

# Alcohol and its effect on mental health among adolescents in Austria: Why and when matter, but not how often

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# COI

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# — Austria vs. Australia

- Boards are used with very different intentions
- So is alcohol
- The intentions why to use alcohol make the difference when it comes to mental health outcomes

# Background

- 2 or 3 decades of **declining adolescent alcohol use** across developed countries (ESPAD, HBSC, Monitoring the future). Austria is no different.
- No satisfying monocausal explanation, instead, it may reflect a **broader cultural change** in the position of alcohol among adolescents' life
  - Decline in alcohol as a symptom of **increased freedom** and more diverse life plans and ways to define ones identity (Ball et al., 2024)
  - Decline in alcohol use as a symptom of a change from “Pressure to conform to **pressure to perform**” (Burgess et al., 2022)
- Self-reported mental among adolescent has **significantly deteriorated** (Ravens-Sieberer et al., 2021; Reiß et al. 2024)
- Need to understand nuanced **relationships between alcohol use and mental health.**

# Alcohol and mental health

- alcohol use and mental health issues both **often initiate in adolescence** (Solmi et al., 2022)
- relationship is complex and of **bidirectional nature** and **mixed findings** exist (Pedrelli et al., 2016)
  - higher depression **severity predicts subsequent alcohol use**, but not the other way round (Schleider et al., 2019)
  - only **problem use of alcohol** (including adverse consequences) predicted subsequent depressive disorders, but **not alcohol frequency** (Mason et al., 2008)
  - alcohol use among adolescents was significantly associated with **lower quality of life** (psychological well-being, school environment, and family relationships) **but improved peer relationships** (Frobel et al. 2022).
  - alcohol use predicted later **externalizing and internalizing symptoms**. By contrast, externalizing symptom predicted increased alcohol, whereas **internalizing symptoms predicted reduced alcohol** consumption later in life (Kiri et al., 2025)

# Methods I

## Data source and participants

- ESPAD: variety of indicators on alcohol use and other substance use; increased focus on mental health in 2024 data collection
- Representative sample of ~7,600 Austrian students from **grades 9 and 10** from (14 – 17y) from all types of schools

## Research questions

- How is alcohol consumption related to students' mental health in **comparison to the use of other substances?**
- To what extent are **different indicators of alcohol use** associated with students' mental health outcomes?
- What impact does the average **drinking level among schoolmates** have on individual students' mental health and its association with alcohol use?

# Methods II

## Measures

- Alcohol indicators: Last month alcohol use, frequent alcohol use (6 times or more in the last month), age of onset (first drink, first time intoxicated), drinking for coping
- Other substance use: Last month use of cannabis, cigarettes, e-cigarettes, gaming activity
- Mental health:
  - WHO-5 Wellbeing Index: five items related to positive mood, vitality, and general interest, covering aspects of emotional and functional well-being during the last two weeks.
  - Patient Health Questionnaire-4 (PHQ-4 = an ultra-brief screening tool designed to assess core symptoms of depression and anxiety)

## Analyses

- bivariate analyses stratified by gender: association between various substance use indicators and mental health outcomes
- multivariate logistic regression models

# Sample characteristics

- Males = 50.9 %, mean age = 15.4y
- Significant differences by gender
  - alcohol consumption (**m: 24.4%**; f: 17.4%),
  - cannabis use (**m: 7.9%**; f: 5.3%),
  - gaming (**m: 77.8%**; f: 52.5%).
  - enhanced coping motives (m: 5.9%; **f: 10.1%**),
  - e-cigarettes use (m: 24.9%; **f: 32.4%**),
  - Mental distress according to PHQ-4 (m: 16.5%; **f: 32.4%**)
  - low wellbeing according to the WHO-5 (m: 20.1%, **f: 32.6%**).
- Age effects
  - age differences for alcohol indicators are **less pronounced** than for indicators for nicotine use (cigarettes and e-cigarettes) and cannabis use.
  - Prevalence of mental health problems and reduced wellbeing both **increase with age** according to the WHO-5 and the PHQ-4.

# Bivariate analyses

- **Early onset of drinking and intoxication** are more common among adolescents with indications of poor mental health and wellbeing (both sexes)
- strongest associations with impaired mental health and reduced wellbeing are observed for adolescents who report **enhanced coping motives** for alcohol use (both sexes).
- Overall, association for alcohol indicators are **less pronounced than associations between mental health and other substance use.**
- Gender differences
  - Last-month alcohol use and last-month intoxication is slightly **more common among females** reporting poor mental health and wellbeing.
  - The association between mental health and last-month alcohol use and frequent use is **non-significant for males.**

# Logistic regression I

		PHQ-4		WHO-5	
		Sign.	OR (95 % CI)	Sign.	OR (95 % CI)
Factors	alcohol last month	0.030	<b>0.83 (0.71 - 0.98)</b>	0.008	<b>0.82 (0.71 - 0.95)</b>
	frequent alcohol consumption	0.002	<b>0.73 (0.60 - 0.90)</b>	0.054	0.82 (0.66 - 1.00)
	intoxication last month	0.882	0.99 (0.82 - 1.19)	0.692	0.97 (0.82 - 1.14)
	early alcohol consumption	0.000	<b>1.50 (1.29 - 1.74)</b>	0.000	<b>1.46 (1.25 - 1.70)</b>
	early alcohol intoxication	0.494	1.14 (0.79 - 1.64)	0.778	0.95 (0.65 - 1.38)
	enhenced coping motives	0.000	<b>4.98 (3.88 - 6.39)</b>	0.000	<b>3.92 (3.12 - 4.91)</b>
Covarriates	sex	0.000		0.000	
	age	0.000		0.000	

# Logistic regression I

		PHQ-4		WHO-5	
		Sign.	OR (95 % CI)	Sign.	OR (95 % CI)
Factors	alcohol last month	0.528	0.74 (0.50 - 1.11)	0.118	0.79 (0.54 - 1.17)
	frequent alcohol consumption	0.023	0.81 (0.58 - 1.13)	0.896	0.78 (0.58 - 1.05)
	early alcohol consumption	0.000	<b>1.56 (1.34 - 1.81)</b>	<b>0.000</b>	<b>1.45 (1.26 - 1.67)</b>
	enhanced coping motives	0.000	<b>4.84 (3.84 - 6.11)</b>	<b>0.000</b>	<b>3.73 (3.02 - 4.62)</b>
	School drinking levels	0.196	1.24 (0.49 - 3.12) 0.91 (0.36 - 2.29)	0.186	0.45 (0.17 - 1.23) 0.40 (0.15 - 1.10)
Interaction	School drinking levels* alcohol last month	0.233		0.341	
	School drinking levels* alcohol last month	0.562		0.829	
Covarriates	sex	0.000		0.000	
	age	0.000		0.000	

# — Limitations

- Study **design**
  - cross-sectional design: inherently constrained in their capacity to support causal inferences.
  - Self reported data and possibility of over- and underreporting
- Narrow focus solely on the association between **alcohol and current mental health issues**. Different associations will exist for alcohol related outcomes (e. g. accidents or problematic drinking patterns in adulthood).
- the strong association between coping motives and impaired mental health can be criticized for **circular reasoning** (coping presupposes that problems exist).
- Still, the combination of impaired mental health issues and drinking alcohol for coping may constitute a **specific subgroup of adolescents** different to those showing mental health issues only.
- low correlation between alcohol use and mental health outcomes warrants future research, e.g. using cross-country designs to assess whether this result is **consistent across or specific to drinking cultures**.

# Conclusions

- Our results highlight **importance of drinking motives** to identify forms of alcohol use tied to emotional difficulties.
- mental health risks related to alcohol are not uniformly distributed but **concentrated among a subgroup of young people** starting very early and showing strong coping motives
- These adolescents require **targeted prevention strategies** that go beyond substance-specific interventions and address **broader psychosocial and emotional needs**.
- **Why adolescents drink matters more than how often they do:** public health responses should prioritize the identification of high-risk motives and early drinking experiences as leverage points for supporting adolescent mental well-being.

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