

Alcohol Use during the COVID-19 Pandemic: Self-Reported Changes and Motives for Change

Jørgen G. Bramness^{a, b} Elin K. Bye^a Inger Synnøve Moan^a Ingeborg Rossow^a

^aDepartment of Drug and Tobacco Research, Norwegian Institute of Public Health, Oslo, Norway; ^bInstitute of Clinical Medicine, UiT – The Arctic University of Norway, Tromsø, Norway

Keywords

Alcohol use · Changes · Pandemic · COVID-19 · Norway

Abstract

Background: In Europe, the COVID-19 pandemic triggered a range of restrictive measures, which may have impacted alcohol consumption. **Objectives:** We explored perceived changes in alcohol consumption, their association with sociodemographic characteristics and past year alcohol consumption, and self-reported reasons for change after COVID-19 restrictions in Norway. **Method:** A web-based survey was sent to Norwegians aged 18 years and older in June–July 2020. Respondents reporting any past year alcohol use ($n = 1,200$) were asked whether they drank less, approximately the same, or more after the COVID-19 restrictions compared to before and reasons for drinking less or more. **Results:** Almost a third (29.9%) reported they drank less, whereas 13.3% reported they drank more. Females, younger respondents, and Oslo residents were more likely to report both less and more drinking (p values between 0.001 and 0.029). Past year alcohol use was associated with less drinking ($OR = 0.93$; $p < 0.001$) and more drinking ($OR = 1.07$; $p < 0.001$). More drinking was also associated with living with child(ren) ($p = 0.023$)

and high educational level ($p = 0.029$). The most frequently reported reasons for drinking less pertained to fewer social occasions and less on-premise drinking, whereas reasons for drinking more pertained to treating oneself to something good and fewer consequences of drinking more. **Conclusions:** After the COVID-19 restrictions were implemented, a substantial proportion of Norwegians changed their drinking behaviour.

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Introduction

In Europe, the COVID-19 pandemic triggered a range of societal measures to curb the disease spread. These measures may have impacted alcohol consumption in different ways: (i) a reduction of alcohol use in the short run, reflecting reduced economic and physical access to alcohol, and (ii) an increase for some groups, due to pandemic-induced distress [1]. Assumptions of similar kinds are suggested for high-risk drug users [2]. Moreover, the pandemic may have resulted in fewer social occasions for drinking or increased consumption following more flexible working hours. This has been the focus in an emerg-

ing literature from European countries [3–6] and elsewhere [7–12].

In Norway, COVID-19 restrictions were implemented from medio March 2020. These included restrictions on social events, travelling, and on-premises' trading hours, all of which could have led to reduced alcohol access and consumption. However, total consumption increased slightly in the second quarter of 2020, compared to 2019 [13], suggesting that reduced access and consumption in some groups were offset by increased consumption in others. While restrictions on travelling and social gathering were uniform across population groups, other measures differed across municipalities and population groups. On-premise alcohol sales were more restricted in the capital (Oslo) than elsewhere, whereas lockdowns of kindergartens and schools affected households with children. Despite generous government compensations [14], many people experienced job loss and reduced income, which may have dampened alcohol use. Many worked from home with more flexible working hours, which may have differed by socioeconomic status. Thus, the various measures may have impacted people's alcohol consumption in different directions and to various extents, depending on sociodemographic characteristics [3, 5, 8, 11, 15].

In the present study, we explored (i) to what extent Norwegian adults perceived a change in their alcohol consumption after the COVID-19 measures were implemented; (ii) whether perceived change in either direction was associated with sociodemographic characteristics and previous alcohol use; and (iii) self-reported reasons for a change in alcohol consumption.

Materials and Methods

Procedure and Respondents

Data stemmed from a population survey sent to 4,844 Norwegians aged 18 years and older in June–July 2020, randomly selected from a national web panel. A total of 1,328 (27.4%) completed the questionnaire. Only those who reported any alcohol use during the past 12 months ($n = 1,200$, unweighted data) were asked about perceived change in alcohol consumption. Of these, 48% were male, and the average age was 47.9 years ($SD = 17.9$).

Measures

Change in alcohol use was assessed by asking respondents whether they, compared to previously, drank much less, less, approximately the same, more, or much more after the COVID-19 measures were implemented. The responses were collapsed into “less,” “approximately the same” (i.e., “no change”), and “more.” Respondents who stated that they were drinking less or were drinking more were asked about reasons for this and could tick off 1 or several of 9 or 8 stated reasons, respectively.

Sociodemographic characteristics included gender; age; living with child(ren) under 18 years (“yes”/“no”); education at university level (“yes”/“no”); household income level “low” (below 47,000 EUR/year), “medium” (47,000–94,000 EUR/year), or “high” (94,000 EUR or above/year); area of dwelling (“Oslo”/“elsewhere”); and in paid work (“yes”/“no”). Past year alcohol consumption (number of alcohol units/week) was calculated from the first 2 items of the Alcohol Use Disorder Identification Test for Consumption (AUDIT-C) [16].

Statistical Analyses

The analyses were explorative, and the study was not pre-registered. Bivariate associations were analysed in cross-tabulations using Pearson's χ^2 test and ANOVA and in multinomial logistic regressions. Change in alcohol use was analysed with “no change” as the reference category. All statistically significant variables ($p < 0.05$) from the latter analyses were entered in a multivariate multinomial logistic regression. The analyses were conducted in SPSS version 26.

Results

About half of the respondents (56.8%) reported no change in drinking after implementation of the COVID-19 measures, 29.9% reported less drinking, and 13.3% reported more drinking. This distribution varied significantly with gender, age, education level, area of dwelling, and past year alcohol consumption (Table 1). In comparison with no change, less drinking and more drinking were both more pronounced among women ($OR = 1.58$, $p = 0.002$, and $OR = 1.55$, $p = 0.027$, respectively), in the younger age group ($OR = 2.68$, $p < 0.001$, and $OR = 3.46$, $p < 0.001$, respectively), and among Oslo residents ($OR = 1.59$, $p = 0.013$, and $OR = 1.75$, $p = 0.015$, respectively). Past year alcohol consumption was associated with less drinking ($p < 0.001$) and with more drinking ($p < 0.001$). More drinking was also associated with living in a household with child(ren) ($p = 0.023$) and with a high educational level ($p = 0.029$). This pattern remained in the multivariate analysis (Table 1).

Among those who drank less, “fewer parties and less together with friends” was the most frequently stated reason (65%) (Table 2), particularly among the youngest (82%) and those living in Oslo (77%) (results not displayed). “Less frequent visits to restaurants, cafes, pubs, and bars” was another frequently stated reason (50%) and more so by Oslo residents (62%). Among those who drank more, the most frequently given reasons were “the need to treat myself with something good” (45%) and “fewer consequences of drinking more” (38%). A sensitivity analysis investigating those reporting only 1 reason revealed no marked discrepancies in endorsement.

Table 1. Self-reported alcohol use (less drinking, no change, and more drinking) during the COVID-19 pandemic by sociodemographic groups and previous drinking behaviour, bivariate distributions, and multinomial logistic regression unadjusted and adjusted

	Bivariate distributions				Reference category: no change			
					Multinomial ^a (unadjusted)		Multinomial ^a (adjusted)	
	less drinking 359 (29.9%)	no change 682 (56.8%)	more drinking 159 (13.3%)	test statistic (<i>p</i> < 0.001)	less drinking OR (95% CI)	more drinking OR (95% CI)	less drinking OR (95% CI)	more drinking OR (95% CI)
Gender								
Women (<i>n</i> = 628)	36.8%	48.6%	14.6%	$\chi^2 = 38.6$ (<i>p</i> < 0.001)	2.23 (1.71–2.90) Ref (OR = 1)	1.70 (1.20–2.41) Ref (OR = 1)	1.58 (1.19–2.10) Ref (OR = 1)	1.55 (1.05–2.29) Ref (OR = 1)
Men (<i>n</i> = 572)	22.4%	65.9%	11.7%					
Age group								
18–34 (<i>n</i> = 349)	42.1%	39.8%	18.1%	$\chi^2 = 69.9$ (<i>p</i> < 0.001)	3.58 (2.53–5.07) Ref (OR = 1)	3.71 (2.31–5.98) Ref (OR = 1)	2.68 (1.85–3.88) Ref (OR = 1)	3.46 (2.06–5.83) Ref (OR = 1)
35–59 (<i>n</i> = 491)	27.9%	58.9%	13.2%		1.61 (1.16–2.23) Ref (OR = 1)	1.84 (1.16–2.92) Ref (OR = 1)	1.35 (0.93–1.95) Ref (OR = 1)	1.55 (0.92–2.64) Ref (OR = 1)
60+ (<i>n</i> = 360)	20.8%	70.6%	8.6%					
Household								
With children under 18 (<i>n</i> = 887)	31.6%	52.3%	16.1%	$\chi^2 = 4.7$ (<i>p</i> = 0.096)	1.21 (0.90–1.63) Ref (OR = 1)	1.48 (1.01–2.17) Ref (OR = 1)	1.11 (0.79–1.55) Ref (OR = 1)	1.68 (1.07–2.62) Ref (OR = 1)
Without children under 18 (<i>n</i> = 304)	29.2%	58.6%	12.2%					
Employment								
No (<i>n</i> = 505)	27.9%	58.6%	13.5%	$\chi^2 = 1.7$ (<i>p</i> = 0.432)	0.84 (0.65–1.09) Ref (OR = 1)	0.97 (0.69–1.38) Ref (OR = 1)		
Yes (<i>n</i> = 695)	31.4%	55.5%	13.1%					
Educational level								
University level (<i>n</i> = 492)	29.0%	55.5%	15.5%	$\chi^2 = 7.9$ (<i>p</i> = 0.019)	0.98 (0.76–1.27) Ref (OR = 1)	1.65 (1.14–2.39) Ref (OR = 1)	1.02 (0.77–1.34) Ref (OR = 1)	1.55 (1.05–2.29) Ref (OR = 1)
Below university level (<i>n</i> = 708)	31.3%	58.7%	10.0%					
Income								
Low (<i>n</i> = 241)	31.1%	55.2%	13.7%	$\chi^2 = 1.8$ (<i>p</i> = 0.767)	1.12 (0.77–1.62) Ref (OR = 1)	0.97 (0.59–1.60) Ref (OR = 1)		
Medium (<i>n</i> = 423)	29.1%	59.1%	11.8%		0.97 (0.70–1.35) Ref (OR = 1)	0.78 (0.51–1.22) Ref (OR = 1)		
High (<i>n</i> = 331)	28.7%	56.8%	14.5%					
Oslo versus other places								
Oslo (<i>n</i> = 201)	34.8%	44.3%	20.9%	$\chi^2 = 19.3$ (<i>p</i> < 0.001)	1.61 (1.15–2.28) Ref (OR = 1)	2.39 (1.58–3.63) Ref (OR = 1)	1.59 (1.10–2.29) Ref (OR = 1)	1.75 (1.11–2.74) Ref (OR = 1)
Other places (<i>n</i> = 999)	28.9%	59.4%	11.7%					
Alcohol units/week (SD), <i>n</i>	2.5 (3.6)	3.9 (5.9)	6.8 (7.4)	<i>F</i> = 34.1 (<i>p</i> < 0.001)	0.92 (0.89–0.95) Ref (OR = 1)	1.06 (1.03–1.08) Ref (OR = 1)	0.93 (0.90–0.97) Ref (OR = 1)	1.07 (1.04–1.10) Ref (OR = 1)

^a Bold indicates that the coefficient is significantly different from 1 at *p* < 0.05 and *p* < 0.01.

Table 2. Self-reported reasons for reducing and increasing alcohol use during COVID-19

Reasons for less drinking	N = 359 ^a	N = 129 ^b
I have been to fewer parties and less together with friends	234 (65.2%)	44 (31.8%)
I have visited restaurants, cafes, pubs, and bars less frequently	181 (50.4%)	14 (10.9%)
I have not felt like it	117 (32.6%)	32 (24.8%)
I have travelled less	81 (22.6%)	7 (5.4%)
I want to be as healthy as possible (during the pandemic)	44 (12.3%)	4 (3.1%)
I have spent more time with my children and other family members at home	33 (9.2%)	4 (3.1%)
I have had less alcohol available in the house	22 (6.1%)	4 (3.1%)
I have had less money to spend	14 (3.9%)	1 (0.8%)
Other reasons for reducing	39 (10.9%)	22 (17.1%)
Reasons for more drinking	N = 159 ^a	N = 69 ^a
I have more need to treat myself with something good	71 (44.7%)	21 (30.4%)
There are fewer consequences of drinking more (e.g., fewer consequences the next day, less need to drive a car)	60 (37.7%)	12 (17.4%)
I have had a more flexible job situation (e.g., home office or flexible working hours)	45 (28.3%)	6 (8.7%)
I have worked less or stopped working	28 (17.6%)	2 (2.9%)
I have wanted to alleviate the stress or worries associated with the pandemic	27 (17.0%)	4 (5.8%)
I have been more alone (had more time on my own)	27 (17.0%)	3 (4.3%)
I have more often been to parties or with friends	18 (11.3%)	4 (5.8%)
Other reasons for increasing	30 (18.9%)	17 (24.6%)

^a All reasons given, as multiple reason could be given by the respondents. ^b Response rate among those citing 1 single reason for their change in behaviour.

Discussion

This study of self-reported changes in alcohol consumption in the first wave of COVID-19 measures in Norway provides further insight into sociodemographic and drinking behaviour characteristics of such changes as well as self-reported reasons for change. A substantial proportion of respondents reported a change in alcohol use, and less drinking was more often reported than more drinking. Other studies have also found that a substantial proportion of respondents changed their alcohol use during the pandemic as compared to previously [3–7, 9, 10]. Notably, the overall direction of change varied across these studies and so did sampling methods, population representativeness, and measurements. Moreover, timing of data collection and differences in extent of lockdowns or restrictive measures between countries or jurisdictions are also important when interpreting similarities and differences across studies in overall direction of change and demographic characteristics of change.

In line with other studies, we found the proportion reporting less drinking was larger than those reporting

more drinking [3, 5]. This finding does, however, not necessarily indicate an overall reduction in alcohol consumption in the short run, as previously hypothesized [1]. Less drinking occurred among those with a low past year consumption and more drinking among those with high past year consumption. It is therefore possible that the amount of increased drinking in the smaller group who drank more offset the decrease in the larger group who drank less. Thus, our findings may well be compatible with the slight increase in overall alcohol consumption found in Norway [13] after the COVID-19 measures were implemented.

While increased psychological distress has been identified as an important motive for increased consumption under previous crises [1] and during COVID-19 [14], our study showed that “the need to treat myself with something good” and “fewer consequences of drinking more” were more frequently reported. One possible explanation for these contrasting findings is that the current study was conducted shortly after the COVID-19 measures were implemented. At this time point, the pandemic was under control, and the measures were less intrusive than in many other countries, possibly explaining

why distress was a less important motive for increased consumption.

Limitations of the current study include underreporting and selection biases in survey research on substance use [17], a phenomenon more pronounced among heavy drinkers. The sample consisted of respondents who reported any alcohol use during the past 12 months. Thus, we were not able to examine whether individuals who previously were abstinent started drinking as a response to the COVID-19 measures. Furthermore, other sociodemographic characteristics may affect changes in alcohol use than those included in this study, for example, changes in the job situation and income. Lastly, while this study identified some reasons for changes in alcohol use during COVID-19, a number of unstated other reasons could be important [6], even though relatively few ticked off for “other reasons.”

Although the total alcohol consumption in Norway increased slightly in the first 3 months after the COVID-19 restrictions were implemented, the current study demonstrates that beneath this small overall change, there was a substantial dynamic in consumption changes across sociodemographic strata and consumer groups. The observed decrease among low-level consumers and increase among high-level consumers may suggest that (i) the dispersion of consumption increased despite little change in total consumption and (ii) the consumer groups did not change collectively. Further research, applying a longitudinal design, is needed to validate these important aspects of alcohol consumption dynamics.

References

- 1 Rehm J, Kilian C, Ferreira-Borges C, Jernigan D, Monteiro M, Parry CDH, et al. Alcohol use in times of the COVID 19: Implications for monitoring and policy. *Drug Alcohol Rev.* 2020;39(4):301–4.
- 2 Costa Storti C, Bretteville-Jensen AL, De Grauwe P, Moeller K, Mounteney J, Stevens A. The double effect of COVID-19 confinement measures and economic recession on high-risk drug users and drug services. *Eur Addict Res.* 2021:1–3.
- 3 Panagiotidis P, Rantis K, Holeva V, Parlapani E, Diakogiannis I. Changes in alcohol use habits in the general population, during the COVID-19 lockdown in Greece. *Alcohol Alcohol.* 2020;55(6):702–4.
- 4 Chodkiewicz J, Talarowska M, Miniszewska J, Nawrocka N, Bilinski P. Alcohol consumption reported during the COVID-19 pandemic: the initial stage. *Int J Environ Res Public Health.* 2020;17(13):4677.
- 5 Manthey J, Kilian C, Schomerus G, Kraus L, Rehm J, Schulte B. Alkoholkonsum in Deutschland und Europa während der SARS-CoV-2 Pandemie. *Sucht.* 2020;66(5):247–58.
- 6 Vanderbruggen N, Matthys F, Van Laere S, Zeeuws D, Santermans L, Van den Aemele S, et al. Self-reported alcohol, tobacco, and cannabis use during COVID-19 lockdown measures: results from a web-based survey. *Eur Addict Res.* 2020;26(6):309–15.
- 7 Ritter A, Wilkinson C, Vuong T, Kowalski M, Barrett L, Mellor R, et al. *Distilling our changing relationship with alcohol during COVID-19.* Sydney: UNSW Social Policy Research Centre; 2020.
- 8 Callinan S, Mojica-Perez Y, Wright CJC, Livingston M, Kuntsche S, Laslett AM, et al. Purchasing, consumption, demographic and socioeconomic variables associated with shifts in alcohol consumption during the COVID-19 pandemic. *Drug Alcohol Rev.* 2020.
- 9 Callinan S, Smit K, Mojica-Perez Y, D'Aquino S, Moore D, Kuntsche E. Shifts in alcohol consumption during the COVID-19 pandemic: early indications from Australia. *Addiction.* 2020.
- 10 Neill E, Meyer D, Toh WL, van Rheenen TE, Phillipou A, Tan EJ, et al. Alcohol use in Australia during the early days of the COVID-19 pandemic: Initial results from the COLLATE project. *Psychiatry Clin Neurosci.* 2020;74(10):542–49.

Acknowledgement

The authors are grateful to the Norwegian Directorate of Health for providing access to the data.

Statement of Ethics

Data were collected anonymously by the Norstat Norge as part of an opinion poll. Norstat is been certified by DNV-GL (ref. 1555902-2014-AQ-DEN-DANAK) concerning survey design and collection, processing, and reporting of data within market opinion and social research according to ISO standard 9001:2015. Norstat is a member of the ESOMAR corporate.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

This study was supported by the Norwegian Institute of Public Health. The data collection was funded by the Norwegian Directorate of Health.

Author Contributions

All 4 authors were equally involved in designing the original study questions, conceptualizing the aims of the study, and writing all the parts of the manuscript. All 4 authors have partaken in the various rewrites of the first and second draft of the manuscript and have approved the final manuscript in its current form.

- 11 Biddle N, Edwards B, Gray M, Sallis K. [Alcohol consumption during the COVID19 period: May 2020](#). Canberra: Australian National University; 2020.
- 12 Rodriguez LM, Litt DM, Stewart SH. Drinking to cope with the pandemic: the unique associations of COVID-19-related perceived threat and psychological distress to drinking behaviors in American men and women. [Addict Behav](#). 2020;110:106532.
- 13 Statistics Norway. Statistics on alcohol sales. 2020. Available from: <https://www.ssb.no/en/statbank/table/04475/>.
- 14 Government TN. Economic measures in Norway in response to COVID-19. 2020. Available from: <https://www.regjeringen.no/en/aktuelt/economic-measures-in-norway-in-response-to-covid-19/id2694274/> Updated 2020 Mar 20.
- 15 de Goeij MC, Suhrcke M, Toffolutti V, van de Mheen D, Schoenmakers TM, Kunst AE. How economic crises affect alcohol consumption and alcohol-related health problems: a realist systematic review. [Soc Sci Med](#). 2015;131:131–46.
- 16 Higgins-Biddle JC, Babor TF. A review of the alcohol use disorders identification test (AUDIT), AUDIT-C, and USAUDIT for screening in the United States: past issues and future directions. [Am J Drug Alcohol Abuse](#). 2018;44(6):578–86.
- 17 Johnson TP. Sources of error in substance use prevalence surveys. [Int Sch Res Notices](#). 2014;2014:923290.