RĪGA STRADIŅŠ UNIVERSITY

Association between heavy episodic drinking and medication use among the Latvian population

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Introduction

- Heavy episodic drinking – consumption of **at least 60 grams of pure alcohol on one occasion**, or more frequently, **within the last month** (WHO, 2018)
- Worldwide, **17%** of people engage in heavy episodic drinking monthly (WHO, 2024)
- **Heavy episodic drinking increases the odds of using analgesics** (Bonnesen et al., 2023; Hargreave et al., 2010)**, sedatives** (Penttala et al., 2023) **and antidepressants** (Chavarria et al., 2021), however, the association significantly **varies between countries and sex**

Study aim

To analyse the moderating role of sex in the association between heavy episodic drinking and medication use in the Latvian population aged 15 to 74 years

Objectives

1. To estimate the prevalence of heavy episodic drinking based on demographic factors
2. To estimate the prevalence of medication use (analgesics, sedatives and antidepressants) in relation to demographic factors and heavy episodic drinking
3. To analyse the association between heavy episodic drinking and medication use (analgesics, sedatives and antidepressants), examining the interaction with sex

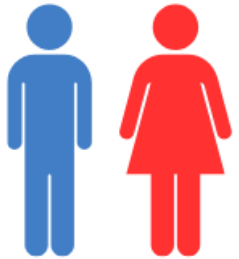
Methodology

Data Source: Latvian Adult Population Health Behaviour Study, 2022 (Center of Disease Prevention and Control)

Study Sample: 2835 residents aged 15 to 74 who have engaged in heavy episodic drinking at least once in the last month or have never engaged in heavy episodic drinking in the last year

Characteristics of the study sample:

Men (n=1225, 43,2%)



Women (n=1610, 56,8%)

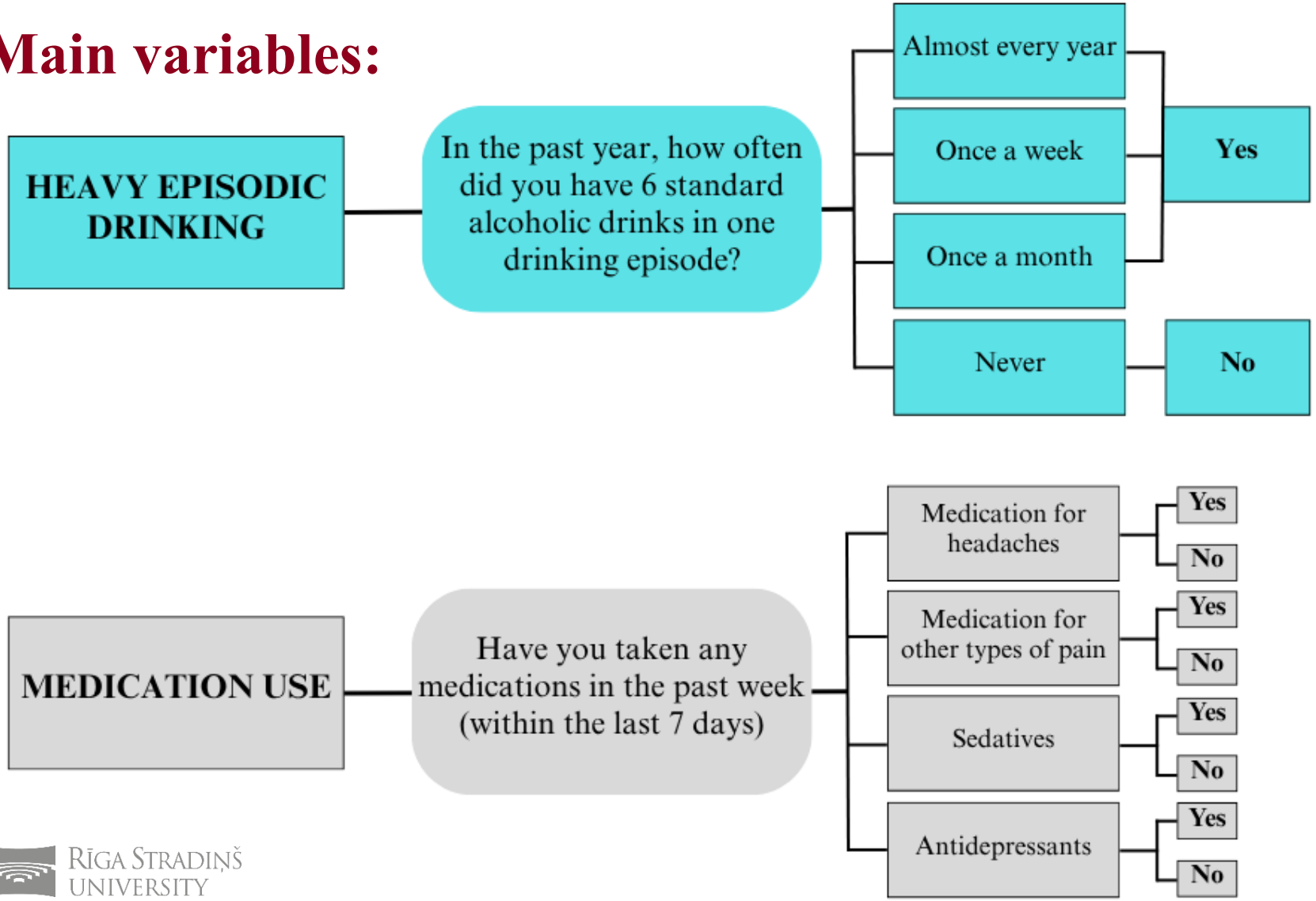
15–34 years (n=784, 27,7%)

35–54 years (n=1018, 35,9%)

55–74 years (n=1033, 36,4%)

Methodology (II)

Main variables:

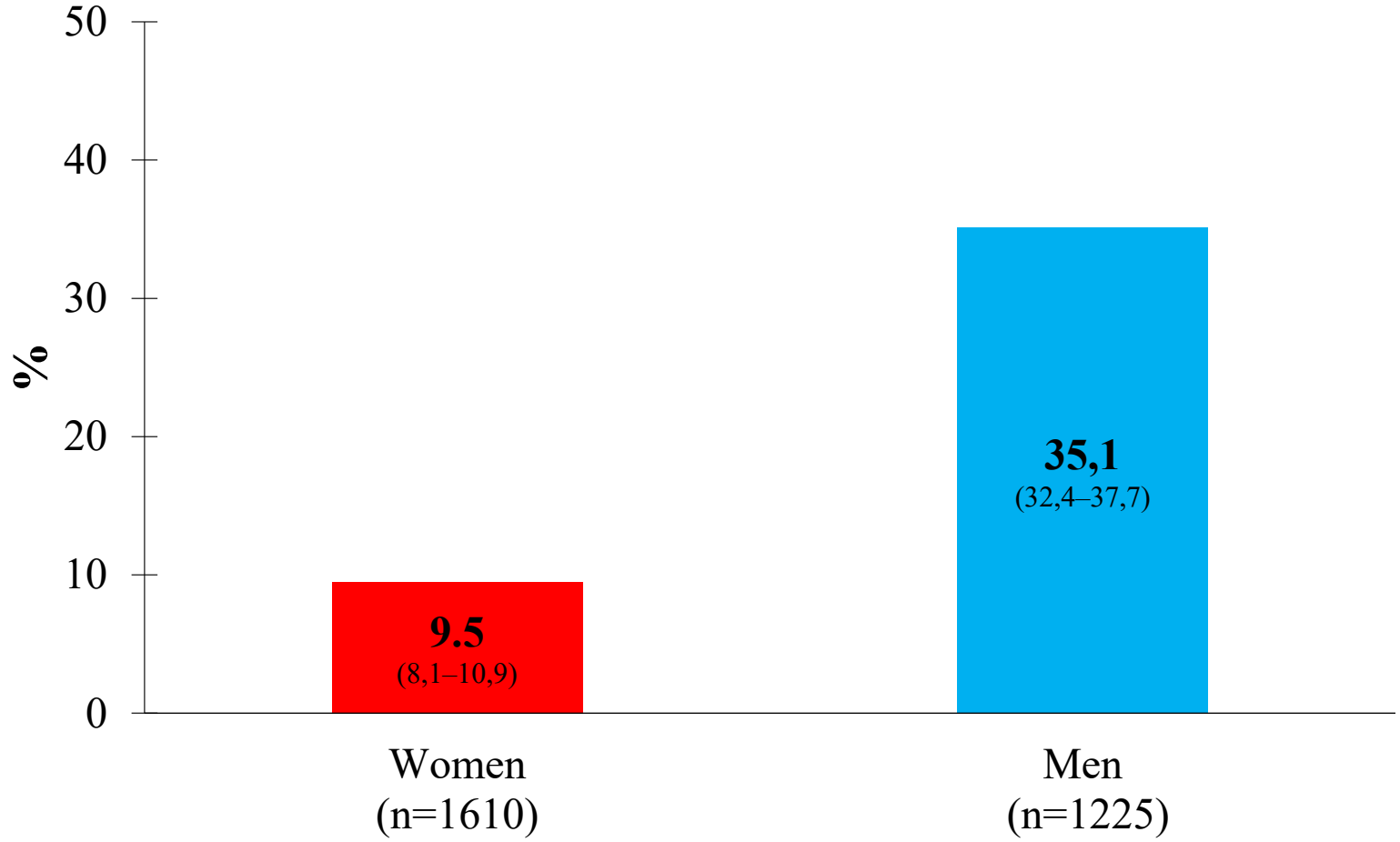


Methodology (III)

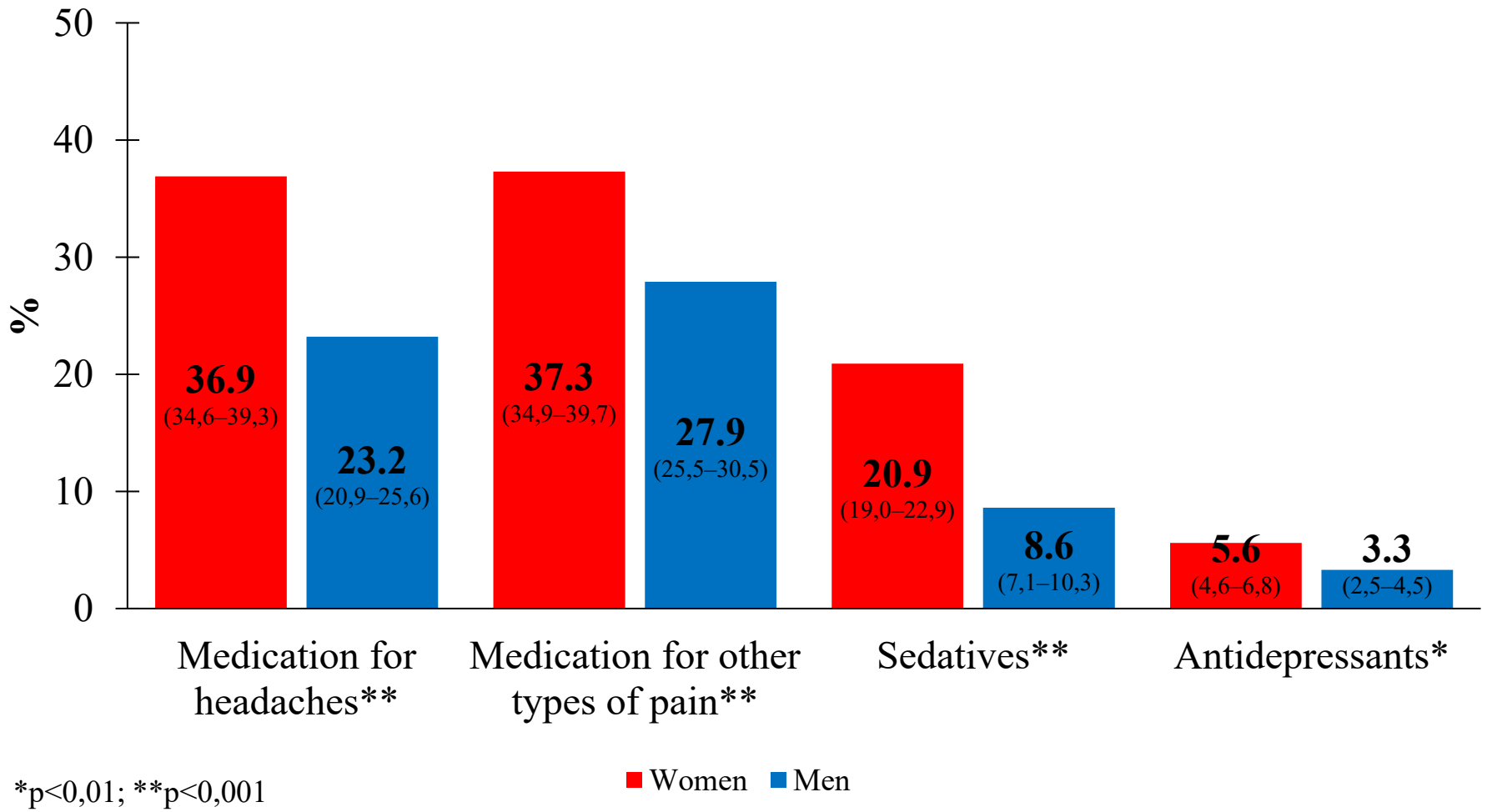
Statistical analysis:

- Descriptive statistics
- Univariate and Multivariate Logistic Regression Models
- Testing the interaction between sex and heavy episodic drinking (Model 3)
- IBM SPSS Statistics (version 29), Microsoft Office Excel

Prevalence of heavy episodic drinking in relation to sex (p<0,001)



Prevalence of medication use in relation to sex



*p<0,01; **p<0,001

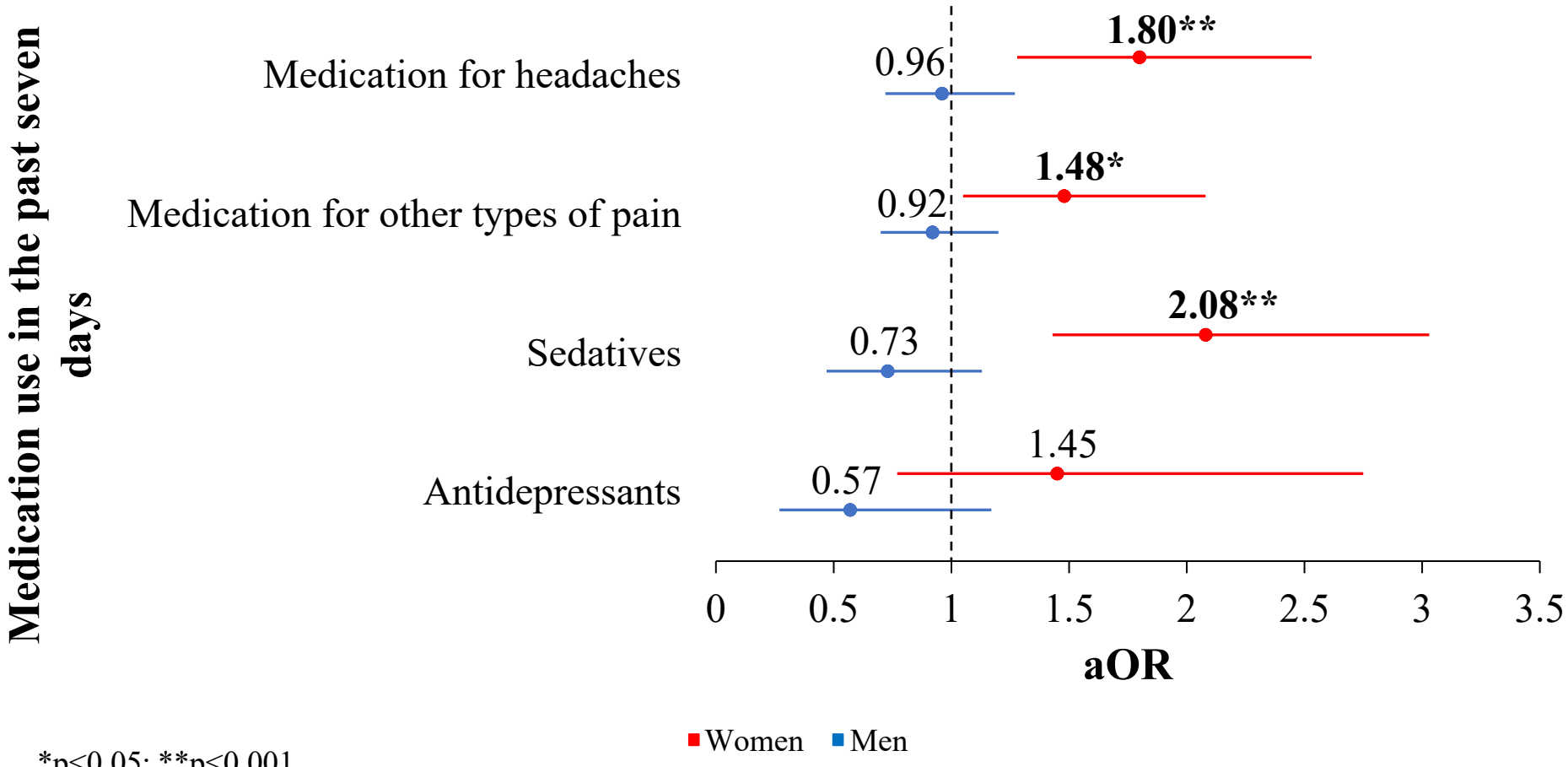
Example: Odds of medication use for headaches in demographic factors and heavy episodic drinking groups

Variable	Model 1		Model 2		Model 3	
	OR (95% CI)	p	aOR (95% CI)	p	aOR (95% CI)	p
Sex						
Man	Ref.		Ref.		Ref.	
Woman	1,93 (1,64–2,30)	<0,001	2,04 (1,71–2,44)	<0,001	1,78 (1,46–2,17)	<0,001
Age group						
15–34	Ref.	–	Ref.	–	Ref.	–
35–54	1,42 (1,15–1,74)	<0,001	1,36 (1,10–1,67)	0,004	1,35 (1,09–1,66)	0,005
55–74	1,30 (1,06–1,59)	0,01	1,22 (0,99–1,50)	0,06	1,23 (1,00–1,52)	0,05
Heavy episodic drinking						
No	Ref.	–	Ref.	–	Ref.	–
Yes	**0,96** (0,79–1,17)	0,69	**1,25** (1,01–1,54)	0,05	**0,96** (0,72–1,27)	0,76
Heavy episodic drinking × sex						
No × men	–	–	–	–	Ref.	–
Yes × women	–	–	–	–	**1,93** (1,25–2,98)	0,003

Ref. – reference category;
Model 1 – unadjusted odds ratios;
Model 2 – adjusted odds ratios for age, sex, and heavy episodic drinking;
Model 3 – additionally adjusted for the interaction between heavy episodic drinking and sex.

Testing the **interaction effect between sex and heavy episodic drinking** on medication use for headaches

A sex-stratified analysis of the age-adjusted odds of medication use in relation to heavy episodic drinking



*p<0,05; **p<0,001

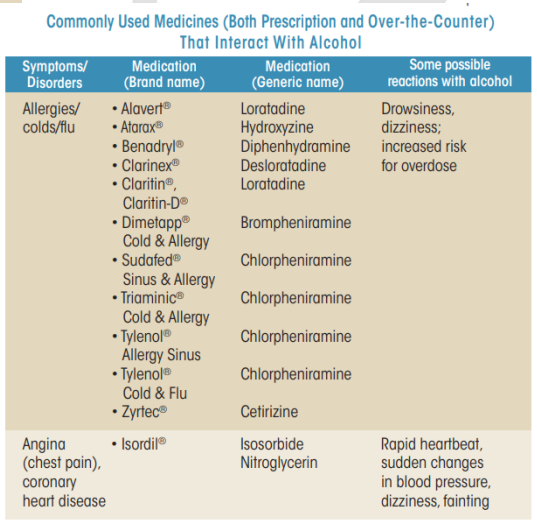
Alcohol-Medication Interactions: Important Areas in the Literature

- Alcohol can influence how medications are metabolized, either **speeding up or slowing their clearance** from the body
- Some medications can also affect **alcohol absorption**, leading to higher blood alcohol concentrations
- Alcohol can **change a medication's effects**, potentially increasing or decreasing its effectiveness

National Institute on Alcohol Abuse and Alcoholism [NIAAA]. n.d. *Alcohol-Medication Interactions: Potentially Dangerous Mixes*. Available from: https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol/alcohol-medication-interactions-potentially-dangerous-mixes. [viewed 02.11.2025.].

Alcohol-Medication Interactions: Important Areas in the Literature (II)

- Mixing alcohol with certain medications can **increase the risk** of negative outcomes such as falls, driving accidents, and even fatal overdoses (NIAAA, 2014)
- **Individuals aged 65 and older** are particularly vulnerable to these risks due to age-related physiological changes and their increased use of medications that may interact with alcohol (Holton et al., 2020)



Commonly Used Medicines (Both Prescription and Over-the-Counter) That Interact With Alcohol

Symptoms/ Disorders	Medication (Brand name)	Medication (Generic name)	Some possible reactions with alcohol
Allergies/ colds/flu	• Alavert® • Atarax® • Benadryl® • Clarinex® • Claritin®, Claritin-D® • Dimetapp® Cold & Allergy • Sudafed® Sinus & Allergy • Triaminic® Cold & Allergy • Tylenol® Allergy Sinus • Tylenol® Cold & Flu • Zyrtec®	Loratadine Hydroxyzine Diphenhydramine Desloratadine Loratadine Brompheniramine Chlorpheniramine Chlorpheniramine Chlorpheniramine Chlorpheniramine Cetirizine	Drowsiness, dizziness; increased risk for overdose
Angina (chest pain), coronary heart disease	• Isordil®	Isosorbide Nitroglycerin	Rapid heartbeat, sudden changes in blood pressure, dizziness, fainting

Holton, A. E., Keeney, C., Ryan, B., & Cousins, G. 2020. Prevalence of potentially serious alcohol-medication interactions in older adults in a community pharmacy setting: a cross-sectional study. *BMJ open.* 10(8), e035212. Available from: https://doi.org/10.1136/bmjopen-2019-035212 [viewed 02.11.2025.].

NIAAA. 2014. *Harmful Interactions. Mixing Alcohol With Medicines. Research-based information on drinking and its impact.* Available from: https://www.niaaa.nih.gov/sites/default/files/publications/NIAAA_Harmful_Interactions_English.pdf [viewed 02.11.2025.].

Conclusions

1. Sex significantly moderates the association between heavy episodic drinking and medication use
2. Further research is needed to explore this complex issue

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Thank you for your attention!

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