The mental well-being of university students in the Netherlands

The fifth measurement by the Caring Universities consortium

SUMMARY
Between November 2023 and March 2024, Caring Universities (CU) sent an online questionnaire about psychological problems to 252,242 students from five research universities and two universities of applied sciences (Vrije Universiteit Amsterdam, Leiden University, Utrecht University, Maastricht University, University of Amsterdam, Rotterdam university of applied sciences and the Erasmus University Rotterdam). A total of 9,452 (3.75%) responses have now been received and we can provide an indication of the problems students experience in the areas of mood, anxiety and stress. Our results indicate that a large group of students still seems to be struggling with mental problems. Moreover, we see a relatively high degree of loneliness, perfectionism and low self-esteem among our students. These numbers have increased considerably from last year's measure. In addition, psychological complaints are different between demographic groups. For example, female students, non cis-gendered students, bachelor students and international students have more psychological complaints (regarding depression, anxiety, stress and insomnia) compared to male, master level and Dutch students respectively. A limitation of this survey is the measurement based on self-report. The conclusions should therefore be interpreted carefully. Nevertheless, this survey is a crucial tool for early detection, intervention and support aimed at protecting the mental health of the students.

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Introduction

College years are widely recognized as a challenging period during a vulnerable stage of development, marked by various stressors[1-3]. Consequently, there have been high concerns regarding the mental well-being of college students[24]. Psychological issues such as depression, anxiety, and stress affect approximately one in three students globally [4]. The transition to higher education, coupled with academic pressures and social challenges, often exacerbates symptoms of these mood disorders, likely leading to poor academic performance and compromised well-being. Moreover, students may contend with psychosocial challenges such as procrastination, perfectionism, low self-esteem, loneliness, and addictions, which can worsen existing psychological difficulties. The pervasive nature of procrastination and perfectionism contribute to heightened stress levels and hinder effective coping[25-26]. Recent studies have shed light on the significant prevalence of loneliness and social isolation among college students, despite their seemingly connected social environments[27-28]. Transitioning to college life, coupled with challenges in forming meaningful social connections, may contribute to feelings of loneliness and alienation. Finally, other factors like inadequate sleep and excessive alcohol/drug use negatively affects cognitive functioning, mood regulation, and overall health issues and increases the risk of academic underachievement and alcohol-related harm[29-32]. College and university environments have long been recognized as pivotal settings for young adults' personal and intellectual growth. These environments can be excellent settings to detect students at risk of mental disorders and to offer interventions to prevent symptoms of common mental disorders or treat them early. Therefore, colleges and universities continue to work on initiatives to support students in need.

Unfortunately several barriers still exist that prevent many students from seeking help for their psychological problems, necessitating assistance to access available treatments.[14-16]. Commonly reported barriers include underestimation of the problem, fear of stigma, perceived lack of time, limited financial resources, preference for self-management, and inadequate awareness of available resources[17-19]. In response to these challenges, the Caring Universities project, involving several Dutch universities and universities of applied sciences, collaborates to understand, prevent, and effectively reduce psychological and psychosocial problems among students. Through an annual questionnaire survey, the project screens students with an intention to identify individuals with psychological and psychosocial symptoms that may warrant follow up care, even among students not actively seeking help.

Additionally, the project develops and offers low intensity, evidence-based guided online interventions designed to address these issues swiftly, anonymously, and flexibly, thereby overcoming existing barriers to treatment. Given the preference for technology-assisted approaches among younger, higher-educated, employed, and urban residents[5], university students are particularly poised to benefit from online screening and low-intensity e-health interventions. These efforts are conducted in collaboration with the WHO World Mental Health International College Student (WMH-ICS) Initiative[20], ensuring that the interventions are scientifically grounded.

The survey

The survey is designed to research the psychological and psychosocial problems of students in a structured and scientifically sound manner at an international level. Based on students' feedback over the last surveys, the latest 2023 survey was shortened to encourage more participation, improve response quality and reduce response burden. The procedure is as follows: all students from the participating institutions receive a link via their student email to an online questionnaire that measures the most important psychological and psychosocial problems (including depression, anxiety, alcohol and other substance use problems). The survey is not intended to diagnose mental disorders such as major depressive disorder, but rather to assess symptoms that characterize these disorders such as a low mood and loss of interest, as well as other relevant characteristics (such as personality, daily functioning, academic functioning, etc.). In addition, the survey covers questions regarding perceptions of self and perceived well-being that may highlight possible psychosocial problems of the students. The results of the survey offer all participating institutions information about and insight into the mental health status of their students on an aggregated level. Filling in the questionnaire takes approximately 15 minutes.

At the start of the project, between March 2018 and September 2019, the survey was filled out by 2.507 students from the Vrije Universiteit Amsterdam and the University of Amsterdam. In June 2020 we carried out the first measurement in the current Caring Universities consortium, in which more than eight thousand students took part. On November 6, 2020, we published the results of this measurement on our website[8]. In January 2021 and November 2021, we repeated this measurement among more than twenty-two thousand

students in total. The results of these studies indicate that mental complaints are common among students in the Netherlands, which have become worse during the lockdowns of January 2021 and November 2021. During November 2022 the fourth CU measurement was gathered from students of 7 universities/colleges in the Netherlands. The results indicated that the percentage of students with mood complaints had remained stable compared to the previous surveys, with some groups of students (such as females and international students) having more psychological complaints than others. The current report is of the fifth CU measurement summarizing data that has been collected/gathered from November 2023, from Vrije Universiteit Amsterdam, Leiden University, Utrecht University, Maastricht University, the Erasmus University Rotterdam, InHolland University of Applied Sciences, University of Amsterdam, Rotterdam university of applied sciences and Avans university of applied sciences.

Results

In November 2023, the survey was sent to 252,242 students, see Table 1 for details. These students were approached by the Vrije Universiteit Amsterdam (n = 41,822), Leiden University (n = 38,000), Utrecht University (n = 39,568), Maastricht University (n = 22,455), Erasmus University Rotterdam (n = 37,000), University of Amsterdam (n = 50,810), and Rotterdam university of applied sciences (39,063). Of these students, 9,452 (3.5%) gave consent to participate in the survey and completed the questionnaire from start to finish: VU Amsterdam (n = 630; 1.5%), Leiden University (n = 1,780; 4.6%), Utrecht University (n = 2,116; 5.4%), Maastricht University (n = 1,585; 7.1%), Erasmus University Rotterdam (n = 878; 2.3%), University of Amsterdam (n= 1,412; 2.8%) and Rotterdam university of applied sciences (n=1,030; 2.6%).

On average, the students were 22 years old (SD=3.6), mainly female (70%) and of Dutch origin (63.1%). A majority (67.8%) were bachelor students and 59.1% reported being single. Additionally, 5.2% of students indicated that their gender identity does not align with their sex assigned at birth. For more details, see Table 2.

Feelings of loneliness, are often reported (35%) and for some students these feelings are very severe (6.9%). High levels of study stress are reported among 39.8% of the students with 68% feeling like they needed psychological support in the past 12 months. Finally, 5% of the students indicated that they currently use prescribed medication for mental health

concerns, 9.3% are undergoing psychotherapy and 4.6% are using both medication and psychotherapy for mental health concerns. For more details, see Table 3.

Alcohol consumption measured on the AUDIT-C indicated that 32% of the male student population (n = 900) and 27% of the female student population (n=1,815) met the cut-off for hazardous alcohol consumption[21]. While most of the participants indicated that they had not consumed any other substances over the last 30 days (75%), cigarettes and marijuana were the most frequently used substances by those who did. See figures 1 and 2.

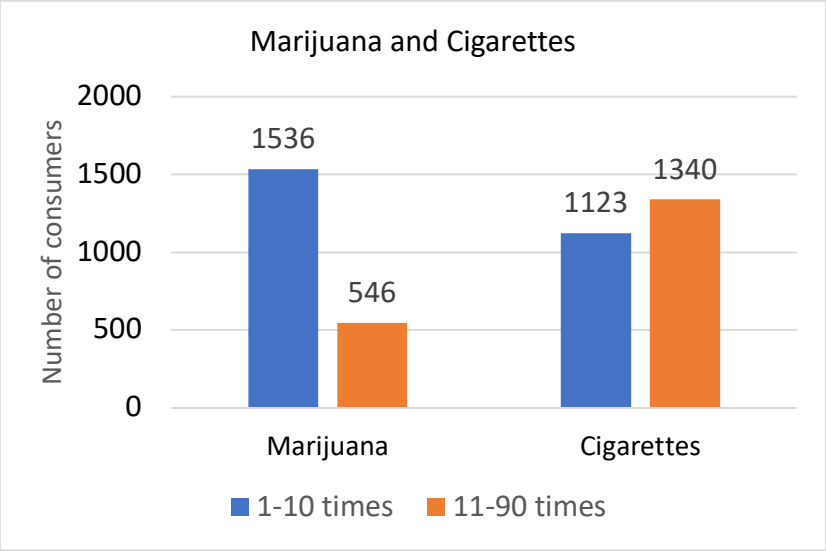

Figure1. The frequency of marijuana and cigarette consumption over the past 30 days.

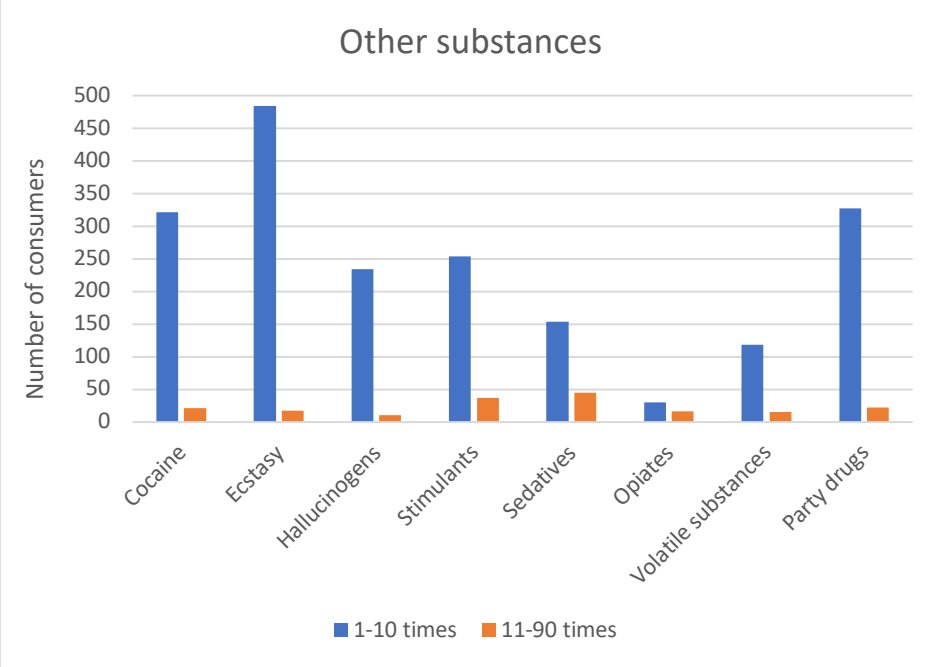

Figure 2: The frequency of other substance consumption over the past 30 days.

When we look at the overall results of common psychological complaints, we see that the students, on average, report moderate depressive symptoms (mean: 10.10; SD = 5.9), mild anxiety symptoms (mean: 8.37; SD = 5.3), moderate stress complaints (mean: 20.30; SD = 6.7), subthreshold sleep concerns (mean: 10.20; SD = 5.6), average procrastinating behaviours (mean: 28.97; SD = 7.9), average mental wellbeing (mean: 36.27; SD = 13.4), loneliness to some degree (mean: 18.34; SD = 5.2), an average self-esteem (mean: 17.08; SD = 6.3) and average perfectionism tendencies (mean: 26.60; SD = 7.9). See Table 5 for more details.

When the results are divided into the standardized categories, we see 19.5% of all students report severe stress complaints, 23% report moderate to severe sleep problems and 41.3% exhibit problematic procrastination behaviours (see Table 6). Additionally, 8.1% of all students report severe mood complaints and 11.5% report severe anxiety complaints (see Tables 7 and 8). These rates have increased from last year by 13.8% for mood complaints and 11.5% for anxiety complaints. See Figure 3 for the mean scores of depressive symptoms (measured on the phq9) and anxiety symptoms (measured on the gad7) across the last 5 waves.

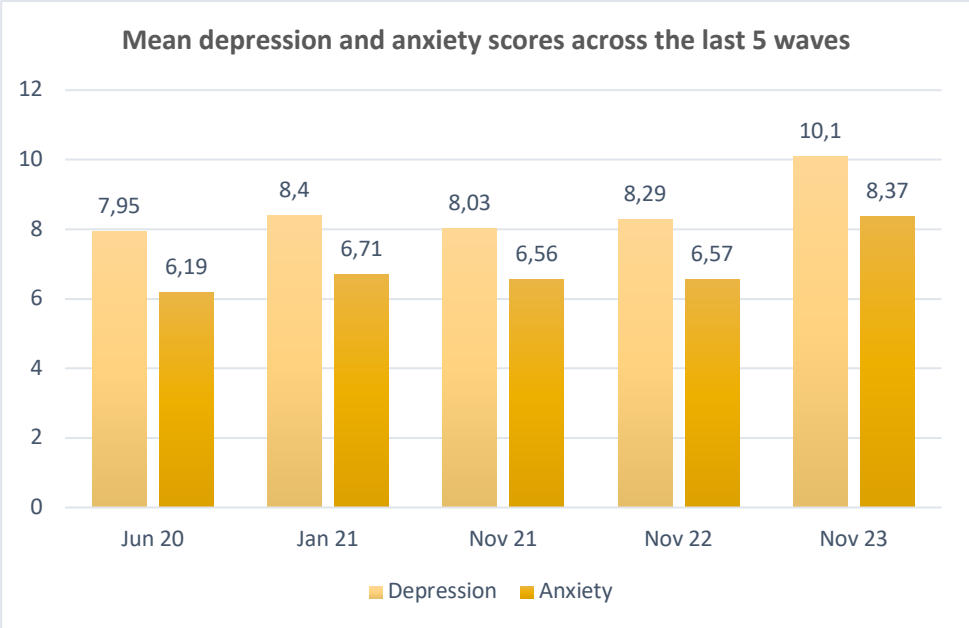

Figure 3: Depression (Patient Health Questionnaire-9) and Anxiety (Generalized Anxiety Disorder-7) scores across the last 5 surveys

When we compare different demographic groups, we see that not all students are equal in their psychological complaints. Female students experience significantly higher depression, anxiety, stress and sleep complaints than male students ($p < 0.001$ and Cohen's $d = 0.23, 0.38, 0.45$ & 0.13, respectively.). In addition, students whose gender identity does not align with their gender assigned at birth, experience significantly higher levels of depression, anxiety, stress, sleep complaints and lower mental well-being when compared to cis-gendered students ($p<0.001$ and Cohen's $d = 0.56, 0.42, 0.46, 0.26$ & 0.41, respectively). While both bachelor and master students exhibit comparable amounts of perceived stress, bachelor students on average have significantly higher symptoms of depression, anxiety, sleep problems and overall lower mental well-being when compared to master students ($p<0.001$ and Cohen's $d = 0.19, 0.10, 0.18$ & 0.09, respectively). Finally, international students have more psychological complaints (depression, anxiety, stress and sleep complaints) compared to Dutch students ($p<0.001$ and Cohen's $d = 0.29, 0.25, 0.34$ & 0.23, respectively). See Figures 4-8.

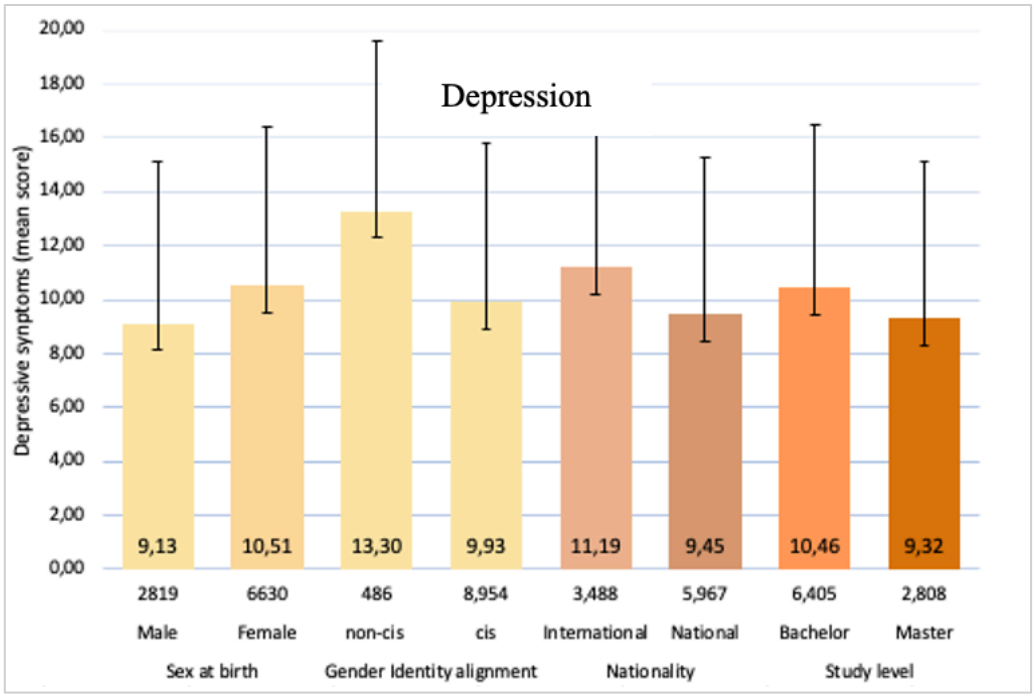

Figure 4: Mean depression scores (Patient Health Questionnaire-9; PHQ-9) across demographic groups

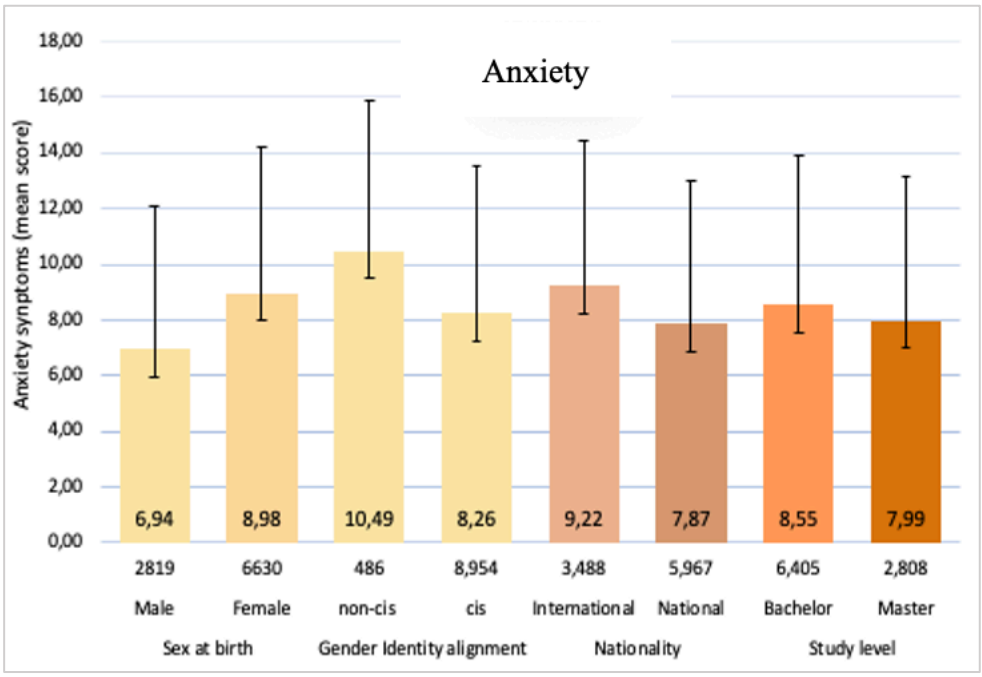

Figure 5: Mean anxiety scores (Generalized Anxiety Disorder-7; GAD-7) across demographic groups

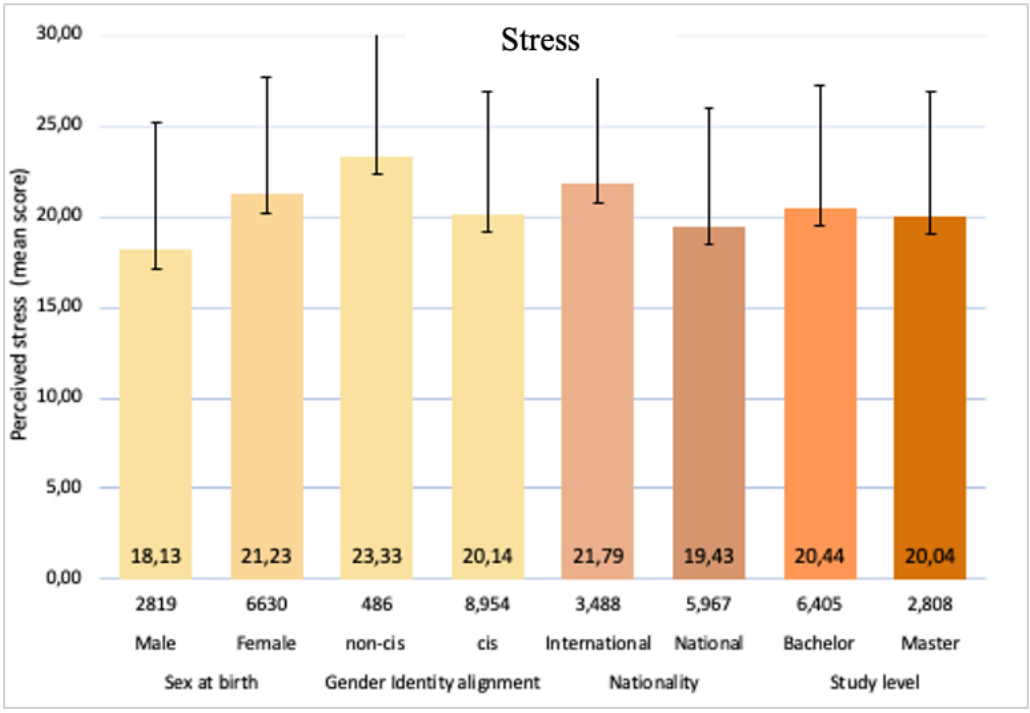

Figure 6: Mean stress scores (Perceived Stress Scale; PSS-10) across demographic groups

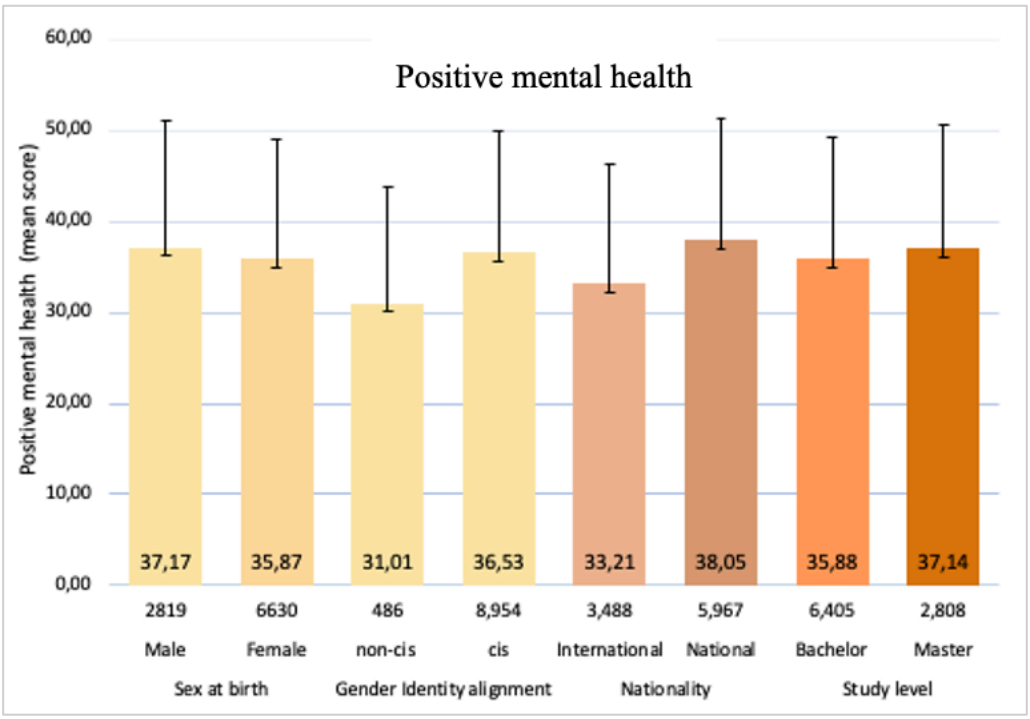

Figure 7: Mean positive mental health scores (Mental Health Continuum-Short Form; MHC-SF) across demographic groups.

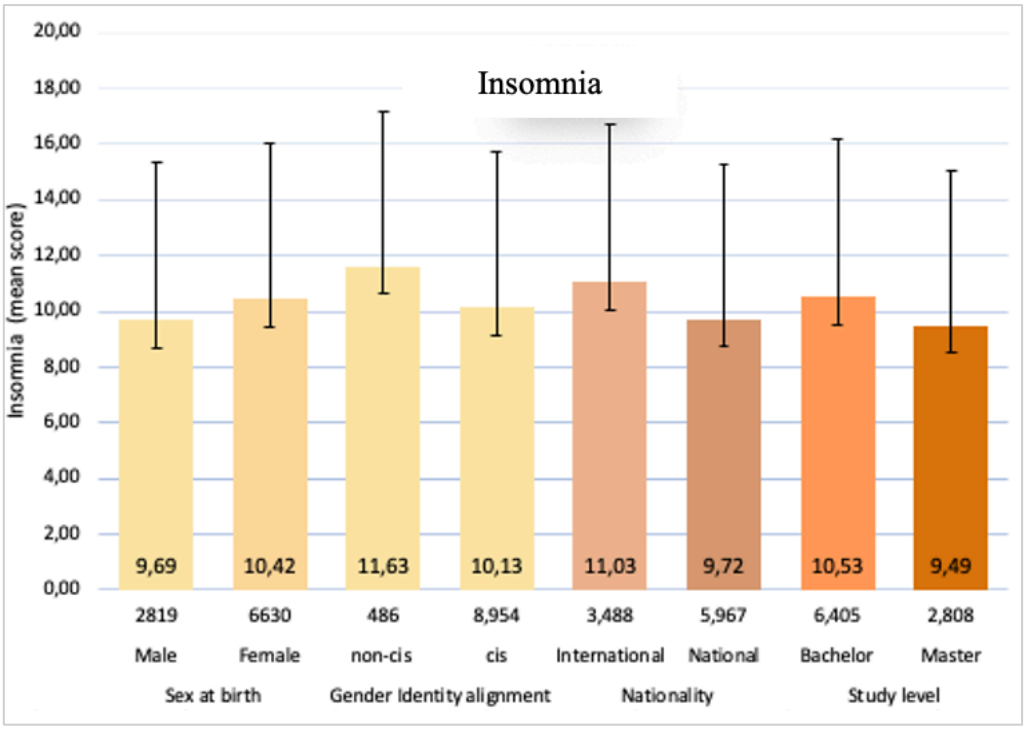

Figure 8: Mean insomnia scores (Insomnia Severity Index; ISI) across demographic groups

With regard to the other psychosocial outcomes: there were no significant differences between males and females in procrastination tendencies and loneliness. However, bachelor students, international students and non-cis gendered students were significantly lonelier and had higher procrastination tendencies when compared to master, Dutch and cig gendered students respectively ($p<0.001$). While there were no differences between bachelor and master students in perfectionism, international students, non-cis gendered students and female students displayed significantly higher perfectionism tendencies than Dutch, cis-gendered and male students respectively ($p<0.001$). Finally, there were significant differences amongst all the groups in self-esteem with male, cis-gendered, Dutch and master level students having significantly higher self-esteems when compared to Female, non cis-gendered, international and bachelor students respectively ($p<0.001$). See Figures 9-12.

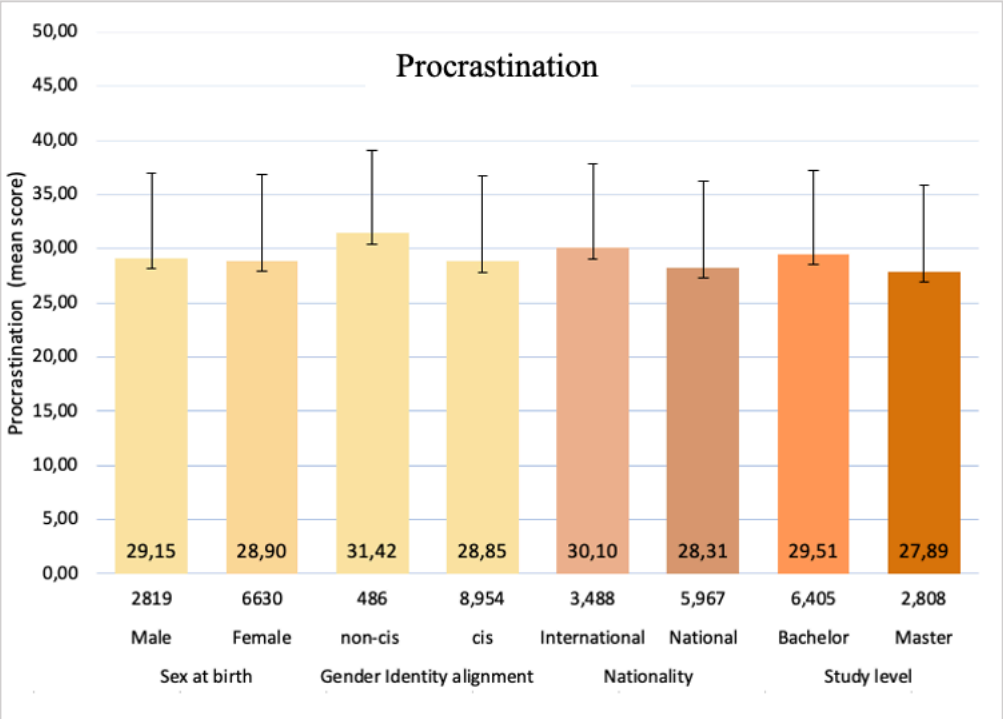

Figure 9: Mean procrastination scores (Irrational Procrastination Scale; IPS) across demographic groups

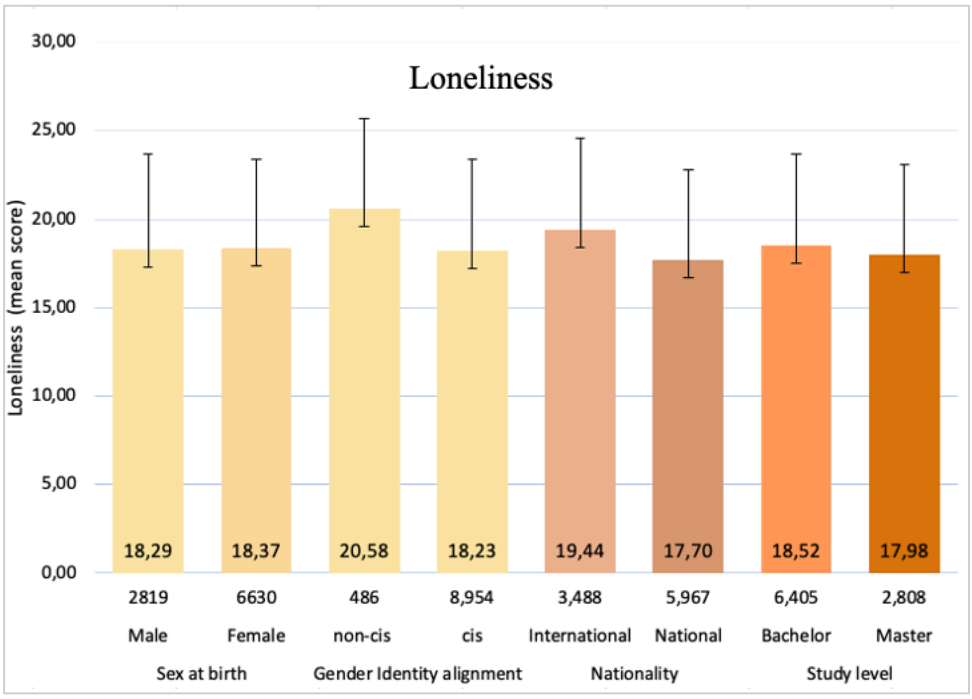

Figure 10: Loneliness (UCLA Loneliness Scale; ULS) across demographic groups.

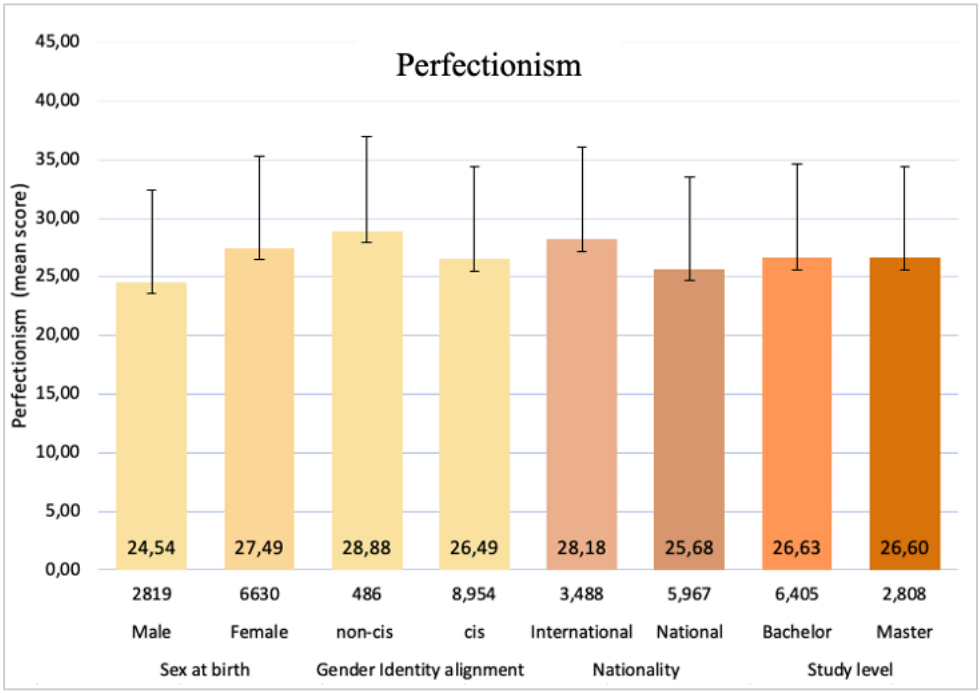

Figure 11: Perfectionism (Frost Multidimensional Perfectionism Scale; Fmps_cm) across demographic groups.

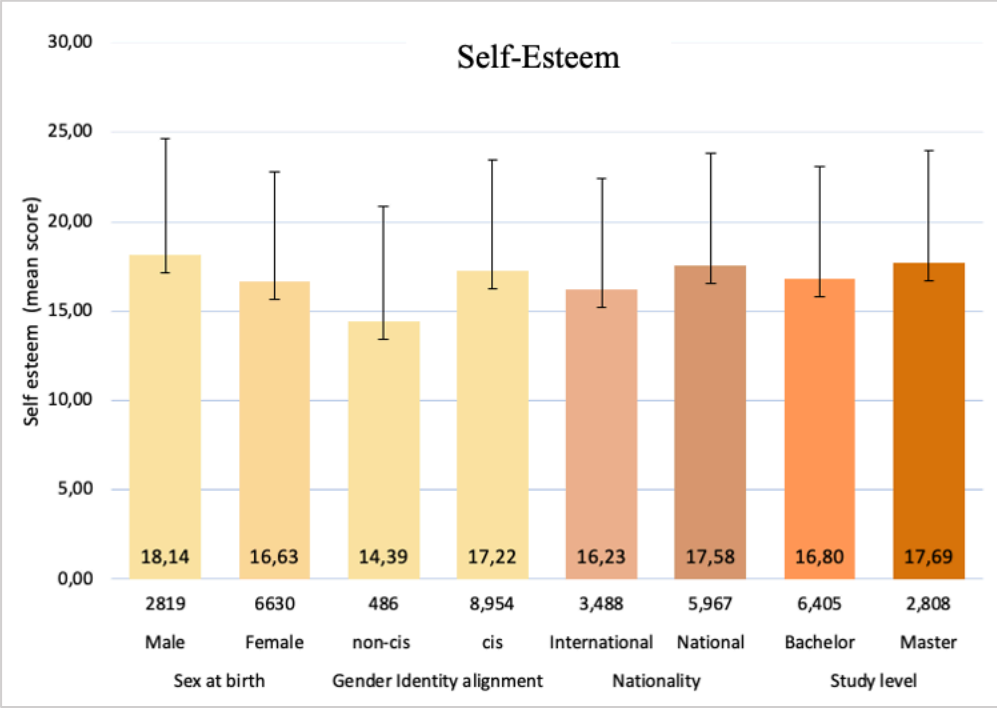

Figure 12: Self-esteem (Rosendal Self Esteem Scale; RSES) across demographic groups.

Discussion

Psychological and psychosocial problems such as depression, anxiety, stress, sleep, addiction, procrastination, loneliness, perfectionism, and low self-esteem are common among students who completed the survey. The high percentage of students with mood and anxiety complaints has even further increased compared to our previous surveys. The results also suggest that some groups of students have more psychological complaints than others. We see these differences most consistently among female students and among those students who's gender identity do not align with their sex assigned at birth. In addition, international and bachelor students continue to be at higher risk for mental health concerns.

Psychological complaints experienced by students can have consequences in many areas, including negative effects on study progress and future opportunities on the job market, relational functioning, and both short and long term health. Therefore, as a university consortium, we want to promote and protect the well-being of our students as much as we can. The results of this survey can be an important tool to identify trends in mental health and

substance use and can help guide the development of (digital) interventions aimed at protecting the mental health of the students.

The completion rate of 3.5% indicates that that these results are not applicable to the entire student population. It is, however, logical that students who currently experience mental health issues are more likely to complete the survey, because individuals who perceive their mental health as stable might not feel an urgency or need to engage with the survey. For instance, students who are aware of or are currently struggling with mental health symptoms are more motivated to engage with assessments that could provide a path of relief. They recognize the potential benefits of these surveys to identify and address their mental health symptoms[33]. In addition, this survey was designed with a follow up intervention for those who meet certain thresholds. This structure could incentivise those experiencing significant symptoms to complete the survey as it can lead to receiving the support they need[33]. This selective participation advocates the survey's role as a targeted screening tool much like a "thermometer" to detect individuals who may need further support. This makes the CU survey crucial for early detection, intervention and support within the educational institutions in the Netherlands.

A main limitation is that the answers on the survey are based on self-report measures which may be subject to multiple sources of bias (e.g., social desirability, limited introspective abilities, response bias etc.). However, the use of self-reports are justified by their ability to capture subjective experiences, their efficiency in large scale research and their validated reliability[33]. Nevertheless, continued and possibly more intensive monitoring of students is recommended, as is additional (online) support to increase student well-being.

Attachments

Table 1. Number of students that received an invitation to the survey and completed it

	Invited	Completed (%)
Vrije Universiteit Amsterdam	41,822	630 (1.5%)
Universiteit Leiden	38,000	1,780 (4.6%)
Universiteit Utrecht	39,568	2,116 (5.4%)
Universiteit Maastricht	22,455	1,585 (7.1%)
Erasmus Universiteit Rotterdam	37,000	878 (2.3%)
University of Amsterdam	50,810	1,412 (2.8%)
Rotterdam University of Applied Sciences	39,063	1,030 (2.6%)
Total	268,718	9,452 (3.5%)

Note: InHolland University of applied sciences and Avans university of applied sciences did not send out the CU survey. However, there were 21 participants from these two universities. InHolland University of applied sciences (N=16) and Avans university of applied sciences (N=5)

Table 2. Time taken to complete the survey (50th percentile)*

Wave	Time (in min:sec)
November 2022	21:10
November 2023	14:58

*Represents the value of 50% of the data points

Table 2. Demographic details of the participants of the survey (N = 9,452*)

Demographic variables	Number (%)
Sex at birth: female	6,630 (70.2%)
Sex at birth: male	2,819 (29.8%)
Gender identity: female	6,285 (66.5%)
Gender identity: male	2,754 (29.2%)
Gender identity: other	409 (4.3%)
Age	**M** =21.98, SD=3.6
Dutch	5,967 (63.1%)
International	3,488 (36.9%)
Bachelor	6,405 (67.8 %)
Master	2,808 (29.7%)
Pre-master	168 (1.8%)
Associate degree	70 (0.7%)
In a relationship	3,601 (38.1%)
Single	5,589 (59.1%)

*Some variables have missing values. Therefore, not everything adds up to 9452.

Table 3. Psychosocial outcomes (N = 9,452)

Experiencing loneliness often to very often	3,314 (35%)
Severe to very severe feelings of loneliness	2,805 (38.1%)
High** levels of study stress	3,703 (39.8%)
Hazardous alcohol consumption (male)	900 (31.9%)
hazardous alcohol consumption (female)	1,815 (27%)
Currently using prescribed or over the counter medication for mental health concerns	505 (5.3%)
Currently undergoing psychotherapy for mental health concerns	876 (9.3%)
Currently using both medication and psychotherapy for mental health concerns	437 (4.6%)
Students who feel like they needed support it in the past 12 months	5,219 (68.4%)

**Those who responded 8 and above on the 10-point indicator.

Table 5. Frequencies and percentages of the PSS, IPS and ISI categories of all students

Category		Frequency	Percentage
PSS			
	Low stress (0-13)	1,646	17.4%
	Moderate stress (14-26)	5,967	63.1%
	Severe stress (27-40)	1,848	19.5%
IPS			
	No procrastination (IPS<32)	5,555	58.7%%
	Problematic procrastination (IPS>31)	3,906	41.3%
ISI			
	No insomnia (0-7)	3,329	35.2%
	Subthreshold insomnia (8-14)	3,860	40.8%
	Moderate insomnia (15-21)	2,034	21.5%
	Severe insomnia (22-28)	238	2.5%
ULS			
	Not lonely (0-16)	2,967	31.4%
	Lonely (17-23)	4,864	51.4%
	Very lonely (>23)	1,630	17.2%
RSES			
	Low self-esteem (0-14)	3,365	35.6%
	Average self-esteem (15-25)	5,047	53.4%
	High self-esteem (26-30)	1,049	11.1%
FMPS-CM			
	Low perfectionism (0-15)	867	9.2%
	Average perfectionism (16-28)	4,592	48.5%
	High perfectionism (29-45)	4,002	42.3%

PSS = Perceived Stress Scale; IPS = Irrational Procrastination Scale; ISI = Insomnia Severity Index

Table 6. Frequencies and percentages of the PHQ-9 categories of all students (n = 9461)

Category	Frequency	Percentage	Percentage previous survey (n = 9048)	Difference
Some depressive symptoms (5-27)	7,623	80.6%	68.8%	11.8%
Moderate-to-severe depressive symptoms (10-27)	4,637	49%	35.2%	13.8%
None (0-4)	1,838	19.4%	31.2%	-11.8%
Mild (5-9)	2,986	31.6%	33.5%	-1.9%
Moderate (10-14)	2,441	25.8%	19.7%	6.1%
Moderate severe (15-19)	1,432	15.1%	10.1%	5%
Severe (20-27)	764	8.1%	5.5%	2.6%

PHQ-9 = Patient Health Questionnaire-9

Table 7. Frequencies and percentages of the GAD-7 categories of all students (n = 9461)

Category	Frequency	Percentage	Percentage previous survey (n = 9048)	Difference
Some anxiety complaints (6-21)	6,099	64.5%	49.1%	15.4%
Moderate-to- severe anxiety complaints (11-21)	3,154	33.3%	21.8%	11.5%
None (0-5)	3,362	35.5%	50.9%	-15.4%
Mild (6-10)	2,945	31.1%	27.3%	3.8%
Moderate (11-15)	2,064	21.8%	15%	6.8%
Severe (16-21)	1,090	11.5%	6.8%	4.7%

GAD-7 = Generalized Anxiety Disorder-7

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