

The impact of alcohol on academic performance in university students

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Introduction

Alcohol consumption is common among university students and a large percentage of this group engages in binge drinking (or heavy episode drinking), i.e. consuming 5 or more drinks on one occasion within the last month. This drinking behavior among university students is often considered as part of 'normal' student life. However, early heavy drinking has been related to negative mental health consequences, such as depression, anxiety, addiction and sleeping problems and is thought to affect academic performance. Unfortunately, little is known about the effect of alcohol use and concurrent mental health problems on academic performance so far.

Aims:

- To describe the prevalence of common mental health problems (e.g., anxiety- and depressive symptoms, sleeping problems) among university students.
- To examine the relationship of alcohol use and common mental health problems on academic achievement (Study 1)
- To examine the additional influence of sleep on the abovementioned expected relations (Study 2)

Research question: Do alcohol use and other mental health issues predict study performance and how do these factors interact with each other?

Hypothesized model:

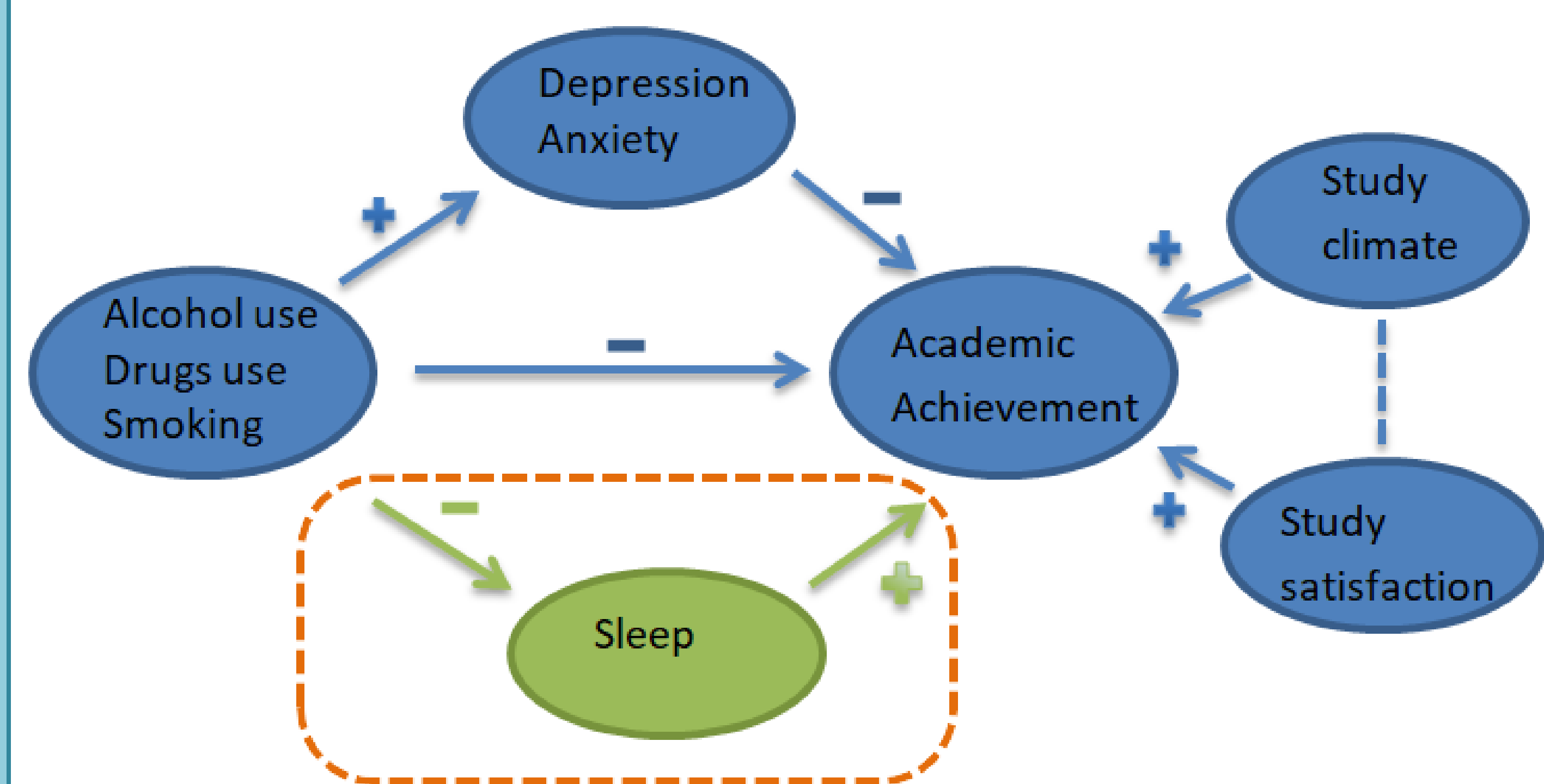


Figure 1. Proposed model of the relationship between substance use, mental health symptoms (depression, anxiety) and academic achievement. Sleep will be added in study 2.

Observed model (Model 2):

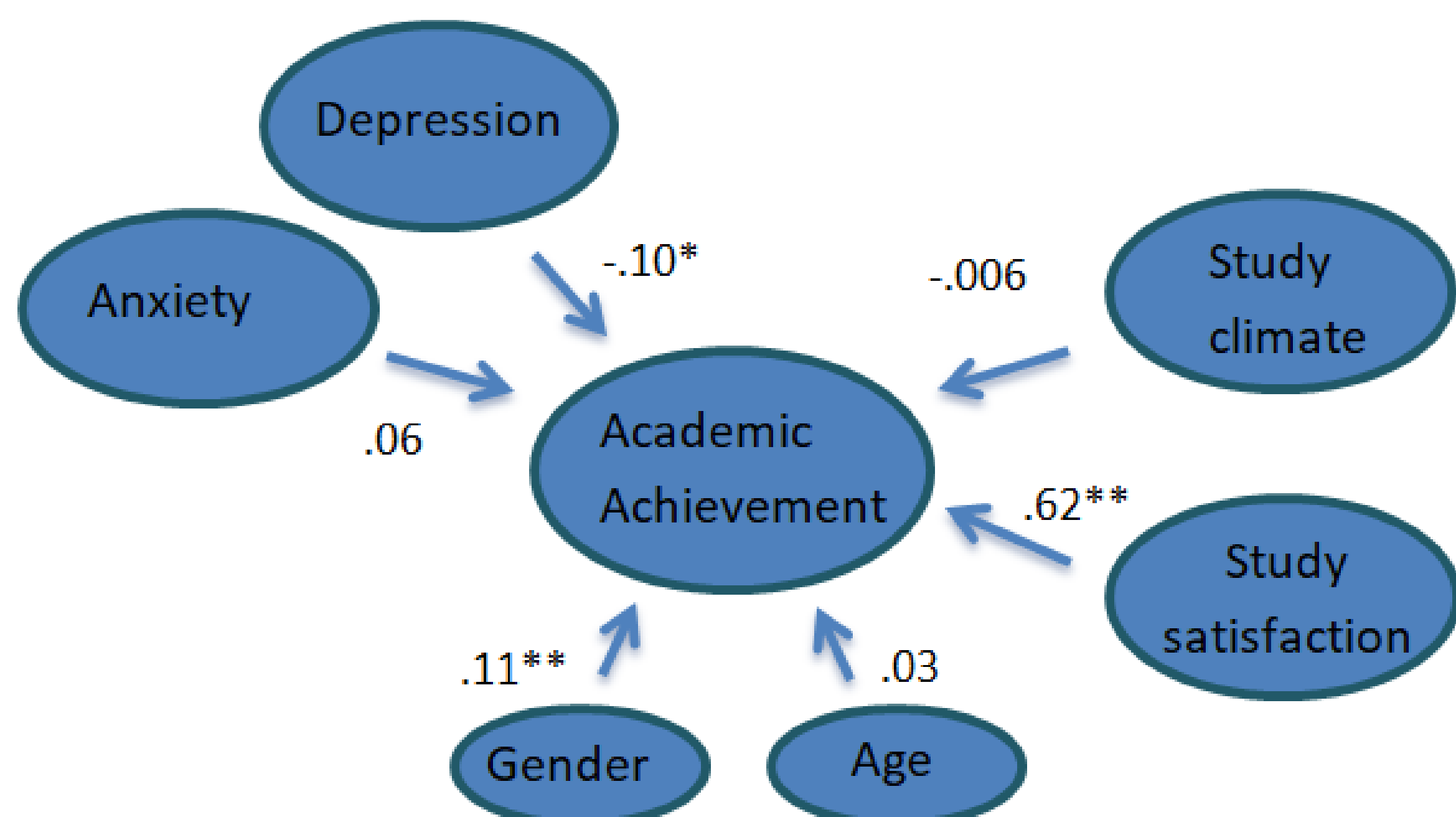


Figure 2. Observed model of effects of depression, study satisfaction and gender on academic achievement ($R^2 = .43$). Age, anxiety, and study climate were no significant predictors. Note: values represent beta coefficients, * $p < .05$, ** $p < .001$

Methods

Participants:

- 3605 university students
- Aged between 17 and 25

Materials:

An online questionnaire measuring :

- **Study-related aspects:**
 - Study satisfaction
 - Study climate
 - Subjective academic performance, e.g. study pace
 - Objective academic performance, e.g. mean grade
- **Mental Health symptoms:**
 - Alcohol use (AUDIT)
 - Drug use (DAST-10)
 - Smoking (CSD)
 - Depressive symptoms (K-10)
 - Anxiety (EK-10)

Variable	n	%
Gender		
male	1170	32.5%
female	2435	67.5%
Age, M(SD)	21.4 (1.96)	
Language		
Dutch	3143	87.2%
English	462	12.8%
Study phase		
Bachelor	3464	(90.4%)
Master	364	(9.5%)
PhD	2	0.1%
I use alcohol	3151	87.4%
I smoke	1286	35.7%
I use drugs	1049	29.1%

Table 1. Demographic characteristics (n = 3605)

Procedure:

- Data was collected between March 2015 and January 2017
- Students from various study programs at a Dutch university were invited to complete an online questionnaire
- Data was analyzed using an hierarchical regression analysis

Preliminary Results (Study 1)

Correlations:

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Depression	13.60	5.12									
2. Anxiety	7.27	2.85	.66**								
3. Alcohol use	7.74	4.90	-.002	-.02							
4. Mean grade	7.05	0.76	-.18**	-.09**	-.11**						
5. Study pace self	6.71	1.60	-.32**	-.22**	-.08**	.43**					
6. Study pace others	7.16	1.36	-.20**	-.12**	-.12**	.48**	.79**				
7. Study climate	6.94	0.92	-.21**	-.16**	-.05**	.23**	.17**	.18**			
8. Study satisfaction	22.54	3.86	-.37**	-.27**	-.10**	.47**	.62**	.52**	.33**		
9. Drug use	4.12	4.05	.22**	.21**	.27**	-.09**	-.15**	-.15**	-.16**	-.17**	
10. Smoking	8.67	4.69	.13**	.12**	.10**	-.08**	-.07**	-.06*	-.09**	-.03	.24**

Table 2. Product moment correlations. Note: * $p < .05$, ** $p < .01$

Hierarchical regression analyses:

- Academic achievement: combined score of mean grade + study pace self + study pace others
- Predictors: gender, age (model 1); depression, anxiety, study satisfaction, study climate (model 2); alcohol use, drug use, smoking (model 3); alcohol use*depression, alcohol use*depression (model 4)
- **Model 2** showed best fit ($F(6, 729) = 91.79, p < .001$), including gender, age, (n.s.) depression, anxiety (n.s.), study satisfaction and study climate (n.s.)
- **No significant effect of alcohol use** on academic achievement above and beyond effects of gender, age, depression and study satisfaction
- No significant interaction effect between alcohol use and depression or anxiety on academic achievement

Conclusions:

- An effect of depressive symptoms on academic achievement was found, but there was no evidence for an effect of alcohol.
- Future models need to be controlled for gender

Further analyses:

- More advanced modelling
- Include effects of sleep (study 2)

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