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DOI

[10.1007/s10935-024-00807-w](https://doi.org/10.1007/s10935-024-00807-w)

Publication date

2025

Document Version

Final published version

Published in

Journal of Prevention

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[Link to publication](https://doi.org/10.1007/s10935-024-00807-w)

Citation for published version (APA):

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Containment Measures and Alcohol Consumption Among Drinking Higher Education Students Before and During the COVID-19 Pandemic: A Multilevel Analysis in 25 Countries

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Accepted: 2 September 2024 / Published online: 26 September 2024

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Abstract

Hazardous alcohol use tends to be more prominent among higher education students. The COVID-19 pandemic severely altered student life, raising questions on its impact on students' alcohol use patterns. The current study examined cross-country variations in drinking behaviors (weekly drinking and binge drinking), and the extent to which these variations were associated with containment measures implemented during the first wave of the COVID-19 pandemic. Data were obtained from the COVID-19 International Student Well-being Study, covering students in 25 middle- and upper-high income countries. Data on government responses were retrieved from the Oxford COVID-19 Government Response Tracker. Multilevel multinomial logistic regression analyses were performed on weekly drinking ($n=44,212$) and binge drinking ($n=32,785$). Considerable cross-country variation existed for weekly drinking and binge drinking. In the majority of countries, a self-reported decrease in weekly drinking and a substantial self-reported decrease in binge drinking were observed. Closings of schools were associated with decreases in weekly drinking, while limitations on social gatherings were associated with increases in weekly drinking. The stringency index was associated with reporting decreased binge drinking. The study findings demonstrate a number of small yet significant associations between containment measures and changes in student drinking behaviors. Future studies are required to uncover why some students increased their alcohol consumption, particularly in countries with stricter limitations on social gatherings.

Keywords Alcohol consumption · Higher education students · COVID-19 pandemic · Containment measures · Comparative cross-country research

Introduction

Excessive alcohol consumption patterns are common among young adults (Degenhardt et al., 2016; World Health Organization, 2019), and tend to be more prominent among students in higher education institutions (HEIs) (Linden-Carmichael & Lanza, 2018; Merrill & Carey, 2016). The higher education experience signifies a transitional period in young adults' lives, including numerous changes, such as moving out of the parental home, increased living costs, adapting to an academically demanding context, and adjusting to a new social environment (Conley et al., 2018). These changes render higher education students especially vulnerable to psychosocial distress (Sharp & Theiler, 2018). In addition, students often report stressors such as academic stress, dissatisfaction with the academic institution, relationship problems with peers and faculty, and a lack of social and financial resources (Hurst et al., 2013; McIntyre et al., 2018; Pascoe et al., 2019). These context-specific stressors may increase the risk of engaging in excessive alcohol consumption patterns.

Students who drink alcohol to enhance their mood, and to a lesser extent, students who drink to alleviate negative emotions, tend to engage in excessive alcohol drinking patterns more often (Kuntsche et al., 2017). Students are also more likely to drink more alcohol during intensive and stressful periods, such as exam periods (Van Damme et al., 2017).

During the first wave of the COVID-19 pandemic, most countries implemented a range of unprecedented containment measures, including physical distancing measures, prohibition of (international) non-essential movements, and quarantine orders. Countries differed in terms of which measures they implemented, the timing, as well as the regulatory strictness of the implementation (Capano et al., 2020). Since HEIs implemented major reorganizations in the face of the pandemic (e.g., transitioning to a mostly online learning environment), students experienced additional containment measures (United Nations Educational Scientific and Cultural Organization [UNESCO], 2020).

Research into the initial impact of the pandemic on drinking behaviors in the general population points to overall decreases in alcohol consumption across most countries, and increases in consumption among certain subpopulations (Acuff et al., 2022; Kilian et al., 2021, 2022; Schmidt et al., 2021). Similar changes were observed among student populations (Bollen et al., 2021; Busse et al., 2021; Jackson et al., 2021; Tavoracci et al., 2021; Tholen et al., 2022; van Hooijdonk et al., 2022). These paradoxical findings on the impact of the pandemic on drinking behaviors have been explained by two not mutually exclusive mechanisms (Rehm et al., 2020). The first mechanism suggests that containment measures limited opportunities to attend social gatherings and access on-premise consumption sites, leading to an overall decrease in alcohol consumption (the availability mechanism). The second mechanism posits that pandemic-related stressors (e.g., social isolation, financial difficulties) may trigger psychosocial distress, leading to an increase in alcohol consumption among those

using alcohol as a coping strategy (the distress mechanism). This is worrisome, as it may indicate that some people are self-medicating to manage psychosocial distress (Khantzian, 1997).

Since higher education students are more likely to exhibit excessive alcohol consumption patterns, they are exposed to a host of stressors, and they are vulnerable to psychosocial distress, more research is needed to better understand if and how the pandemic impacts students' drinking behaviors.

Little research has explored *which* pandemic-related restrictions contributed to changes in alcohol consumption. One study observed associations between self-reported intensity of stay-at-home requirements and increased binge drinking (Acuff et al., 2022). Another study found no association between increasingly restrictive lockdown tiers within one country and decreases in alcohol consumption among 18–34 year-olds, probably because across all tiers, alcohol could still be easily purchased in stores or online (Aresi et al., 2022). However, to our knowledge, no studies have investigated whether cross-national variations in COVID-19 containment measures were associated with drinking students' alcohol consumption. This paper aims to examine (1) cross-country variation in self-reported changes in students' drinking behaviors (i.e., weekly drinking, binge drinking) during the first wave of the COVID-19 pandemic, and (2) the role of the most relevant containment measures (e.g., closings of HEIs, cancellations of public events, limits on social gatherings, and stay-at-home requirements (Supplementary file, Table S1) in explaining cross-country differences in self-reported drinking behaviors.

Method

Data

Data were collected as part of the COVID-19 International Student Well-being Study (C19 ISWS), a cross-sectional multi-country study performed across 26 middle- and upper-high-income countries and 133 HEIs during the first wave of the COVID-19 outbreak between April 26 and July 7, 2020. The C19 ISWS applied a stratified convenience sampling design. HEIs were selected within countries in the World Health Organization European Region and three additional countries (Canada, South Africa, and the USA). All students of the participating HEIs were invited to take part in a web-based survey. Respondents were recruited online through e-mail, student-specific platforms, and social media platforms. Two-thirds of HEIs collected data within the first month of the launch. The core questionnaire was designed in English and translated in the respective languages of participating countries via a committee approach (Van de Velde et al., 2021). Eligibility criteria to answer the web-based survey were: being enrolled in a HEI, aged 17 years or above, and providing informed consent. Ethical approval was obtained in all participating HEIs, and the multi-country research design was approved by the University of Antwerp Ethics Committee of Social Sciences and Humanities, file number SWH_20_38. More details about the study procedures can be found in the study protocol (Van de Velde et al., 2021).

Sample Selection

The total sample contained 123,263 students, of whom 100,341 met the inclusion criteria of this study. For each of the dependent variables (i.e., change in weekly drinking, change in binge drinking), students with valid scores on all measures were retained. Subsamples of these data were used to cover each participating country during a period with relatively stable policy measures. The basic rule was selecting the first weeks (at least two) following the survey implementation until the week in which government measures were changed (Supplementary file, Table S2). Finally, students who reported zero consumption ($n=21,801$) and students who did not engage in binge drinking ($n=35,852$) both before and during the pandemic were excluded from the main analyses, resulting in final samples of 44,212 students for weekly drinking and 32,785 students for binge drinking (Supplementary file, Figure S1). Non-users were excluded since the primary focus of the study is on drinking students.

Measures

Dependent Measures

Change in Weekly Drinking The number of units (e.g., a glass of wine, a shot, a glass of beer between 25 and 33 cl) consumed on average per week before the COVID-19 outbreak (“the average situation during the month prior to the moment that the first COVID-19 measures were implemented”) and during the last week (“the week prior to filling out this survey”). Responses were categorized as ‘decreased use’, ‘no change’, or ‘increased use’. Students who answered zero for both time intervals were treated as non-users and excluded from analyses.

Change in Binge Drinking The frequency of binge drinking, defined as drinking six or more units of alcohol on a single occasion (Bush et al., 1998), before the COVID-19 outbreak and during the last week. The answer categories were: (1) (almost) never; (2) less than once a week; (3) once a week; (4) more than once a week; (5) (almost) daily; (6) prefer not to say. Students who answered (1) (almost) never for both time intervals were treated as non-bingers and were excluded from analyses. Responses were categorized as ‘decreased bingeing’, ‘no change’, or ‘increased bingeing’.

Independent Measures

The Oxford COVID-19 Government Response Tracker (OxCGRT) contains information on policy interventions throughout the pandemic and is considered adequate for cross-country analyses (Hale et al., 2021). Included containment measures were (a) closings of schools/universities; (b) closings of workplaces; (c) cancellations of public events; (d) limits on social gatherings; (e) stay-at-home requirements; (Tatlow & Phillips, 2021). The stringency index was provided by the OxCGRT, and also includes (f) closings of public transport; (g) restrictions on internal movement; (h)

restrictions on international level; and (i) the implementation of public information campaigns as provisioned by national health systems (Supplementary File 1, Table S1). For the USA and Canada, regional measures corresponding to the participating HEI region were selected (New Jersey, Quebec). For the UK, measures for England were selected.

Control Variables

At the individual level, we controlled for *sex* (male, female), *age* (grand mean centered), *migration background*, *study field* (based on ISCED-F 2013 (UNESCO United Nations Educational & Organization, 2015), and *measurement adherence* (“To what degree do you adhere to the COVID-19 measures that are currently implemented by the government?”), ranging from (0) totally not to (10) very strictly.

To account for countries’ epidemiological situation, we controlled for the *timing of the survey in relation to the peak of the first COVID-19 wave* (after (reference category), during, and before the peak). This peak was defined by the highest level of excess mortality and calculated based on data from Eurostat or national and regional statistics bureaus (Eurostat, 2020). To account for countries’ macroeconomic conditions, *gross domestic product (GDP) per capita (/10,000)* in 2020 (grand mean centered) was controlled for (Organisation for Economic Co-operation and Development [OECD], 2022).

Analytic Strategy

Statistical Analyses

Within-country variations in self-reported changes in students’ drinking behaviors were examined by non-parametric dependent samples tests for continuous (Wilcoxon signed-rank test) and categorical (Stuart-Maxwell test) variables. Between-country variations were examined by Kruskal-Wallis and post-hoc Bonferroni tests. The strength of associations between country-level variables was assessed with two-tailed Spearman rank correlations.

To examine the role of the containment measures, multilevel multinomial logistic regression analyses were performed (with no change in behavior as the reference category). Adjusted odds ratios and 95% confidence intervals (CI) were calculated based on y-standardized coefficients to allow for comparability across hierarchical models (Mood, 2010). We found no indications for the presence of multicollinearity, outliers, and highly influential cases. Box-Tidwell and post-hoc Bonferroni tests revealed no linear associations between independent continuous variables and the logits of the dependent variables.

Hierarchical three-level models were constructed, distinguishing between the student-level, the HEI-level, and the country-level. First, we estimated models including the individual-level variables and the containment measures (Model 1). Second, we controlled for countries’ epidemiological and macroeconomic conditions (Model 2). Containment measures were tested one at a time. Including more than one measure

simultaneously was not possible due to high correlations and a limited number of highest-level units.

We assessed the robustness of the statistical analyses by additional alternative specifications. First, alternative subsamples excluding the survey weeks wherein countries' containment measures were changing were analyzed (Supplementary file, Table S2). Second, analyses for weekly drinking were repeated with a conservative cut-off of twenty drinks ($n=42,941$, 97.1% of cases) to assess the impact of extreme responses. To account for the intensity of alcohol use, separate analyses were performed for light and heavy alcohol consumption, distinguished based on prior research (Wood et al., 2018). For heavy consumption, restricted models (HEI-level excluded, only 20 countries) had to be used due to an insufficient number of cases. Finally, leave-one-out analyses, where one country is excluded each time, were performed to examine whether individual countries disproportionately influenced the results (available upon motivated request) (Rodgers, 1999). Restricted models (HEI-level excluded, and estimation method IGLS/MQL1 for binge drinking) had to be used due to insufficient cases. We used SPSS® Version 28 for data preparation, descriptive and bivariate statistics, and MLwiN Version 3.05 for all other analyses.

Results

The sample descriptions can be found in Supplementary File 1, Table S3 & S4. The descriptive analyses showed that changes in weekly drinking varied greatly between countries (Fig. 1), as did changes in binge drinking (Fig. 2) (see also Supplementary File 1, Table S5). Between-country differences were significant at $p < 0.001$ for both weekly drinking ($\chi^2(24) = 3171.09$) and binge drinking ($\chi^2(24) = 3795.91$). Although

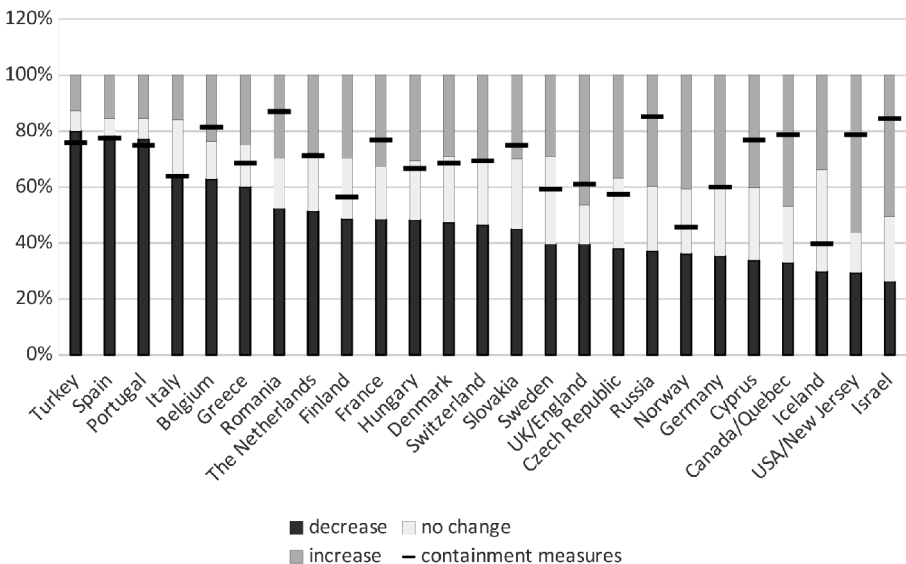


Fig. 1 Changes in weekly drinking and scores on stringency index per country ($n=44,212$)

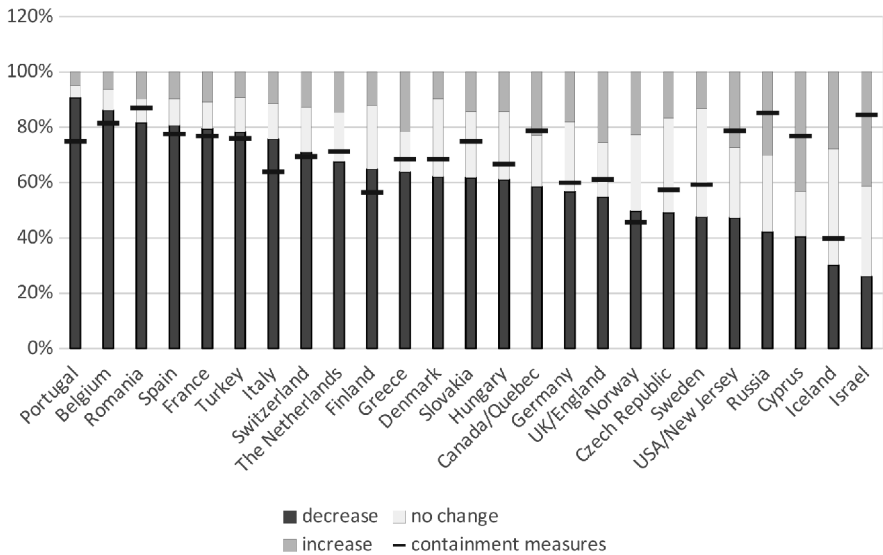


Fig. 2 Changes in binge drinking and scores on stringency index per country ($n=32,785$)

no clear patterns could be established, the proportion of students reporting a decrease tended to be relatively lower in countries with more lenient containment measures, which was more apparent for binge drinking than for weekly drinking. Some notable exceptions were Israel, Cyprus, and Russia.

Significant within-country changes in weekly drinking could be observed for fifteen countries. For Cyprus, Czech Republic, Iceland, Russia, and the UK, no significant differences were found. For Canada, Germany, Israel, Norway, and the USA, significant increases in weekly drinking were found. Significant within-country decreases in binge drinking were observed for twenty countries. For Iceland, Israel, Russia, the USA and Cyprus, no significant changes in binge drinking were observed (Supplementary File 1, Tables S6, S7). All in all, a decrease in weekly drinking and a notable decrease in binge drinking were observed in most countries.

The stringency index was highest for Romania, Russia, and Israel, and lowest for Finland, Norway, and Iceland. There was little cross-country variation in the cancellations of public events measure (Supplementary File 1, Table S8). The correlations between three of the individual containment measures were moderate to high (Supplementary File 1, Tables S9, S10).

Multilevel Models

Weekly Drinking

There was significant cross-country variation in weekly drinking, with 12.0% of the variation in reporting decreased weekly drinking being explained by differences between countries (13.6% was explained by also taking into account the HEI level).

The cross-country variation was less substantial for increased weekly drinking (3.7% on the country level, and 4.1% when including the HEI level).

Table 1 shows that the stricter the policies surrounding closings of schools, the more likely students in these countries were to decrease weekly drinking rather than to not change their weekly drinking (AOR: 1.022; $p=0.020$). Students in countries with stricter limitations on social gatherings were more likely to increase weekly drinking (AOR: 1.016; $p=0.029$). Sensitivity analyses on an alternative subsample excluding survey weeks with changing containment measures and a sample excluding students with extreme scores yielded similar results (Supplementary File 1, Tables S11 & S12). Among light drinkers, only the association for limited social gatherings remained significant (AOR: 1.022; $p=0.009$; Supplementary File 1, Table S13).

Table 1 Adjusted odds ratios (AOR) of multilevel multinomial logistic regression analyses for changes in weekly drinking (ref. No change)

	Decrease				Increase			
	AOR	95% CI	ICC	<i>p</i>	AOR	95% CI	ICC	<i>p</i>
Model 1^a								
Containment measures								
Stringency index	1.022	0.988–1.055	11.6%	0.210	1.034	0.997–1.069	3.2%	0.062
a. Closings of schools/ universities	1.019	1.002–1.036	10.7%	0.027	1.018	1.000–1.034	3.2%	0.060
b. Closings of workplaces	1.009	0.990–1.029	12.0%	0.366	1.015	0.994–1.035	3.5%	0.157
c. Cancellations of public events	0.996	0.974–1.016	12.3%	0.645	0.991	0.969–1.015	3.5%	0.426
d. Limits on social gatherings	0.992	0.980–1.005	11.3%	0.242	1.015	1.000–1.028	3.1%	0.032
e. Stay-at-home requirements	1.016	0.998–1.034	10.9%	0.079	1.018	1.000–1.037	3.2%	0.052
Model 2^b								
Containment measures								
Stringency index	1.022	0.987–1.061	9.6%	0.227	1.029	0.991–1.071	3.5%	0.124
a. Closings of schools/ universities	1.022	1.004–1.040	8.7%	0.020	1.018	1.000–1.038	3.5%	0.070
b. Closings of workplaces	1.012	0.993–1.033	9.5%	0.218	1.011	0.989–1.032	3.7%	0.302
c. Cancellations of public events	0.995	0.974–1.016	10.2%	0.666	0.989	0.966–1.012	3.6%	0.310
d. Limits on social gatherings	1.002	0.987–1.017	9.9%	0.818	1.016	1.003–1.032	3.0%	0.029
e. Stay-at-home requirements	1.016	0.995–1.035	9.2%	0.143	1.017	0.997–1.041	3.5%	0.091

Notes: Estimation method: RIGLS (PQL2); AOR and 95% CI calculated from y-standardized coefficients; n country=25; n HEI=118; n students=44,212

a. Controlled for individual-level variables (sex, age, migration background, study field, measurement adherence)

b. Controlled for individual-level variables and countries' macroeconomic (GDP per capita (/10,000)) and epidemiological (timing in relation to the peak of the first COVID-19 wave) conditions

Alternative specifications that were similar to the final models yielded differences in results. Heavy drinkers (Supplementary File 1, Table S14) were found to be more likely to change their weekly drinking the stricter the stringency index was in their home country (decrease: AOR: 1.116; $p=0.000$; increase: AOR: 1.062; $p=0.022$), and the stricter the policies concerning workplace closing (decrease: AOR: 1.063; $p<0.000$; increase: AOR: 1.039; $p=0.004$). They were more likely to decrease weekly drinking in countries with stricter policies surrounding limits on stay-at-home requirements (AOR: 1.051; $p=0.002$).

The leave-one-out analyses indicated that the results for closings of schools were quite robust (non-significant only when 2 countries were individually excluded). Results for limitations on social gatherings were less robust (non-significant when individually excluding 6 countries). Statistically significant associations between stay-at-home requirements and increased weekly drinking were found when five countries were individually excluded.

Binge Drinking

The cross-country variation was significant only for reporting decreased binge drinking. Of the variation, 18.7% was explained by differences between countries (19.7% was explained by between-HEI*country differences).

In Table 2, it is shown that students in countries with a higher stringency index were more likely to decrease binge drinking rather than to not change their binge drinking (AOR: 1.043, $p=0.029$). In the alternative subsample excluding survey weeks with changing policy measures, additional significant associations were found between the stringency index and increased binge drinking (AOR: 1.042; $p=0.042$), workplace closings and decreased binge drinking (AOR: 1.025; $p=0.018$) and limits on social gatherings and increased binge drinking (AOR: 1.021; $p=0.013$) (Supplementary File 1, Table S15).

Among heavy bingers (Supplementary File 1, Table S16), the results were comparable to the main results and the results in the alternative subsample. The leave-one-out analyses demonstrated that the main results changed only when one country was individually excluded from the models (the association between the stringency index and reporting decreased binge drinking was no longer significant).

Discussion

The current study examined cross-country variation in self-reported changes in students' weekly drinking and binge drinking during the COVID-19 pandemic, and it is among the first studies to examine associations between drinking behaviors and national variations in COVID-19 containment measures. Considerable cross-country variation was observed. In the majority of countries, a decrease in weekly drinking and a substantial decrease in binge drinking were observed during the first wave of the pandemic, which is in line with earlier studies (Bollen et al., 2021; Busse et al., 2021; Jackson et al., 2021; Tavolacci et al., 2021; Tholen et al., 2022; van Hooijdonk et al., 2022). A number of small yet significant associations between containment

Table 2 Adjusted odds ratios (AOR) of multilevel multinomial logistic regression analyses for changes in binge drinking (ref. No change)

	Decrease				Increase			
	AOR	95% CI	ICC	<i>P</i>	AOR	95% CI	ICC	<i>p</i>
Model 1^a								
Containment measures								
Stringency index	1.037	1.002— 1.071	20.4%	0.038	1.033	0.998— 1.069	17.7%	0.066
a. Closings of schools/ universities	1.009	0.992— 1.027	22.6%	0.278	1.006	0.989— 1.024	19.7%	0.510
b. Closings of workplaces	1.016	0.996— 1.036	21.8%	0.129	1.007	0.988— 1.027	19.8%	0.480
c. Cancellations of public events	1.003	0.980— 1.025	23.6%	0.816	0.998	0.976— 1.021	20.2%	0.866
d. Limits on social gatherings	1.000	0.988— 1.013	23.0%	0.943	1.006	0.992— 1.018	19.6%	0.437
e. Stay-at-home requirements	1.005	0.987— 1.023	23.6%	0.597	1.007	0.989— 1.025	19.8%	0.452
Model 2^b								
Containment measures								
Stringency index	1.043	1.004— 1.082	20.6%	0.029	1.028	0.990— 1.068	19.0%	0.154
a. Closings of schools/ universities	1.011	0.992— 1.030	23.4%	0.266	1.003	0.984— 1.023	20.5%	0.746
b. Closings of workplaces	1.020	1.000— 1.042	21.4%	0.054	1.007	0.986— 1.028	20.1%	0.552
c. Cancellations of public events	1.005	0.982— 1.027	25.1%	0.706	0.997	0.975— 1.019	21.1%	0.788
d. Limits on social gatherings	1.011	0.996— 1.027	22.6%	0.151	1.014	1.000— 1.030	17.9%	0.060
e. Stay-at-home requirements	1.001	0.981— 1.022	24.8%	0.902	0.999	0.979— 1.021	20.9%	0.936

Notes: Estimation method: RIGLS (PQL2); AOR and 95% CI calculated from y-standardized coefficients; n country=25; n HEI=117; n students=32,785

a. Controlled for individual-level variables (sex, age, migration background, study field, measurement adherence)

b. Controlled for individual-level variables and countries' macroeconomic (GDP per capita (/10,000)) and epidemiological (timing in relation to the peak of the first COVID-19 wave) conditions

measures and changes in drinking behaviors were observed. No influences from the cancellations of public events were observed.

Containment measures positively associated with changes in weekly drinking were closings of schools (decrease) and limitations on social gatherings (increase), and these associations were quite robust against several alternative specifications. Campus life came to a halt, with many students moving back to the parental home (Aristovnik et al., 2020). Considering that students' social network has been shown to be an important determinant of their alcohol use (O'Donnell et al., 2019), and students' opportunities to meet and socialize with peers were limited, this could explain why students decreased their drinking (Jackson et al., 2021; Tholen et al., 2022). Such an explanation aligns with the availability mechanism, which suggests that lim-

ited possibilities to attend social events and access on-premise consumption sites (Rehm et al., 2020).

On the other hand, students were found to be more likely to report increased weekly drinking in countries with stricter limitations on social gatherings. Since we controlled for measurement adherence in our analyses, it seems improbable that this drinking behavior occurred in social settings common among students. Earlier research demonstrated that facing strict limitations on social gatherings may have acted as a stressor and resulted in maladaptive coping for some students (Bollen et al., 2021; Kilian et al., 2021). Boredom, loneliness, psychological distress, lack of opportunities for leisure activities and sports, and the perception of reduced negative consequences of drinking, have also been found to be drivers of increased alcohol consumption (Acuff et al., 2022; Aresi et al., 2022; Busse et al., 2021; Jackson et al., 2021; Rubio et al., 2023; Tavalacci et al., 2021; Tholen et al., 2022).

As such, the distress mechanism (Rehm et al., 2020) could potentially explain students' increased weekly drinking in countries with stricter limitations on social gatherings. Drinking alcohol to manage psychological distress is especially concerning, as the containment measures have been shown to be negatively associated with students' depressive symptoms (Buffel et al., 2022).

Decreased binge drinking was found to be positively associated with the stringency index. Binge drinking especially has been shown to be associated with enhancement and social motives, peer behavior, and social norms (Acuff et al., 2022; Bollen et al., 2021; Kuntsche et al., 2017), which could explain why students in countries with stricter containment measures were more likely to report decreased binge drinking. Social settings in which binge drinking tends to occur may have been unavailable. An association between (self-reported intensity of) stay-at-home requirements and increased binge drinking (Acuff et al., 2022) was not found in the current study.

The results should be considered with some limitations in mind. Cross-sectional convenience sample data were used in the current study. Although young adults' self-attributions about drinking during the pandemic corresponded closely to longitudinal changes in drinking (Minhas et al., 2021), measurement of drinking behavior at several time points among large representative student samples from multiple countries would enable examinations of causality, reduce self-selection bias, and allow for the incorporation of additional background and control variables. As mentioned, the observed associations were small yet significant, so they should be interpreted with caution. Nevertheless, the current study demonstrated how, and to what extent, containment measures were associated with changes in student drinking. We took into account students' embeddedness in HEIs within countries, and controlled for macroeconomic and epidemiological conditions. Furthermore, the robustness of our analyses was extensively assessed.

Since the current study is unable to provide further insight into possible drivers of increased alcohol consumption, future research is required to better understand why some students increased drinking in countries with stricter containment measures. A stronger evidence base is required to examine the external validity of the results presented in this paper. Since we remain at risk for future global (health) crises (Morens & Fauci, 2020), it is important to consider the potential adverse effects of large-scale containment measures on students' alcohol consumption.

Implications for Prevention

The findings that weekly drinking decreased and binge drinking substantially decreased during the first wave of the pandemic suggest that the implementation of large-scale containment measures may lead to a decline in drinking behaviors among the general student population. Since alcohol consumption has a considerable impact on the burden of disease, this could result in positive health outcomes (Degenhardt et al., 2016).

However, the positive association between increased weekly drinking and limitations on social gatherings is worrisome. Prevention efforts aimed at higher education students should prioritize efforts to curb excessive drinking among potential risk populations, such as young men (Aresi et al., 2022) and people experiencing psychological distress (Tholen et al., 2022). Future research may assist in identifying groups at risk, especially those who did not decrease their weekly drinking after (the first wave of) the pandemic.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10935-024-00807-w>.

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