DRINKING PATTERNS AND FACTORS ASSOCIATED WITH HEAVY EPISODIC DRINKING AMONG ADULTS IN MOLDOVA

DOI: https://doi.org/10.36004/nier.es.2026.1-06
JEL Classification: D91, I12, Z1
UDC: 316.62+613.81]-053.8(478)

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Received 27 February 2026

Accepted for publication 20 May 2026

SUMMARY

Alcohol consumption is a prominent feature of everyday social life in the Republic of Moldova, yet empirical evidence on how alcohol is consumed and which population groups are most exposed to risky drinking remains limited. Using nationally representative data from the 2021 WHO STEPwise approach to Surveillance (STEPS) survey (N = 4,097 adults aged 18–69 years), this study examines patterns of alcohol consumption and the prevalence and determinants of heavy episodic drinking. Drinking patterns were described using survey-weighted estimates, and associations with heavy episodic drinking (six or more drinks on one occasion in the previous 30 days) were assessed using complex-sample logistic regression models. Alcohol consumption is common in the adult population, with 76% of past-year drinkers reporting alcohol use in the previous 30 days. Heavy episodic drinking was reported by 22% of current drinkers and was considerably more common among men than among women. Drinking patterns also differed across social and regional groups. In the adjusted analysis, heavy episodic drinking remained strongly associated with male sex, region of residence, smoking, and recent consumption of unrecorded alcohol. The findings suggest that alcohol-related risks in Moldova are shaped less by the prevalence of drinking itself than by the social and behavioural contexts in which alcohol is consumed.

Keywords: alcohol consumption, drinking patterns, heavy episodic drinking, correlates

INTRODUCTION

Alcohol consumption is a prominent aspect of daily social life in the Republic of Moldova, where alcoholic beverages are commonly incorporated into social interactions across a broad spectrum of private and public occasions. The long-standing tradition of alcohol production and its widespread availability, especially of wine, at both household and industrial levels continue to influence the cultural meanings and normative expectations surrounding alcohol use, granting social legitimacy and intergenerational continuity. This cultural and normative transmission is further reinforced through the public ritualisation of wine consumption during national and local celebrations, where wine is closely linked with tradition, hospitality, and collective identity (Bîrlădeanu, 2013). From this perspective, alcohol use is better understood as a socially patterned behaviour shaped by shared norms, meanings, and situational contexts, with considerable variation across social groups (Savic et al., 2016; Sudhinaraset et al., 2016; Lo Monaco et al., 2019).

In the Republic of Moldova, these socio-cultural features coexist with high levels of population alcohol exposure, as reflected in aggregate consumption indicators. According to the World Health Organisation (WHO), total alcohol consumption per capita reached approximately 14.1 litres of pure alcohol per adult aged 15+ in 2022, placing the country among those with the highest levels of alcohol consumption globally (WHO, 2022b).

However, aggregate consumption measures alone do not capture how alcohol is consumed or how alcohol-related risks are distributed within populations. Countries with similar levels of per capita consumption may differ substantially in drinking patterns, particularly with respect to the frequency and intensity of drinking occasions, which are closely linked to acute alcohol-related harm (Rehm et al., 2010). Accordingly, indicators capturing drinking frequency, quantities consumed per occasion, and high-risk drinking behaviours offer a more differentiated understanding of population risk profiles.

This perspective is especially relevant in the Republic of Moldova. Although levels of alcohol consumption and alcohol-related mortality have been documented in international monitoring reports and comparative studies (WHO, 2018; Penina, 2017), evidence on current drinking patterns, population groups most exposed to risk, and factors linked to high-risk drinking remains limited and fragmented.

Using data from the 2021 World Health Organization STEPwise approach to Surveillance (STEPS) survey, this study examines alcohol consumption among adults in the Republic of Moldova by describing key drinking patterns and analysing heavy episodic drinking (HED). The analysis contributes to the limited empirical literature on alcohol consumption in Moldova by providing nationally representative evidence on drinking patterns and the social distribution of heavy episodic drinking.

LITERATURE REVIEW

WHO monitoring reports highlight significant regional differences in alcohol consumption and drinking habits, with the WHO European Region recording the highest levels of per capita alcohol intake worldwide, including in several Eastern European nations such as Moldova. Alcohol consumption patterns also differ systematically across socio-demographic groups, with notable gender disparities and broader socioeconomic and contextual factors shaping alcohol use (WHO, 2018; WHO, 2024).

Among the drinking patterns observed in the region, heavy episodic drinking remains a major concern, as its prevalence has shown limited decline at the population level despite reductions in overall alcohol consumption in several European countries (Probst et al., 2020)

Evidence from the WHO STEPS surveys indicates that this pattern is also found in the Republic of Moldova, where heavy episodic drinking continues to characterise a significant segment of the drinking population (WHO, 2022a).

Beyond differences in overall levels of alcohol consumption, a substantial body of research has documented the significance of drinking patterns in influencing alcohol-related harm. In particular, the concentration of alcohol intake into high-volume drinking occasions has been recognised as a key factor associated with increased risks of both acute and chronic health outcomes (Rehm et al., 2007; Rehm et al., 2010).

Evidence from Central and Eastern Europe has been crucial in demonstrating how hazardous drinking patterns contribute to alcohol-related mortality. Early analyses of mortality trends in the region highlighted alcohol consumption's role in the high levels of premature mortality observed among men (McKee & Shkolnikov, 2001). Later studies provided strong empirical evidence linking episodic heavy drinking and irregular consumption of large amounts of alcohol with mortality risks, especially among working-age men (Leon et al., 2007; Popova et al., 2007). Population-based cohort studies have further confirmed that hazardous drinking, including heavy drinking occasions, is associated with increased mortality risks (Bobak et al., 2016). More recent evidence indicates that excessive alcohol consumption continues to be a significant factor in high male mortality in Eastern Europe and suggests that regulatory measures can reduce alcohol-related harms, though overly restrictive policies may lead to increased use of unrecorded or surrogate alcohol (Yakovlev, 2021).

Evidence from Moldova broadly reflects these regional patterns. Comparative mortality analyses show that Moldova has a unique alcohol-related mortality profile within a mainly wine-drinking culture. Unlike several neighbouring post-Soviet countries, alcohol-related deaths in Moldova are characterised by a lower incidence of deaths from acute intoxication and a smaller gender gap (Penina, 2017).

Understanding these patterns requires attention not only to mortality outcomes but also to the social distribution of drinking behaviours. Cross-national survey research has documented strong social stratification in hazardous drinking across post-socialist countries in Eastern Europe. Heavy episodic drinking is disproportionately concentrated among men, middle-aged adults, and individuals with lower levels of education, with substantial variation across countries (Pomerleau et al., 2008). Drinking patterns are further shaped by the social context in which alcohol is consumed, with certain drinking settings associated with higher risks of heavy episodic drinking and other indicators of problematic alcohol use (Stickley et al., 2007). Evidence from Moldova is consistent with these dynamics. One of the few systematic national analyses of alcohol consumption documented a high prevalence of infrequent but high-volume drinking occasions, often linked to social celebrations and facilitated by the widespread availability of home-produced alcohol (Expert-Grup, 2008).

The structure of alcohol availability also significantly influences drinking patterns in Eastern Europe, notably through the widespread presence of unrecorded alcohol. Evidence from WHO STEPS surveys conducted in nine newly independent states shows that unrecorded alcohol accounts for a substantial part of alcohol consumption in the region, with over one-third of current drinkers reporting its use. The findings also indicate that the Republic of Moldova has relatively high levels of unrecorded alcohol consumption, mainly driven by home-produced beverages (Probst et al., 2021). The broad availability of informal and home-made alcohol further shapes drinking habits and alcohol-related risks in the area. Policy and epidemiological analyses suggest that informal alcohol markets can affect consumption patterns and may weaken the effectiveness of traditional alcohol control policies when regulatory measures are not paired with targeted efforts to address unrecorded alcohol production and distribution (Neufeld et al., 2020).

In this context, Moldova is a significant setting for studying alcohol consumption patterns given its long-standing alcohol-related health issues and unique drinking environment. However, systematic population-based studies exploring drinking patterns and high-risk alcohol use in Moldova are still limited. As a result, empirical data on the prevalence and social distribution of heavy episodic drinking based on nationally representative surveys remains rare.

Against this background, the present study investigates two main research questions. First, what are the patterns of alcohol consumption among the adult population in Moldova? Second, which socio-demographic and behavioural traits are associated with heavy episodic drinking?

Drawing on earlier evidence from Central and Eastern Europe, heavy episodic drinking is likely more common among men, varies across regions, and is linked to behavioural factors such as smoking and the use of unrecorded alcohol.

METHODS

Data source and study population. This study uses cross-sectional data from the World Health Organization's STEPwise Approach to Surveillance (WHO STEPS) survey carried out in the Republic of Moldova between August 2021 and January 2022. The survey employed a three-stage, stratified cluster sampling design based on the household sampling frame of the National Bureau of Statistics. Census enumeration areas were selected with probability proportional to size, followed by random selection of households and, within each household,

random selection of one eligible adult aged 18–69 years.

A total of 4,097 individuals aged 18–69 years were interviewed from 5,760 selected households, resulting in an overall response rate of 71.1%. The analytical sample included 1,774 men and 2,323 women. By age group, 340 respondents were aged 18–29 years, 1,099 were aged 30–44 years, 1,408 were aged 45–59 years, and 1,250 were aged 60–69 years. Overall, 2,487 respondents lived in rural areas and 1,610 in urban areas. The present analysis utilised anonymised secondary data from the national STEPS survey, which was approved by the relevant national ethics committee.

Measures. The analysis employed a stepwise approach to distinguish between descriptive drinking patterns, bivariate associations, and independent correlates of HED. It proceeded in three stages: (1) descriptive analysis of alcohol consumption patterns within the population; (2) exploration of unadjusted links between sociodemographic and behavioural traits and HED; (3) development of multivariable models to identify factors independently related to HED after controlling for confounding.

Drinking patterns. Alcohol consumption indicators were derived from the WHO STEPwise approach to Surveillance (STEPS) instrument and analysed using survey-weighted population estimates. Participants were classified as: (i) ever drinkers (those who have ever consumed alcohol; yes/no), (ii) past-12-month drinkers (any alcohol use in the previous 12 months; yes/no), and (iii) current drinkers - any alcohol use in the preceding 30 days; yes/no). Among current drinkers, the mean number of standard drinks per drinking occasion was examined. A standard drink was defined according to WHO STEPS guidance as containing 10 g of pure alcohol.

Among current drinkers, drinking intensity over the past 30 days was categorised as low, intermediate, or high using WHO sex-specific thresholds for average pure alcohol intake per drinking occasion (men: <40 g, 40–59.9 g, ≥60 g; women: <20 g, 20–39.9 g, ≥40 g). These categories were used solely for descriptive analyses of drinking patterns and were not included as predictors in regression models to prevent conceptual overlap with the heavy episodic drinking outcome.

Unrecorded alcohol consumption was also evaluated. Consistent with the WHO definition, unrecorded alcohol refers to alcohol not included in official taxation or sales data because it is produced, distributed, and/or consumed outside government-regulated channels, including homemade or informally produced alcohol, smuggled alcohol, alcohol not intended for drinking, and cross-border purchases recorded somewhere else (WHO, 2018).

Outcome. Heavy episodic drinking was defined as the consumption of six or more standard drinks on at least one occasion in the previous 30 days and was analysed as a binary outcome (yes/no). This definition follows the standard WHO STEPS indicator and captures episodic spikes in alcohol intake rather than average volume, which is particularly relevant for assessing acute alcohol-related risks.

Covariates. Covariates were specified beforehand based on theoretical considerations and evidence linking sociodemographic characteristics and health-related behaviours to risky alcohol consumption. The following variables were included: sex; age group (18–29, 30–44, 45–59, 60–69 years [reference]); place of residence (urban [reference] vs rural); region of residence (Chișinău [reference], Centre, North, South); educational attainment (low, medium, high [reference]); employment status (government/non-government employee [reference], self-employed, economically inactive, retired, unemployed); and marital status (married/cohabiting [reference], never married, previously married). Current smoking status (yes/no) and unrecorded alcohol consumption in the past seven days (yes/no) were included as behavioural covariates.

An economic status indicator available in the STEPS dataset was evaluated but excluded from multivariable models due to significant item non-response and limited variability, which could compromise model stability and the interpretability of adjusted estimates.

Statistical analysis. All analyses were carried out using SPSS Statistics (version 29) Complex Samples procedures to account for the multistage stratified cluster sampling design of the WHO STEPS survey, incorporating sampling weights, stratification, and primary sampling units. Weighted prevalence estimates and means were used to describe alcohol consumption patterns and the prevalence of heavy episodic drinking. Group differences in descriptive analyses were assessed using survey-adjusted, design-based tests.

Initial associations between each covariate and heavy episodic drinking were first analysed using bivariate complex-sample logistic regression models, resulting in crude odds ratios. Afterwards, all covariates were entered together into a multivariable complex-sample logistic regression model to calculate adjusted odds ratios and evaluate independent links with heavy episodic drinking.

Variance estimation was performed using Taylor series linearisation to account for the complex survey design. Analyses were based on complete-case data.

MAIN RESULTS

Table 1 summarises the prevalence and intensity of alcohol use among adults in the Republic of Moldova, overall and by sex. Alcohol consumption was highly common in the adult population, with 94.3% of respondents reporting lifetime alcohol use. This proportion decreased to 88.2% when limited to alcohol consumption within the past 12 months. Among those who drank in the past year, 76.0% reported alcohol use within the last 30 days, corresponding to 2,446 current drinkers in the analytical sample. These figures suggest that while lifetime exposure to alcohol is almost universal, a slightly smaller proportion of adults engage in recent and regular alcohol consumption.

Across measures of alcohol use based on time since last consumption, prevalence was consistently higher among men than women, with the gender difference becoming more noticeable for more recent drinking. Among past-year drinkers, 83.5% of men reported alcohol consumption in the previous 30 days compared to 67.7% of women. Among current drinkers, the average number of standard drinks consumed per drinking occasion during the past 30 days was 2.74 (95% CI: 2.60–2.89). The volume consumed per occasion was higher among men, who reported a mean of 3.26 standard drinks (95% CI: 3.04–3.47), compared to 2.03 among women (95% CI: 1.94–2.13).

When drinking intensity was classified using WHO sex-specific thresholds for mean pure alcohol intake per drinking occasion, as described in the methods, 52.9% of current drinkers were categorised as low-level drinkers, 38.6% as moderate drinkers, and 6.7% as high-level drinkers. The distribution across these categories also varied by sex. Women were predominantly concentrated in the moderate drinking category (61.2%), whereas men were more often represented at both the lower (68.3%) and higher (7.1%) ends of the drinking intensity spectrum.

Unrecorded alcohol was a significant part of drinking habits among current drinkers. Nearly half of respondents (47.4%) reported consuming unrecorded alcohol in the past week. The occurrence was higher among men (53.5%) than women (39.1%).

Heavy episodic drinking, defined as consuming six or more standard drinks on at least one occasion in the past 30 days, was reported by 22.1% of current drinkers. This drinking pattern was significantly more common among men, with 33.9% reporting at least one such episode during this period, compared to 5.9% of women.

Table 1.

Patterns of alcohol consumption among adults

	Men	Women	Total
Ever consumed alcohol (yes)	1712 (97.0)	2145 (91.5)	3857 (94.3)
Consumed alcohol within the past 12 months (yes)	1527 (90.3)	1760 (85.9)	3287 (88.2)
Consumed alcohol within the past 30 days among 12-month consumers (yes)	1265 (83.5)	1181 (67.7)	2446 (76.0)
Average number of standard drinks per drinking occasion in the past 30 days	3.26 (95 CI: 3.04–3.47)	2.03 (95 CI: 1.94–2.13)	2.74 (95 CI: 2.60–2.89)
Drinking level based on the average number of standard drinks per occasion within the past 30 days			
Low: men < 40 g of pure alcohol on average per drinking occasion; women: < 20 g.	837 (68.3)	368 (31.7)	1205 (52.9)
Moderate: men 40–59.9 g of pure alcohol on average per drinking occasion; women 20–39.9 g.	259 (22.2)	694 (61.2)	953 (38.6)
High: men ≥ 60 g of pure alcohol on average per drinking occasion; women ≥ 40 g.	137 (7.1)	89 (5.4)	226 (6.7)
Consumed unrecorded alcohol in the previous 7 days, yes	817 (53.5)	523 (39.1)	1340 (47.4)
Heavy episodic drinking (≥6 drinks at least once in the past 30 days), yes	475 (33.9)	73 (5.9)	548 (22.1)

Note: N = unweighted sample size. Percentages and means are survey-weighted estimates with 95% confidence intervals, accounting for the complex sampling design of the WHO STEPS survey.

Source: developed by the author

Table 2 also illustrates how drinking patterns and heavy episodic drinking vary across different sociodemographic and behavioural characteristics among current drinkers. Across age groups, the prevalence of alcohol consumption in the past 30 days remained fairly consistent, ranging from 74.0% to 78.0%. Differences between age groups became more noticeable when examining the intensity of drinking. Higher proportions of high-level drinking were observed among younger and middle-aged adults, whereas this pattern was less common among respondents aged 60–69 years. Heavy episodic drinking showed a similar age distribution, with its highest prevalence among adults aged 45–59 years (25.9%), compared to 20.1% among those aged 18–29 years and 19.1% in the oldest age group.

The area of residence also influenced patterns of alcohol use. Alcohol consumption in the past 30 days was more common among urban residents than among those living in rural areas (79.4% versus 72.2%). However, the distribution of drinking intensity showed a slightly higher proportion of heavy drinking in rural areas (9.5% compared with 7.8% in urban areas). A similar difference was seen in heavy episodic drinking, which was reported more frequently by rural residents (25.8%) than by those living in urban settings (19.2%).

Regional differences highlight the uneven distribution of drinking behaviours. Recent alcohol consumption was most common in Chișinău (81.9%), while the proportions of high-level drinking (2.2%) and heavy episodic drinking (11.2%) remained comparatively low. In the North region, recent drinking was less widespread (69.6%), yet this area recorded the highest levels of both high-level drinking (27.3%) and heavy episodic drinking (39.2%). The Centre region had an intermediate position, with relatively high levels of recent alcohol consumption (78.0%) alongside more moderate levels of high-level drinking (3.4%) and heavy episodic drinking (18.6%). In the South region, recent drinking was also less frequent (67.3%), but heavy episodic drinking remained relatively high (29.5%), despite a low proportion of high-level drinking (1.9%).

Differences by educational attainment were also clear in the distribution of drinking patterns. Recent alcohol consumption was fairly similar across educational groups, although it was somewhat more common among respondents with lower levels of education (80.8%). Educational gradients were more pronounced in the intensity of drinking. High-level drinking was most common among individuals with low education (13.3%), while lower proportions were seen among those with medium (7.3%) and higher education (8.6%). At the same time, the proportion of low-level drinkers increased with educational attainment, from 47.5% among individuals with low education to 58.6% among those with higher education. Heavy episodic drinking showed a similar pattern, decreasing from 30.0% among respondents with low education to 22.7% among those with medium education and 16.6% among individuals with higher education.

Employment status also influenced differences in drinking behaviour. Recent alcohol consumption was most common among the unemployed (82.4%) and the self-employed (80.5%), while lower levels were seen among economically inactive respondents (69.1%) and retirees (71.3%). The differences were more noticeable when looking at drinking intensity. High-level drinking was most prevalent among the unemployed (23.7%) and remained higher among the self-employed (10.6%) than among employees (7.2%), economically inactive respondents (7.1%), or retirees (3.1%). Heavy episodic drinking followed a similar pattern, with the highest rates among the unemployed (37.0%) and the self-employed (31.6%), and significantly lower levels among employees (19.9%), retirees (16.7%), and economically inactive respondents (14.5%).

Across marital status groups, recent alcohol consumption varied only slightly, ranging from 72.1% among previously married respondents to 77.8% among those who had never married. Differences in drinking intensity were somewhat more evident, with the highest proportion of high-level drinking among respondents who were previously married (13.1%). Heavy episodic drinking, however, remained at similar levels across the three groups, ranging from 21.9% to 22.5%.

Smoking status marked one of the most pronounced contrasts in drinking behaviour. Recent alcohol consumption was reported by 88.3% of smokers, compared with 70.4% of non-smokers. The distribution of drinking intensity also differed substantially, as high-level drinking was reported by 14.0% of smokers and 5.4% of non-smokers. Heavy episodic drinking showed the same pattern, being reported by 37.7% of smokers compared with 13.3% among non-smokers.

Table 2.

*Alcohol consumption patterns and heavy episodic drinking by sociodemographic characteristics**

Characteristics	N	Current drinkers - consumed alcohol in the past 30 days (%)	Drinking level among current drinkers (%)			**Heavy episodic drinking (%)**
			Low	Moderate	High	
Sex						
Men	1527	83.5	68.3	22.2	9.6	33.9
Women	1760	67.7	31.7	61.2	7.1	5.9
Age						
18-29 years	276	74.0	51.8	37.4	10.8	20.1
30-44 years	936	77.7	50.7	39.2	10.1	21.9
45-59 years	1158	74.3	53.8	39.3	6.9	25.9
60-69 years	917	78.0	58.0	37.5	4.6	19.1
Residence						
Urban	1332	79.4	53.0	39.3	7.8	19.2
Rural	1955	72.2	52.8	37.6	9.5	25.8
Region						
Chisinau	900	81.9	61.0	36.8	2.2	11.2
Center	1042	77.8	52.9	38.8	8.3	23.3
North	753	69.6	29.6	43.1	27.3	39.2
South	592	67.3	61.0	37.1	1.9	29.5
Education						
Low	520	80.8	47.5	39.2	13.3	30.0
Medium	2031	75.0	51.6	41.1	7.3	22.7
High	736	75.8	58.6	32.7	8.6	16.6
Marital status						
Never married	272	77.8	58.8	31.6	9.6	22.5
Married / cohabitating	2372	76.1	53.8	38.6	7.6	21.9
Previously married	639	72.1	35.6	51.3	13.1	22.2
Work status						
Employee, government & non-government	1529	76.80	54.2	38.6	7.2	19.9
Self-employed	529	80.5	52.6	36.7	10.6	31.6
Economically inactive	416	69.1	50.2	42.6	7.1	14.5
Retired	597	71.3	58.0	38.9	3.1	16.7
Unemployed	213	82.4	43.0	33.3	23.7	37.0
Currently smoking						
Yes	2435	88.30	58.0	28.0	14.0	37.7
No	852	70.40	50.1	44.5	5.4	13.3

Note: *N = unweighted sample size. Percentages and means are survey-weighted estimates with 95% confidence intervals, accounting for the complex sampling design of the WHO STEPS survey.*

Source: *developed by the author*

Table 3 displays the results of logistic regression analyses investigating factors linked to heavy episodic drinking among current drinkers. In the unadjusted models, heavy episodic drinking was connected to a fairly wide range of sociodemographic and behavioural factors, including sex, place of residence, region, educational attainment, employment status, current smoking, and recent consumption of unrecorded alcohol. After adjusting for all covariates simultaneously in the multivariable model, some of these associations were weakened, and only a

few characteristics remained statistically significant. Overall, the adjusted model shows that heavy episodic drinking was primarily differentiated by sex, region of residence, and selected behavioural characteristics.

Sex remained the factor most strongly associated with heavy episodic drinking. Compared to women, men had substantially higher odds of reporting heavy episodic drinking (OR 5.86; 95% CI: 3.91–8.79). Geographic differences also persisted after adjustment. Relative to residents of Chisinau, the odds of heavy episodic drinking were higher in all other regions of the country. The highest adjusted odds were observed among respondents living in the North (OR 7.74; 95% CI: 3.98–15.06), followed by those residing in the South (OR 4.05; 95% CI: 2.24–7.31), and the Centre (OR 3.10; 95% CI: 1.69–5.69). Behavioural characteristics were also associated with heavy episodic drinking in the multivariable model. Current smokers had higher odds of heavy episodic drinking than non-smokers (OR 2.03; 95% CI: 1.49–2.78). Similarly, respondents who reported consuming unrecorded alcohol in the previous seven days were more likely to report heavy episodic drinking (OR 2.72; 95% CI: 1.97–3.75). Marital status showed a more limited pattern of association. Although overall differences by marital status remained statistically significant in the adjusted model, the elevated odds were concentrated among respondents who were previously married (OR 1.84; 95% CI: 1.25–2.70) compared to those who were married or cohabiting. By contrast, several characteristics associated with heavy episodic drinking in the unadjusted analysis did not remain statistically significant after adjustment. Specifically, age group, place of residence, educational attainment, and employment status were not associated with heavy episodic drinking in the multivariable model, suggesting that the crude differences observed for these characteristics were largely explained by other sociodemographic and behavioural factors included in the analysis.

Table 3.

Covariates associated with "heavy episodic drinking"

		Unadjusted Odds Ratio (95% CI)	P-value	Adjusted Odds Ratio (95% CI)	P-value
Sex (ref. category = women)	Men	8.20 (5.82–11.56)	<0.001***	5.86 (3.91–8.79)	<0.001***
Age group (ref. = 60–69 years)	18–29 years	1.06 (0.65–1.75)	0.051	1.45 (0.75–2.79)	0.592
	30–44 years	1.19 (0.87–1.61)		1.17 (0.75–1.84)	
	45–59 years	1.48 (1.11–1.97)		1.29 (0.85–1.96)	
Residence (ref. category = Urban)	Rural	1.47 (1.05–2.04)	0.023*	0.69 (0.44–1.10)	0.119
Region (ref. = Chisinau)	Center	2.41 (1.53–3.81)	<0.001***	3.10 (1.69–5.69)	<0.001***
	North	5.13 (3.13–8.40)		7.74 (3.98–15.06)	
	South	3.33 (2.03–5.47)		4.05 (2.24–7.31)	
Education (ref. = High)	Low	2.15 (1.36–3.39	0.005**	0.91 (0.54–1.53)	0.639
	Medium	1.47 (1.05–2.07)		0.84 (0.58–1.22)	
Marital status (ref. = Married/cohabiting)	Never married	1.03 (0.66–1.61)	0.986	0.99 (0.54–1.81)	0.008**
	Previously married	1.02 (0.75–1.37		1.84 (1.25–2.70)	
Work status (ref. = Employed, government and non-government)	Self-employed	1.86 (1.31–2.64)	<0.001***	1.35 (0.89–2.05)	0.123
	Economically inactive	0.69 (0.44–1.08)		0.68 (0.40–1.18)	
	Retired	0.81 (0.55–1.18)		0.92 (0.54–1.57)	
	Unemployed	2.37 (1.48–3.79)		1.18 (0.67–2.06)	
Current smoking (ref. = No)	Yes	3.92 (3.04–5.06)	<0.001***	2.03 (1.49–2.78)	<0.001***
Consumed unrecorded alcohol in the past 7 days (ref. = No)	Yes	3.13 (2.35–4.16)	<0.001***	2.72 (1.97–3.75)	<0.001***

[a] *Analyses conducted among current drinkers (N = 2,446)*

Both unadjusted and adjusted odds ratios were estimated using complex-sample logistic regression, accounting for the multistage stratified cluster sampling design and survey weights of the WHO STEPS survey.

*Statistical significance is indicated as follows: *p < 0.05; **p < 0.01; ***p < 0.001*

Source: developed by the author

DISCUSSION

This study investigated alcohol consumption patterns and heavy episodic drinking among adults in the Republic of Moldova using nationally representative data. The findings show that alcohol use is widespread in the population, reflecting the long-standing cultural and social presence of alcoholic beverages in the country. Simultaneously, the results suggest that differences across population groups are mainly expressed through the intensity and patterns of alcohol consumption rather than simply whether individuals participate in drinking. Heavy episodic drinking and high-intensity drinking occasions were unevenly distributed across socio-demographic groups, particularly by sex, region of residence, and certain behavioural characteristics. These findings should also be viewed within the broader regional context, as countries in Central and Eastern Europe are characterised by relatively high levels of alcohol consumption and drinking patterns frequently involving episodic heavy drinking (Popova et al., 2007).

Sex differences were clear in both drinking patterns and in the prevalence of heavy episodic drinking. Among current drinkers, men reported consuming more drinks per session, were more often classified in the high-intensity drinking category, and had significantly higher odds of engaging in heavy episodic drinking. In contrast, women were mainly grouped in the intermediate drinking category defined by the sex-specific WHO thresholds. Similar gender differences in alcohol consumption have been observed across Central and Eastern Europe, where heavy and episodic drinking are still disproportionately common among men (Popova et al., 2007; Pomerleau et al., 2008; WHO, 2018). However, the female drinking profile should not be viewed as insignificant. Comparative studies of alcohol-related harm in Moldova indicate that the effects of alcohol, particularly wine, are not limited to men alone and that alcohol-related risks among women also merit attention (Penina, 2017).

Regional differences emerged as one of the most notable findings of the analysis. Although alcohol consumption was common in Chisinau, respondents living in the capital were less likely to report high-intensity drinking and heavy episodic drinking than those in other parts of the country. These differences remained in the adjusted logistic regression model after accounting for the sociodemographic and behavioural characteristics included in the analysis. One possible explanation relates to the ongoing role of unrecorded alcohol, particularly home-produced beverages, which remain widespread in Moldova (WHO, 2018; Probst et al., 2021). Such forms of alcohol availability may be more prevalent outside large urban centres and could contribute to the higher concentration of alcohol intake during high-volume drinking occasions. Differences in the social composition of the capital, including higher levels of education and more stable employment structures, may also influence drinking patterns in ways that set Chisinau apart from the rest of the country, although these mechanisms cannot be directly examined with the available survey data.

The descriptive analysis showed clear differences in drinking patterns based on smoking status. Smokers reported significantly higher levels of recent alcohol consumption, high-intensity drinking episodes, and heavy episodic drinking compared to non-smokers. These patterns were confirmed in the multivariable analysis, where smoking remained independently linked to heavy episodic drinking. In this context, smoking appears less as an isolated behavioural trait and more as part of a broader cluster of health-risk behaviours. Similar clustering between tobacco use and risky alcohol consumption has been widely documented in epidemiological research. For example, studies have demonstrated that smokers are considerably more likely to engage in frequent binge drinking than non-smokers (Gubner et al., 2016). Evidence from systematic reviews and meta-analyses further supports a consistent relationship between current smoking and binge drinking across adult populations (Molaeipour et al., 2023), indicating that heavy episodic drinking often occurs within wider patterns of harmful lifestyle choices rather than as an isolated behaviour.

The association with unrecorded alcohol is analytically distinct and particularly significant in the Moldovan context. Respondents reporting consumption of unrecorded alcohol had markedly higher odds of heavy episodic drinking even after adjusting for other sociodemographic and behavioural factors. This finding is especially pertinent in a setting where home-produced beverages remain a substantial part of alcohol intake and significantly contribute to overall alcohol exposure (WHO, 2018; Probst et al., 2021). Rather than simply serving as an additional source of alcohol, unrecorded alcohol seems to be integrated into drinking habits that are more likely to involve concentrated and high-volume consumption. Previous research in Central and Eastern Europe has also emphasised that drinking patterns characterised by episodic heavy drinking play an important role in shaping alcohol-related health risks in the region (Popova et al., 2007).

Marital status showed a more complex relationship with heavy episodic drinking. While no clear differences were seen among never-married individuals, those who had been previously married had higher odds of engaging in heavy episodic drinking after adjusting for other factors. Previous studies have linked marital disruption, including divorce and widowhood, with increased alcohol consumption, often explained by the loss of social regulation within partnerships and exposure to social stressors (Power et al., 1999; Leonard & Eiden, 2007).

Educational and employment disparities were evident in the descriptive distribution of drinking patterns, although these associations did not remain statistically

significant in the adjusted model. Respondents with lower levels of education were more frequently found in higher-intensity drinking and heavy episodic drinking categories, whereas those with tertiary education were more often positioned in lower-intensity patterns. A similar gradient was observed across employment groups, with higher levels of heavy episodic drinking seen among unemployed and self-employed respondents. Although these associations were reduced after adjustment, they remain important from a sociological perspective in the Moldovan context, where lower educational attainment and more precarious forms of labour market attachment may influence exposure to riskier drinking practices. More broadly, previous research indicates that unemployment and unstable employment conditions are often linked to adverse health behaviours and outcomes, including alcohol misuse (Vancea & Utzet, 2017; Crismaru et al., 2017).

Overall, the findings emphasise that alcohol-related risks in the Moldovan population are influenced more by how alcohol is consumed than by whether individuals drink. Differences in drinking patterns, especially heavy episodic drinking, seem to be shaped by a combination of socio-demographic and behavioural factors, including sex, region of residence, smoking habits, and exposure to unrecorded alcohol. In this way, hazardous alcohol use should be viewed as part of wider social and behavioural contexts that determine alcohol-related risks within the population.

LIMITATIONS

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design of the STEPS survey does not allow causal inference regarding the relationship between the examined characteristics and heavy episodic drinking. Second, alcohol consumption was self-reported and may therefore be affected by recall bias or underreporting, particularly for high-intensity drinking occasions. In population surveys, individuals with the most harmful drinking patterns are also less likely to participate or to report their alcohol consumption accurately, which may lead to an underestimation of heavy episodic drinking. Third, the survey data do not capture the broader social contexts in which alcohol is consumed, such as drinking settings or social norms, which may influence drinking behaviour. Finally, the measure of unrecorded alcohol consumption reflects recent exposure and may not fully capture longer-term drinking patterns.

CONCLUSIONS

This study offers nationally representative evidence on alcohol consumption patterns and heavy episodic drinking among adults in the Republic of Moldova. Heavy episodic drinking was reported by more than one in five current drinkers and was strongly linked to male gender, region of residence, smoking, and the consumption of unrecorded alcohol. These findings add to the limited empirical data on alcohol use in Moldova by illustrating the social distribution of high-risk drinking patterns. Future research should further investigate the social and regional contexts of drinking practices in Moldova, including the role of unrecorded alcohol and the clustering of alcohol use with other health-risk behaviours.

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