Hospitalization	No	9.66 (2.56-39.40)	0.0003	7.46 (2.50-22.31)	0.0001
	Yes	0.10 (0.03-0.39)	0.0003	0.13 (0.04-0.40)	0.0001

## PUBLIC HEALTH AND MANAGEMENT

**Table no. 2. Risk factors associated with harmful drinking patterns and the existence of alcohol-related problems**

Characteristics		Excessive alcohol use (n=7)		Binge drinking (n=16)		SMAST-G score ≥2 (n=14)	
		OR(95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Gender	Male	<b>10.94 (1.21-98.56)</b>	<b>0.01</b>	<b>21.00 (4.06-108.85)</b>	<b>0.0002</b>	<b>15.00 (2.91-77.32)</b>	<b>0.0002</b>
	Female	<b>0.09 (0.01-0.82)</b>	<b>0.01</b>	<b>0.05 (0.01-0.25)</b>	<b>0.00002</b>	<b>0.07 (0.01-0.34)</b>	<b>0.0002</b>
Number of social contacts	Max 8 people	0.58 (0.12-2.89)	0.51	1.06 (0.33-3.38)	0.93	<b>4.03 (0.98-16.57)</b>	<b>0.04</b>
	> 8 people	1.71 (0.34-8.51)	0.51	0.95 (0.30-3.06)	0.93	<b>0.25 (0.06-1.02)</b>	<b>0.04</b>
Attendance to social events with alcohol consumption	No	All of them attended social events where alcohol was used		<b>0.23 (0.06-0.94)</b>	<b>0.03</b>	0.74 (0.21-2.59)	0.64
	Yes			<b>4.33 (1.07-17.57)</b>	<b>0.03</b>	1.35 (0.39-4.72)	0.64
Family history of alcoholism	No	0.31 (0.06-1.77)	0.17	0.44 (0.13-1.46)	0.18	<b>0.17 (0.04-0.69)</b>	<b>0.009</b>
	Yes	3.21 (0.57-18.24)	0.17	2.25 (0.69-7.42)	0.18	<b>5.96 (1.44-24.66)</b>	<b>0.009</b>
Growing up with an alcoholic	No	<b>0.08 (0.01-0.49)</b>	<b>0.001</b>	0.55 (0.15-2.04)	0.37	0.42 (0.11-1.61)	0.20
	Yes	<b>12.5 (2.05-76.15)</b>	<b>0.001</b>	1.82 (0.49-6.74)	0.37	2.36 (0.62-8.99)	0.20
Smoking history	No	0.29 (0.05-1.62)	0.14	<b>0.18 (0.05-0.66)</b>	<b>0.007</b>	0.38 (0.11-1.32)	0.12
	Yes	3.5 (0.62-19.89)	0.14	<b>5.57 (1.51-20.54)</b>	<b>0.007</b>	2.64 (0.75-9.28)	0.12
Hospitalization	No	5.08 (0.57-45.45)	0.11	<b>7.74 (1.55-38.56)</b>	<b>0.006</b>	All of them were not hospitalized	
	Yes	0.20 (0.02-1.76)	0.11	<b>0.13 (0.03-0.64)</b>	<b>0.006</b>		
GDS score	0-4	0.81 (0.16-4.04)	0.80	0.86 (0.27-2.76)	0.80	<b>0.22 (0.05-0.93)</b>	<b>0.03</b>
	5-8	2.25 (0.44-11.52)	0.32	0.78 (0.21-2.91)	0.71	1.57 (0.43-5.70)	0.49
	9-11	0.72 (0.08-6.77)	0.77	1.09 (0.24-4.86)	0.91	2.40 (0.56-10.19)	0.23
	≥12	Undefined <sup>1</sup>		2.71 (0.35-21.16)	0.32	3.33 (0.42-26.24)	0.23

Undefined<sup>1</sup> - no study participant admitting to that drinking pattern was found within that category

**Table no. 3. Alcohol use preferences among respondents with harmful drinking patterns and alcohol-related problems**

Alcohol use preferences		Excessive drinking (n=7)		Binge drinking (n=16)		SMAST-G score ≥2 (n=14)	
		OR(95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Type of alcoholic beverage	Wine	0.26 (0.02-3.33)	0.27	0.18 (0.01-2.14)	0.13	Undefined <sup>1</sup>	
	Beer	All of them drank beer		3.37 (0.66-17.07)	0.13	2.69 (0.52-13.78)	0.22
	Spirits	2.11 (0.37-12.00)	0.39	3.00 (0.83-10.90)	0.09	<b>15.74 (1.88-131.48)</b>	<b>0.002</b>
Location of alcohol use	At home	All of them drank at home		1.67 (0.17-16.17)	0.66	All of them drank at home	
	At someone else's place	0.56 (0.06-5.17)	0.60	1.33 (0.34-5.25)	0.68	2.78 (0.71-10.84)	0.13
	In a bar	<b>17.25 (2.20-135.40)</b>	<b>0.0009</b>	Undefined <sup>1</sup>		<b>8.00 (1.28-50.04)</b>	<b>0.01</b>
	In a restaurant	Undefined <sup>1</sup>		1.00 (0.26-3.81)	1.00	0.77 (0.18-3.28)	0.72
	Anywhere	The only respondent who admitted drinking anywhere reported harmful drinking patterns and also had a SMAST-G score ≥2					
Number of people with whom he usually drinks in a session	Alone	<b>6.00 (0.80-44.95)</b>	<b>0.05</b>	<b>13.00 (1.32-127.22)</b>	<b>0.008</b>	<b>5.45 (0.81-36.82)</b>	<b>0.05</b>
	< 5 people	0.74 (0.13-4.37)	0.74	0.87 (0.22-3.37)	0.84	1.15 (0.27-4.94)	0.85
	5-10 people	Undefined <sup>1</sup>					
	> 10 people	Undefined <sup>1</sup>					
Types of people with whom he usually drinks in a session	With family	0.43 (0.07-2.65)	0.35	<b>0.07 (0.01-0.38)</b>	<b>0.0004</b>	<b>0.19 (0.04-0.85)</b>	<b>0.02</b>
	With friends	1.87 (0.38-9.27)	0.44	<b>4.09 (1.18-14.13)</b>	<b>0.02</b>	1.96 (0.58-6.67)	0.28
Relationship between alcohol use and meals	Alone	<b>51.60 (5.12-520.23)</b>	<b>0.000003</b>	<b>65.00 (7.00-603.36)</b>	<b>0.0000003</b>	<b>17.33 (3.57-84.23)</b>	<b>0.00004</b>
	During meals	<b>0.04 (0.004-0.41)</b>	<b>0.0004</b>	<b>0.05 (0.01-0.21)</b>	<b>0.000004</b>	<b>12.50 (3.04-51.47)</b>	<b>0.0001</b>
Alcoholic beverages origin	Unrelated to meals	<b>22.80 (2.45-211.76)</b>	<b>0.0004</b>	<b>21.00 (4.83-91.27)</b>	<b>0.000004</b>	<b>0.08 (0.02-0.33)</b>	<b>0.0001</b>
	Homemade	6.52 (0.73-58.36)	0.06	1.29 (0.40-4.13)	0.67	1.33 (0.39-4.51)	0.64
Alcoholic beverages origin	Supermarket / other stores	All of them bought alcohol from a supermarket		1.86 (0.45-7.73)	0.39	1.47 (0.35-6.20)	0.60
	Bars	<b>6.00 (0.80-44.95)</b>	<b>0.05</b>	Undefined <sup>1</sup>		<b>8.00 (1.28-50.04)</b>	<b>0.01</b>
	Other origin	Undefined <sup>1</sup>		0.20 (0.02-1.71)	0.11	0.25 (0.03-2.12)	0.17

Undefined<sup>1</sup> - no study participant admitting to that drinking pattern was found within that category

When examining the types of alcoholic beverages and the circumstances of consumption among those embracing harmful drinking patterns, several particularities caught our eyes (see table no. 3). The alcoholic beverages drunk excessively by our current drinkers were mostly wine or beer, although the difference failed to prove any statistical significance. On the contrary, respondents with alcohol-related problems were more likely to report spirits consumption, the correlation having a powerful statistical significance. Drinking in a bar resulted to be an important risk factor for excessive alcohol use and alcohol-related problems. Alcohol consumption alongside family members and friends, during meals, tended to be protective against alcohol misuse. On the contrary, drinking alone, regardless of meals, increased dramatically the risk of harmful

alcohol use and of alcohol-related problems. Buying alcoholic beverages in a bar rather than a supermarket or drinking homemade alcohol were also mostly found among excessive drinkers and those with a SMAST-G score ≥2. However, the correlation was statistically significant only for the latter.

### DISCUSSIONS

The prevalence of alcohol use within our study sample is comparable to those reported by other surveys: 70-80% of older men and 50% of older women were current drinkers in the EU in 2009 (4), while in Belgium 50.2% of people aged 65 years+ reported alcohol use in 2012.(14) Compared to data reported by Romania in 2010 for the population aged 15 years+ (23), current drinking prevalence is smaller among the elderly of

our study (52.4% versus 68.6%), while lifetime abstinence prevalence is higher (29% versus 14.3%).

Compared to other studies (23,24), binge drinking was reported more often, though the result may be partly biased because of the lower cut-off value used to define binge drinking. On the contrary, the prevalence of excessive alcohol use in our study sample is smaller than those reported in other surveys, even though the cut-off value used was lower: in Spain drinking more than 24 g ethanol/day in older women and 40 g ethanol/day in older men is reported by 7.8% of the elderly (25), while in Belgium 20.5% of the elderly drink more than 112 g ethanol/week.(14)

At the moment of the statistical analysis of our data, no studies about alcohol use among the elderly using SMAST-G existed, most of them being conducted using CAGE questionnaire. As they measure different dimensions of alcohol misuse (21), our results regarding alcohol-related problems could not be compared to those already published.

The respondents' preferences in alcoholic beverage types and circumstances of use are consistent with the Mediterranean drinking pattern. They are also similar to those of other European elderly people (except for Poland, where strong beer and vodka are favoured).(4) However, they differ from the preferences of the Romanian population aged 15+ in 2010 when the favourite alcoholic beverage was beer.(23)

Alcohol use and misuse risk factors identified by our study align to those reported by other surveys, although not entirely. As stated in previous studies, older men are more likely than women to report alcohol use and misuse.(4,24-26) Among older males, non-married ones tend to report higher levels of alcohol use (3,24), while among women, the contrary is most often met.(3) Social isolation and decreased frequency of social contacts also increase the risk for unhealthy drinking.(3,14) According to our study, males with fewer social contacts had indeed a greater risk of current or former drinking and alcohol-related problems, although no statistical significance was found for the latter. However, excessive alcohol use was most frequently reported among married older males not living alone.

Among our respondents, stressful life events tended to have an ambivalent influence on drinking patterns, enhancing the controversial data already existing on the matter.(27-31) As both current and former drinking were statistically linked to experiencing at least one stressful life event during the last year, we may believe that the influence of stress on an individual's drinking habits are the result of a more complex interaction between his stress coping abilities and the perceived gravity of the event. Indeed, while health-related stressful life events increased the risk of either current or former drinking, egocentric stressful life events (one's own troubles, not related to any other person (17)) were strictly linked to former drinking.

As postulated by the social learning theory of alcohol consumption (32,33), engaging in social and leisure activities with people approving drinking contributes to embracing alcohol use and misuse. Our study reaffirmed this thesis, as both current and harmful drinking were more often reported by people exposed to alcohol consumption. Family history of alcoholism also raised the risk of harmful drinking or alcohol-related problems, enhancing again social learning's role and hinting towards a potential genetic determinant of alcoholism.

While alcohol use may be learned by susceptible individuals, having a strong network of social bonds may protect them against drinking and alcohol abuse.(32) Indeed, according to our study, current drinkers are more likely to lack very close social contacts and drinking alone raises the risk of harmful drinking and alcohol-related problems, possibly because of the lack of this social control.

Engaging in a harmful behaviour multiplies the risk of embracing another one, such as smoking or drug misuse, and alcohol use among the elderly makes no exception to this rule.(24) Truly, our study outlined that smoking history increased the odds of current or former drinking and even binge drinking.

Except excessive drinking, every drinking pattern was statistically linked to not being hospitalized at the moment of data collection.

The presence of any degree of depression increased the risk of alcohol-related problems, result which stresses those already published. Indeed, depression and substance abuse coexist frequently among the elderly (3,5,7,9), but whether depression is a risk factor for harmful drinking or alcohol misuse causes depressive symptoms is still on debate.(4,24)

When interpreting our results, the following strengths and limitations should be considered. Firstly, one of the study's major strengths is the large number of socio-demographic and clinical variables studied in relation to alcohol use, allowing us to obtain a complex snapshot of drinking among the elderly. Secondly, the scales used to assess stressful life events, depression or of alcohol-related problems were specially tailored for older people, thus increasing the credibility of our results.

One of our biggest limitations refers to the design of our alcohol use questionnaire. While using quantity and frequency questions with multiple answers, we opted to express quantity not as an integer, but as an interval, which, although served us better during data collection, restricted us when calculating the mean weekly alcohol use.

The use of intervals meant that we could not calculate the total amount drunk per respondent, forcing us into defining excessive alcohol use as more than 70 g of ethanol in wine, beer or spirits. Thus, excessive drinking within the sample may be underestimated, explaining the lower prevalence reported by our study.

### CONCLUSIONS

Alcohol use patterns among elderly Romanians were associated with gender, number and quality of social contacts, smoking history, exposure to alcohol, stressful life events during the last year, familial history of alcoholism and depression. Although some risk factors cannot be modulated, others, such as social exclusion, stressful life situations and depression can somehow be controlled or reversed if identified properly, thus making alcohol misuse in the elderly a partially preventable disorder. Hence, this social problem should not be ignored and more efforts should be put into better educating the population regarding its prevention, designing better screening campaigns for alcohol use disorders in this age group and better treating those in need.

This study is the first to explore drinking patterns among older Romanians and, although only shedding some light on this subject, it can be used as a starting point for a more thorough investigation and understanding of alcohol use disorders in this age group.

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