NATIONAL CENTRE FOR SOCIAL RESEARCH (EKKE)

**COVID-19
INTERNATIONAL STUDENT WELL-BEING STUDY
C19 ISWS**

REPORT (v.1)
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STUDENT WELL-BEING DURING THE COVID-19 PANDEMIC IN GREECE. RESULTS FROM THE C19 ISWS SURVEY.

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Introduction

The outbreak of the Covid-19 pandemic took most countries by surprise and drastically disrupted peoples' daily lives, causing governments to take unprecedented measures such as general lockdowns and a halt of most economic activities in order to address the threat on public health. In Greece the government acted quickly to implement protective measures to curb the spread of the pandemic that had a huge impact on people's well-being. A particular segment of the population, higher education students, was affected not only by the lockdown measures that were addressed to the wider public, but also by institution-specific measures that led to a complete overturn of student life routine. Face-to-face classes and seminars were discontinued, libraries and student hostels and restaurants were closed down, counseling services were provided sparsely and on-line only, student activities were cancelled, and Erasmus students had to find a way to travel back to their homes. The new reality students had to adjust to, consisted of courses delivered as e-classes and on-line lectures, exams that were mostly taken on-line, take-away lunches in boxes (for those entitled to them), and a loss of income for many amongst them who were working to finance their studies or/and everyday living. The far-reaching changes experienced were bound to create uncertainty and increase anxiety among students, eventually affecting their psychological status and well-being. A recent rapid review by Brooks et al. (2020) dealt with the phycological impact of quarantine on general population, however evidence on youth is still lacking (OECD 2020).

In Greece, the COVID-19 crisis has further stressed the health services that have been severely affected by the austerity and recession that lasted more than a decade (Stathopoulou & Eikemo 2018, Eikemo et al. 2018). Although the compliance of the population with the lockdown and curfew measures imposed was remarkable, the quarantine had a considerable impact on mental health and well-being. As Peppou et al. (2020:2) note, the calls made to a nationwide mental health helpline addressed to a greater extent "the restrictive measures than the COVID-19 per se, while fears for the economy [were] reminiscent of the prior financial crisis".

The current report presents the first results of the International survey "Covid-19 Student Well-Being Study" carried out by EKKE (National Centre for Social Research) between 13 May-12 June 2020 with the participation of students enrolled in Greece's higher education institutions. The survey was designed by the University of Antwerp in collaboration with the University of Ghent in Belgium[1]. A total of 27 European and North American countries, as well South-Africa participated in the study (Van de Velde, S, Buffel, V, Wouters, V H, Bracke, & Colman 2020). The survey questionnaire was made available online (from 13 May to 12 June 2020) to all the students currently enrolled in the higher-education institutions (both public and private[2]) through the universities' and colleges' liaison offices, student associations and academic networks. The initial dataset consisted of 889 respondents which were filtered with variables 'Age' (between 17 and 80 years old) and 'Recorded date', resulting in 785 respondents. Of these 785 students, 585 fully completed the questionnaire. It should be pointed out that the survey in Greece was actually launched towards the end of the lockdown measures in place from March 11 to May 4, 2020. This affected the response rate, as during the lockdown, the student population, as well as the general population, had been stormed by a large number of requests to complete Covid-19 related on-line surveys and there was a sense of fatigue in addition to the anxiety for the upcoming exams. Even so, students from all over Greece and a variety of study areas did in fact complete the

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[1] https://www.uantwerpen.be/en/research-groups/centre-population-family-health/research2/covid-19-internation/

[2] According to a recent law (4653/2020, Article 50, Gov. Gazette 24/01/20), private colleges are recognized as equivalent to public higher education institutions.

survey, thus providing the research team with valuable insights on how the pandemic has affected their health and well-being.

Table 1 below, shows that the majority of respondents that participated in the survey were studying in the University of Athens (National & Kapodistrian University) and in the University of Macedonia (Thessaloniki).

TABLE 1: DISTRIBUTION OF SAMPLE BY PARTICIPATING HIGHER EDUCATION INSTITUTIONS

	Total Response		Response (Completed Questionnaires)	
	N	%	N	%
Higher-Education Institution				
National and Kapodistrian University of Athens	173	22.0%	149	25.5%
Panteion University of Social and Political Sciences	27	3.4%	24	4.1%
Harokopio University	57	7.3%	53	9.1%
Aristotle University of Thessaloniki	24	3.1%	22	3.8%
University of Macedonia	138	17.6%	117	20%
University of Crete	39	5%	34	5.8%
University of the Aegean	81	10.3%	67	11.5%
Other	173	22.0%	119	20.3%
Total	**712**	90.7%	**585**	100%
Missing	73	9.3%		
Total	**785**	100 %		

Description of the sample

As we can see in Table 2, 70% of the sample (completed questionnaires)[3] was female. Approximately 62% of the sample was between 17 and 22 years of age, while 18.6% was between 23 and 24 years old. More than 19% of the sample was over 25 years old. About half of the sample was single and 41.9% was in a relationship, 80.5% was Greek citizens and an additional 15.6% had one or more parents who were not born in Greece. Approximately, 70% of the students had at least one parent with a higher education diploma, while 2.2% of the sample had parents who both have a low educational level. Finally, only 4.7% of the sample stated that they were not able to easily borrow 500 euro from at least one person from their personal network, while over 50% stated that they had the option to borrow money from three or more persons from their network.

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[3] The results refer to completed questionnaires.

	Total Response		Response (Completed Questionnaires)	
	N	%	N	%
Gender				
Male	241	30.7%	169	28.9%
Female	537	68.4%	412	70.4%
X	7	0.9%	4	0.7%
Age group				
17-18	41	5.2%	33	5.6%
19-20	186	23.7%	145	24.8%
21-22	233	29.7%	185	31.6%
23-24	155	19.8%	109	18.6%
25+	170	21.7%	113	19.3%
Relationship Status				
Single	386	49.2%	295	50.4%
In a relationship	332	42.3%	245	41.9%
It is complicated	61	7.8%	45	7.7%
Missing	6	0.8%		
Migration status				
Native-born	600	76.4%	471	80.5%
First generation migrant	39	5.0%	23	3.9%
Second generation migrant	108	13.8%	91	15.6%
Missing	38	4.8%		
Educational level of parents				
Low	16	2.0%	13	2.2%
Medium	194	24.7%	159	27.2%
High	518	66.0%	405	69.2%
Do not know	15	1.9%	8	1.4%
Missing	42	5.4%		
Can borrow 500 euro from				
Nobody	52	6.6%	37	4.7%
One person	63	8.0%	46	5.9%
Two persons	104	13.3%	86	11.0%
Three or more persons	500	63.7%	416	53.0%
Missing	6	8.4%		

Table 3 presents the information regarding the study program, field of study, and citizenship status of students. Approximately 1 out of 4 students (24.6%) were in the first year of their studies. Most students were enrolled in a bachelor's program (85.6%) and the rest were enrolled in a Master's (10.3%) or PhD (3.4%) program. Approximately 36% of the sample were students from the field of study 'Social Sciences, Journalism and Information', and the second largest group were students from the field of study 'Health Sciences and Welfare'. The majority of the sample consisted of Greek citizens (86.7%), while 12.7% of the respondents were permanent residents with a migrant background and less than 1% of the respondents declared temporary residents (more than one-year permission). Finally, it appears that nobody moved back to their country of origin during the pandemic.

	Total Response		Response (Completed Questionnaires)	
	N	**%**	**N**	**%**
First year in higher education				
Yes	172	21.9%	144	24.6%
No	534	68.0%	441	75.4%
Missing	79	10.1%		
Study Program				
Bachelor program	596	75.9%	501	85.6%
Master program	79	10.1%	60	10.3%
Doctoral program	29	3.7%	20	3.4%
Other	8	1.0%	4	0.7%
Missing	73	9.3%		
Citizenship Status				
Greek citizen	614	78.2%	507	86.7%
Permanent resident	84	10.7%	74	12.7%
Temporary resident less than one year	1	0.1%		
Temporary resident for more than one year	7	0.9%	4	0.7%
Missing	79	10.1%		
Field of study				
Education	53	6.8%	48	8.2%
Humanities and Arts	74	9.4%	62	10.6%
Social sciences, journalism, and information	248	31.6%	211	36.1%
Business, administration, and law	42	5.4%	34	5.8%
Natural sciences, Mathematics & Statistics	80	10.2%	60	10.3%
Information and communication technologies	47	6.0%	38	6.5%
Engineering, manufacturing, and construction	38	4.8%	24	4.1%
Health and welfare	110	14.0%	89	15.2%
Agriculture, Services & Other	24	3.1%	19	3.3%
Missing	69	8.8%		

As the sample is not representative of the entire student population in the country the results presented in the following chapters are weighted by gender and field of study. More information on the weighting characteristics can be found in the Appendix.

Perceptions about academic life during the COVID-19 outbreak

The current section presents the survey results in relation to the following components:

- Academic stress and satisfaction during the COVID-19 outbreak.
- Student contact with _counseling/social services of the university/college_ in order to discuss concerns about studies, psychosocial or financial problems and /or other type of personal problems.
- Student contact with _teaching staff_ in order to discuss concerns about studies or psychosocial problems.

Academic stress and academic satisfaction

The academic stress and satisfaction of students increased during the COVID-19 outbreak. Stress was mainly related to study workload and anxiety about the successful completion of the academic year. Students reported low levels of anxiety in relation to the knowledge acquired and the changes in teaching methods.

More than half of the students (71.2%) were satisfied in relation to the proactive measures that were implemented by the university/college during the COVID-19 outbreak. Furthermore, approximately half of the students were satisfied with the information provided by the university/college about changes in academic life due to COVID-19. However, students were less satisfied with the quality of the education and almost half of them reported that they could not talk to a staff member about their concerns due to the pandemic.

Academic stress and satisfaction do not differ by gender. Students aged over 25 years were less stressed and more satisfied than the younger ones. The parental educational background is associated with the academic satisfaction of students; the higher the education level is, the less satisfied with their academic life students are. Students who considered their studies were less important compared to other activities in their lives and students with no ability to borrow money reported higher levels of academic stress. Those studying "Healthcare and Welfare" reported the lowest academic stress in comparison to students of other fields of study.

The academic stress and academic satisfaction were measured by the following questions:

Academic Stress	Academic Satisfaction
My university/college workload has significantly increased during the COVID-19 outbreak.	The university/college provides poorer quality of education during the COVID-19 outbreak as before.
I know less about what is expected of me in the different course modules/units during the COVID-19 outbreak.	The university/college has sufficiently informed me about the changes that were implemented due to the COVID-19 outbreak.
I am concerned that I will not be able to successfully complete the academic year due to the COVID-19 outbreak.	I am satisfied with the way my university/college has implemented protective measures concerning the COVID-19 outbreak.
The change in teaching methods resulting from the COVID-19 outbreak has caused me significant stress.	I feel I can talk to a member of the university/college staff (e.g., professor, student counselor) about my concerns due to the COVID-19 outbreak.

- The academic stress scale ranges between 0 and 16 points, with a higher score on the scale indicating more stress during the outbreak.
- The academic satisfaction scale ranges between 0 and 16 points, with a higher score on the scale indicating more academic satisfaction during the outbreak.

The mean academic stress score is 9.2 with a standard deviation of 3.2, whereas the mean academic satisfaction score is 8.72 with a standard deviation of 3.4. The mean for both components is above average, indicating that the COVID-19 outbreak affected the levels of both academic stress and satisfaction.

The distribution of respondents by academic stress and satisfaction is presented in Table 4.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Academic Stress					
My university/college workload has significantly increased during the COVID-19 outbreak.	22.3%	24%	29.7%	19%	5%
I know less about what is expected of me in the different course modules/units during the COVID-19 outbreak.	14%	25.1%	20.8%	26.1%	14%
I am concerned that I will not be able to successfully complete the academic year due to the COVID-19 outbreak.	30%	37%	11.5%	14.1%	7.3%
The change in teaching methods resulting from the COVID-19 outbreak has caused me significant stress.	13.5%	29.8%	26.3%	18.6%	11.8%
Academic Satisfaction					
The university/college provides poorer quality of education during the COVID-19 outbreak than before.	15.4%	20.9%	26.4%	25%	12.2%
The university/college has sufficiently informed me about the changes that were implemented due to the COVID-19 outbreak.	13.5%	35.6%	25.9%	15.3%	9.6%
I am satisfied with the way my university/college has implemented protective measures concerning the COVID-19 outbreak.	22.9%	48.3%	21.5%	4.2%	3.2%
I feel I can talk to a member of the university/college staff (e.g., professor, student counselor) about my concerns due to the COVID-19 outbreak.	8.8%	15.9%	29.5%	21.4%	24.5%

Regarding academic stress, 67% of the respondents were concerned that they would not be able to successfully complete the academic year due to the pandemic, whereas 46.3% agreed or strongly agreed that their workload had increased significantly during the outbreak. The share of students who reported that during the outbreak their level of knowledge of the different course modules/units was lower than expected, was 39.1%. The change in teaching methods also caused significant stress to 43.3% of the students.

The students seem to be to a large extent satisfied with their university/college in terms of the specific conditions related to the quarantine. Almost one third of them (37.2%) reported that the quality of education remained the same during the outbreak, whereas 36.3% reported that the quality of education was poorer during the outbreak. Approximately half of the sample (49.1%) reported that their university/college provided sufficient information regarding the changes due to the COVID-19. The majority was satisfied (71.2%) with the proactive measures that were implemented by their university/college. However, a significant percentage (45.9%) felt unable to talk to a member of the university/college staff about their concerns due to the pandemic.

Academic stress and satisfaction by sociodemographic information

The level of academic stress and satisfaction by sociodemographic information such as gender, age, migration status, educational level of parents and ability to borrow money from friends and/or family is presented in Table 5.

	Academic stress			Academic satisfaction		
	Mean	S.D.	Sign.	Mean	S.D.	Sign.
Gender						
Male	9.27	3.08		8.39	3.47	*
Female	9.12	3.37		9.11	3.33	*
Age group						
17-18	9.48	3.55		9.07	2.83	
19-20	9.57	3.40	*	8.54	3.54	*
21-22	9.84	2.97	*	8.03	3.52	*
23-24	8.71	3.05		8.65	3.06	*
25+	8.29	3.23	*	10.02	3.32	*
Migration status						
Native-born	9.07	3.25		8.64	3.39	
First generation migrant	10.55	2.93		7.61	3.71	
Second generation migrant	9.56	3.11		9.33	3.44	
Educational level of parents						
Low	9.34	4.20		9.46	3.15	
Medium	9.34	3.15		9.51	3.36	*
High	9.16	3.19		8.39	3.43	*
Do not know	9.54	4.77		8.97	2.40	
Can borrow 500 euro						
No	10.83	3.31	*	8.21	2.65	
Yes	9.13	3.20	*	8.75	3.46	

*$p<0.05$

- Female and male students reported the same levels of academic stress, while academic satisfaction was significantly higher among female students.
- The students of the age group "25+" had less stress and higher academic satisfaction compared to younger age groups. Significant differences ($p<0.05$) were found between "25+" age group and the three youngest age groups (17-18, 19-20, 21-22), both regarding academic stress and satisfaction.
- Native-born students and second-generation migrant students reported less stress and higher academic satisfaction than first generation migrant students. However, the differences are not statistically significant.
- Although there are no significant differences in academic stress among students by educational level of parents, the mean academic satisfaction score differs significantly between students whose parents

were of a medium educational background and those whose parents had a high background. The latter reported the lowest academic satisfaction.

- Finally, students who could not borrow money easily from family, friends or colleagues experienced significantly higher levels of stress than those who did not have this ability. Academic satisfaction does not differ significantly in relation to the ability of borrowing.

Academic stress and academic satisfaction by study related information

The levels of academic stress and satisfaction by study related information are presented in Table 6.

TABLE 6: ACADEMIC STRESS AND SATISFACTION BY STUDY RELATED INFORMATION

	Academic stress			Academic satisfaction		
	Mean	S.D.	Sign.	Mean	S.D.	Sign.
First year in higher education						
Yes	9.56	3.33		8.91	3.24	
No	9.11	3.19		8.67	3.47	
Study Program						
Bachelor	9.28	3.24		8.69	3.49	
Master	9.12	3.13		8.73	3.03	
PhD	7.19	2.96		9.79	2.51	
Other	8.77	3.15		10.59	1.69	
Importance of studies						
More Important	9.44	3.45		8.68	3.50	
Equally	8.96	3.06	*	8.81	3.38	
Less Important	10.56	2.95	*	8.10	3.36	
Field of study[4]						
Education	8.72	3.51		10.03	3.11	*
Humanities and Arts	8.88	3.71		9.25	2.91	*
Social sciences, business, and law	9.11	3.20		9.29	2.79	*
Science	9.04	3.17		8.92	3.14	*
Engineering, manufacturing, and construction	10.17	3.02	*	8.02	3.97	
Agriculture	10.04	2.51		5.91	3.28	*
Health and welfare	8.25	3.30	*	8.35	3.44	
Services	9.00	4.95		12.00	0.99	
Other	10.00	2.21		7.80	4.10	
Any combination of the above[5]	8.52	3.21		8.99	3.71	

*p<0.05

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[4] Based on ISCED-F2013
[5] Refers to cases where the students reported more than one field of study.

- Academic stress and satisfaction do not differ significantly according to the number of years in education. However, students in their first year of study seemed to have slightly higher academic stress than students with more years in education.
- PhD students seemed to be less stressed and more satisfied than students of other study programs. However, differences are not statistically significant.
- Students who considered their studies less important in relation to other activities in their lives, experienced more academic stress than those who consider their studies equally important. Academic satisfaction does not differ significantly according to the importance of studies.
- Academic stress was higher for students who were studying 'Engineering, Manufacture and Construction' when compared with the stress of students in other study areas. The lowest stress levels were observed among 'Health and Welfare' students.
- Those whose field of study was 'Agriculture' had the second highest academic stress and the lowest academic satisfaction mean. The mean of satisfaction of students in 'Agriculture' differs significantly from the respective score of students whose study areas was: 'Education', 'Humanities and Arts', 'Social sciences', 'Business and law" and 'Science'. Students in the field of 'Services' showed the highest level of academic satisfaction.

Contact with student counseling / social services

Following the outbreak of the COVID-19 pandemic, the vast majority of students (96%) did not seek contact with the student-counseling or social services of their university/college. Among those students who did seek contact, the majority reported that the main reason for which they contacted the support services in their institution was "worries about their studies". Psychosocial or financial problems were reported by fewer students as reasons for further discussion with the counseling or social services of their university/college. Students' contact with the counseling or social services is associated with gender, age, the ability to borrow money and the field of study.

In this section, Figure 1 presents the frequency and the reasons for which the students contacted student counseling or social services at their university/college, during the outbreak. According to the survey findings, only 4% of respondents replied "Yes" to the specific question. The profile of students who did seek contact is further analyzed by sociodemographic and study related information.
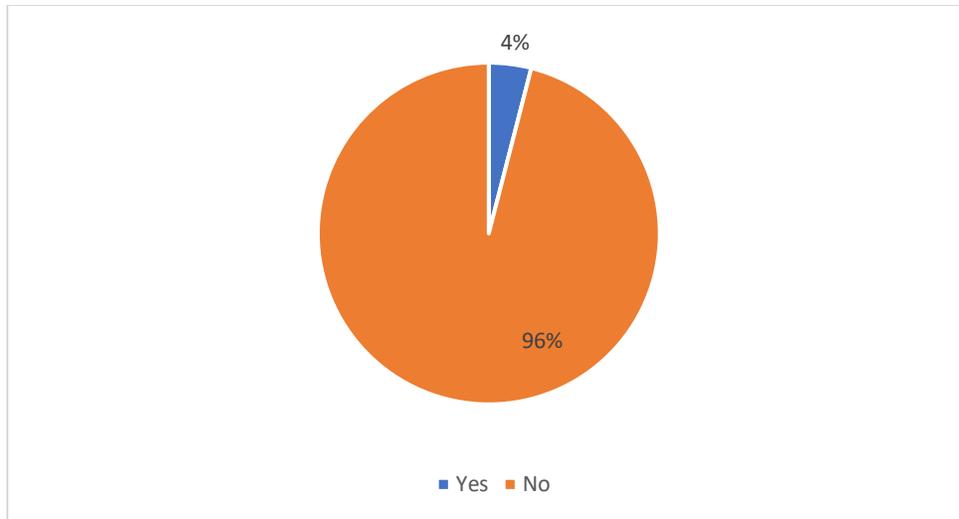
Contact with student counseling /social services by sociodemographic information

Table 7 presents the proportion of students who did seek contact with student-counseling or social services by sociodemographic information such as gender, age, migration status, educational level of parents and ability to borrow money.

- Female students were much more likely than male students to seek contact. Gender seems to be associated with the extent to which students approach the counseling/social services.
- The need to contact student counseling / social services is also related to the age of students. Students of the age group 21-22 years were more likely to seek contact than other age groups.
- First generation migrant students were more likely than native-born or second-generation migrant students to seek contact with university/college counseling or social services. However, the differences are not statistically significant.
- Students whose parents had a low educational background were more likely to seek contact with counseling / social services. However, the differences are not statistically significant.
- Finally, students who could borrow money from family, friends or colleagues were more likely to seek contact.

		Yes	No	Chi²
Gender				
	Male	2.0%	98.0%	*
	Female	6.3%	93.7%	
Age group				
	17-18	3.6%	96.4%	*
	19-20	2.0%	98.0%	
	21-22	7.6%	92.4%	
	23-24	3.2%	96.8%	
	25+	1.8%	98.2%	
Migration status				
	Native-born	3.5%	96.5%	
	First generation migrant	13.0%	87.0%	
	Second generation migrant	4.9%	95.1%	
Educational level of parents				
	Low	6.7%	93.3%	
	Medium	1.9%	98.1%	
	High	4.7%	95.3%	
	Do not know	11.1%	88.9%	
Can borrow 500 euro				
	No	0.0%	100.0%	*
	Yes	4.3%	95.7%	*

Contact with student counseling /social services by study related information

The share of students who did seek contact with student-counseling or social services is presented in Table 8.

- First year students seem less likely to seek contact, however, differences compared to older students are not significant.
- No association was found between the program that students were enrolled in and the intention to contact counseling/social services. However, PhD students seemed more likely to seek contact.
- Students who considered their studies as being more important in their lives sought contact to a higher extent than those for whom their studies had less or similar importance to other activities. However, differences are not statistically significant.
- The field of study seems to be related to the frequency of contact with services. Students studying 'Agriculture' who also showed high levels of academic stress and low levels of academic satisfaction, were more likely to seek contact with the counseling/social services.

TABLE 8: CONTACT WITH STUDENT COUNSELING SERVICES BY STUDY RELATED INFORMATION

	Yes	No	Chi²
First year in higher education			
Yes	1.5%	98.5%	
No	4.9%	95.1%	
Study Program			
Bachelor	4.0%	96.0%	
Master	4.6%	95.4%	
PhD	8.3%	91.7%	
Other	0.0%	100.0%	
Importance of studies			
More Important	6%	94%	
Equally	3%	97%	
Less Important	4%	96%	
Field of study			
Education	1.5%	98.5%	*
Humanities and Arts	4.9%	95.1%	
Social sciences, business, and law			
Science	4%	96%	
Engineering, manufacturing, and construction	4.6%	95.4%	
Agriculture	8.3%	91.7%	
Health and welfare	0%	100%	
Services			
Other	6%	94%	
Any combination of the above	2.9%	97.1%	

Reasons for contact with student counseling / social services

Figure 2 indicates that among the students who sought contact, "Worries about studies" was the main reason for contact and "Psychosocial problems" was the second most important one (41.5%). A large proportion of students (17.5%) reported that "Financial worries/difficulties" was the reason for which they wanted to contact the counseling/social services.
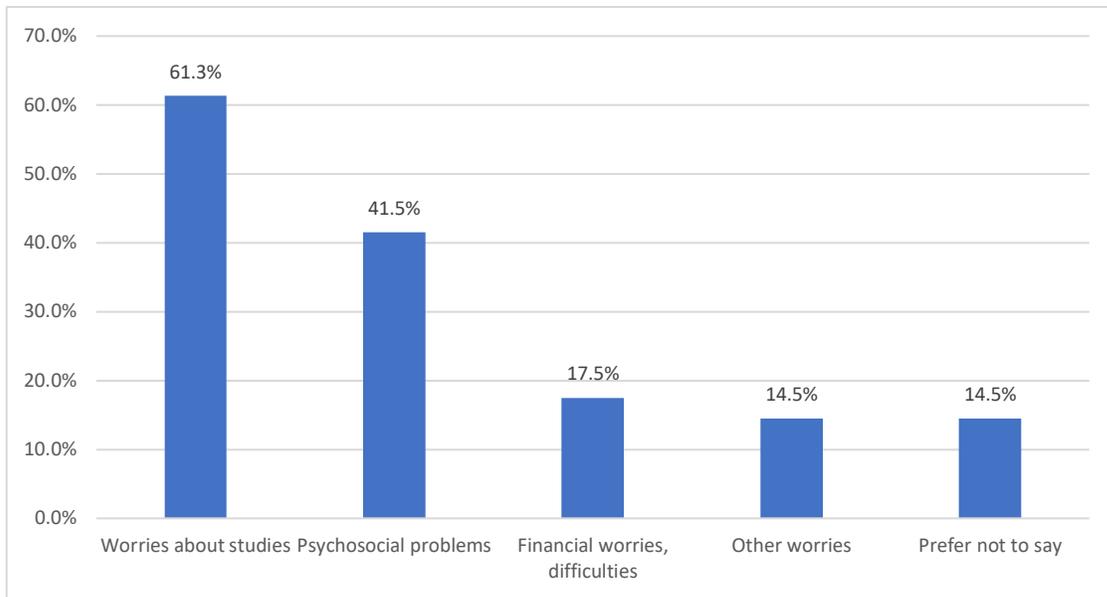
Contact with teaching staff

> Most of the students did not seek contact with the teaching staff following the COVID-19 outbreak. The main reason for contact was "worries about their studies". In general, contact with the teaching staff during the pandemic is associated with age, migration status, ability to borrow money, years in higher education, importance of study in life and field of study.

Figures 3 and 4 provide an overview of the extent to which students sought contact by type of reason (worries about studies, psychosocial problems).

FIGURE 3: WORRIES ABOUT STUDIES   FIGURE 4: PSYCHOSOCIAL PROBLEMS
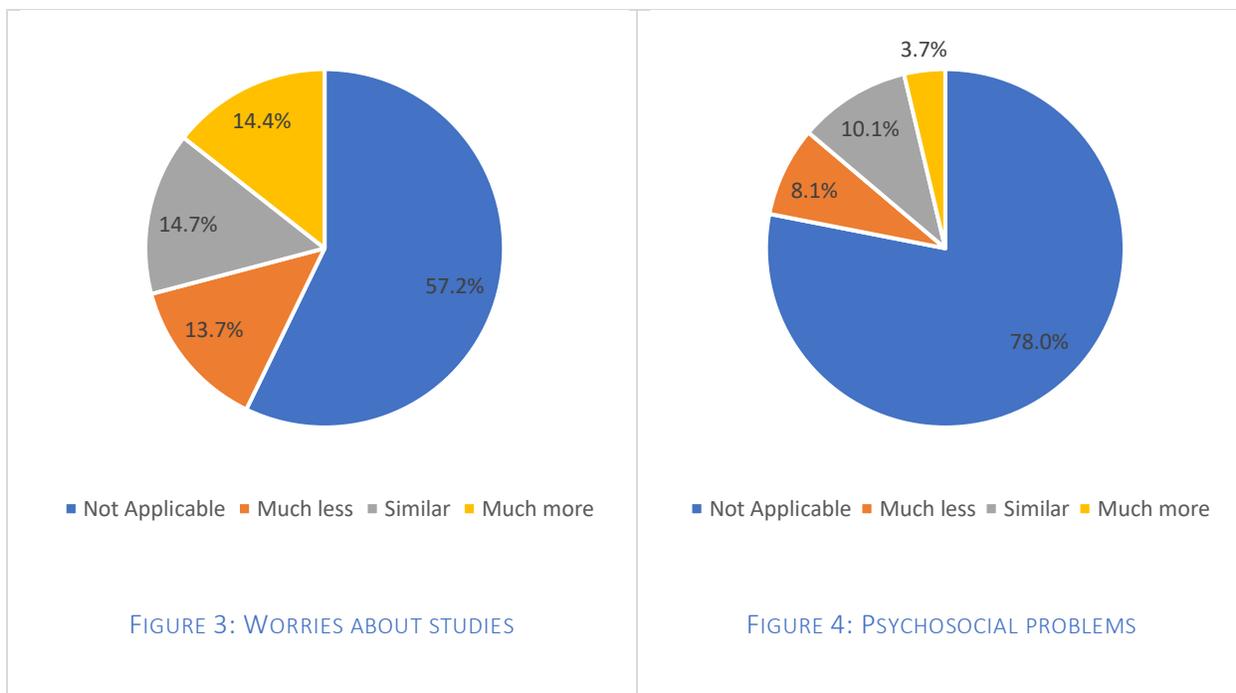
The majority of students did not seek contact with the teaching staff, either before or during the outbreak. 14.4% of students contacted the teaching staff in order to discuss "worries about studies". Only 3.7% of students reported that they contacted the teaching staff to a greater extent than before in order to discuss "psychosocial problems". The frequency of contact to discuss "worries about studies" remained the same during the quarantine for 14.7% of the students. The respective share of students that reached out to the teaching staff for psychosocial reasons was 10.1%.

Contact with teaching staff by sociodemographic information

The share of students who contacted teaching staff by sociodemographic information is presented in Table 9.

- During the outbreak, both genders were more likely to discuss "worries about studies" than "psychosocial problems". Male students (16.3%) were more likely than their female counterparts (12.6%) to contact teaching staff in order to discuss study-related issues. The share of male and female students who sought more frequent contact in order to discuss "psychosocial problems" was almost identical (3.7% and 3.5% respectively). However, differences were not statistically significant.
- Students of 21-22 years of age were more likely to seek contact in order to discuss "worries about studies" (19.3%), whereas the younger ones were more likely to seek contact to discuss "psychosocial problems" (20.7%).
- Native born students were more likely to seek contact to discuss "worries about studies" (15.7%) while a small percentage of first-generation migrant students were more likely to contact the teaching stuff to discuss "psychosocial problems" (4.3%).
- Students whose parents had a higher education seemed less likely to seek contact in order to discuss "psychosocial problems". However, parental educational level does not seem to be associated with

the extent to which students sought contact during the outbreak in order to discuss "worries about studies" or "psychosocial problems".

- Students who could not borrow money were much more likely to contact teaching staff to discuss their "worries about studies" (33.3%). The possibility of borrowing money does not seem to be associated with the extent of contact for "psychosocial problems".

TABLE 9: CONTACT WITH TEACHING STAFF BY SOCIODEMOGRAPHIC INFORMATION

		Worries about studies					Psychosocial problems				
		Not Applicable	Much less	Similar	Much more	Chi²	Not Applicable	Much less	Similar	Much more	Chi²
Gender											
	Male	55.3%	14.9%	13.6%	16.3%		77.3%	6.4%	12.5%	3.7%	
	Female	58.9%	12.3%	16.1%	12.6%		78.9%	9.8%	7.7%	3.5%	
Age group											
	17-18	65.5%	10.3%	6.9%	17.2%	*	58.6%	3.4%	17.2%	20.7%	*
	19-20	69.4%	10.2%	8.8%	11.6%		83.1%	2.7%	10.8%	3.4%	
	21-22	48.0%	11.7%	21.1%	19.3%		78.9%	9.4%	8.2%	3.5%	
	23-24	56.7%	16.5%	17.3%	9.4%		83.5%	8.7%	6.3%	1.6%	
	25+	52.7%	19.6%	11.6%	16.1%		67.9%	14.3%	14.3%	3.6%	
Migration status											
	Native-born	57.5%	13.9%	12.9%	15.7%	*	77.1%	8.1%	11.1%	3.7%	*
	First generation migrant	34.8%	13.0%	52.2%	0.0%		56.5%	17.4%	21.7%	4.3%	
	Second generation migrant	61.2%	12.6%	13.6%	12.6%		87.4%	5.8%	2.9%	3.9%	
Educational level of parents											
	Low	80.0%	6.7%	0.0%	13.3%		68.8%	12.5%	6.3%	12.5%	
	Medium	51.9%	14.1%	18.6%	15.4%		76.3%	8.3%	11.5%	3.8%	
	High	57.9%	14.0%	13.8%	14.3%		79.0%	7.7%	9.9%	3.5%	
	Do not know	87.5%	0.0%	12.5%	0.0%		87.5%	12.5%	0.0%	0.0%	
Can borrow 500 euro											
	No	50.0%	6.7%	10.0%	33.3%	*	90.3%	6.5%	3.2%	0.0%	
	Yes	57.5%	14.2%	15.0%	13.3%		77.3%	8.1%	10.6%	4.0%	

Contact with teaching staff by study related information

The share of students who sought contact with teaching staff by study related information is presented in Table 10.

- First year students were more likely to seek contact in order to discuss "Psychosocial problems".
- Master's students seemed less likely to seek contact in order to discuss their worries about studies and more likely to seek contact to discuss psychosocial concerns.
- Students who considered their studies were of great importance in their lives, were more likely to contact teaching staff, both regarding study-related concerns and psychosocial concerns. The importance of study seems to be associated with the extent to which students contacted teaching staff during the pandemic.
- The field of study is also associated with the extent to which students seek consultation from the teaching staff. Students in 'Engineering, manufacturing, and construction' were more likely to seek contact to discuss their worries about studies and less likely to discuss psychosocial problems. Moreover, students in 'Agriculture' or 'Services' were less likely than students of other study areas to discuss their worries about studies or psychosocial problems.

TABLE 10: CONTACT WITH TEACHING STAFF BY STUDY RELATED INFORMATION

	Worries about studies					Psychosocial problems				
	Not Applicable	Much less	Similar	Much more	Chi²	Not Applicable	Much less	Similar	Much more	Chi²
First year of study										
Yes	72.7%	6.8%	12.1%	8.3%	*	78.0%	3.8%	11.4%	6.8%	*
No	52.9%	15.7%	15.3%	16.2%		78.1%	9.5%	9.7%	2.7%	
Study Program										
Bachelor	56.7%	13.9%	14.1%	15.3%		78.7%	8.2%	9.7%	3.4%	
Master	64.6%	12.3%	18.5%	4.6%		75.8%	6.1%	10.6%	7.6%	
PhD	33.3%	16.7%	25.0%	25.0%		66.7%	16.7%	16.7%	0.0%	
Other	66.7%	0.0%	0.0%	33.3%		66.7%	0.0%	33.3%	0.0%	
Importance of studies										
More Important	55.0%	15.6%	11.5%	17.9%	*	74.8%	8.3%	12.4%	4.6%	*
Equally	59.9%	11.8%	15.3%	13.0%		80.5%	6.5%	9.4%	3.5%	
Less Important	39.3%	21.4%	32.1%	7.1%		71.4%	25.0%	3.6%	0.0%	
Field of study										
Education	58.8%	17.6%	11.8%	11.8%	*	88.2%	5.9%	5.9%	0.0%	*
Humanities and Arts	63.0%	6.5%	19.6%	10.9%		75.6%	2.2%	13.3%	8.9%	
Social sciences, business, and law	57.2%	12.1%	18.5%	12.1%		74.6%	9.8%	11.0%	4.6%	
Science	60.3%	17.6%	17.6%	4.4%		83.6%	4.5%	10.4%	1.5%	
Engineering, manufacturing, and construction	59.7%	10.5%	4.8%	25.0%		84.8%	8.8%	6.4%	0.0%	
Agriculture	33.3%	33.3%	33.3%	0.0%		69.2%	0.0%	30.8%	0.0%	
Health and welfare	51.2%	18.6%	14.0%	16.3%		70.5%	11.4%	11.4%	6.8%	
Services	33.3%	33.3%	33.3%	0.0%		66.7%	33.3%	0.0%	0.0%	
Other	60.0%	20.0%	0.0%	20.0%		90.0%	0.0%	0.0%	10.0%	
Any combination of the above	57.3%	12.0%	13.3%	17.3%		74.7%	10.7%	6.7%	8.0%	

Financial capacity of students

In this section, we present the findings regarding the life of students before and during the COVID-19 outbreak. "During COVID-19 outbreak" refers to "last week", the week prior to filling out the survey. First, we examine the financial capacity of students in relation to sociodemographic information and source of funding.

During the outbreak, the share of students who reported that their financial status was worse than before increased by 10%. The financial resources of female students deteriorated to a greater extent than those of their male counterparts, whereas young students were more likely to feel less confident about their financial capacity than students of age "25+". Students who were in a relationship and students whose parents had a low educational background were more likely to report financial problems.

Figure 5 shows that during the pandemic the financial capacity of students decreased substantially.

- Before the pandemic, 69.1% of students reported that they had sufficient financial resources (strongly agree and agree) to cover their monthly costs, whereas during the pandemic this percentage decreased to 58.6%.
- Additionally, 8.6% of students reported that they did not have sufficient financial resources (strongly disagree and disagree) to cover their monthly costs, whereas during the pandemic this percentage increased to 18.7%.
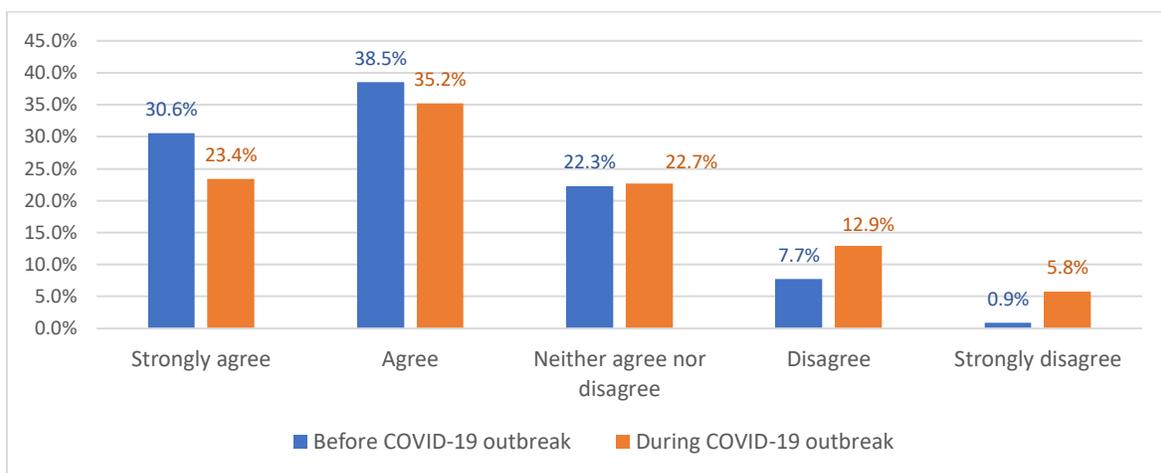

FIGURE 5: FREQUENCY OF SUFFICIENT FINANCIAL RESOURCES TO COVER MONTHLY LIVING COSTS

Availability of sufficient financial resources by sociodemographic information

The availability of financial resources by sociodemographic information before and during the COVID-19 outbreak is presented in Table 11.

TABLE 11: SUFFICIENT FINANCIAL RESOURCES BY SOCIODEMOGRAPHIC INFORMATION

	Before COVID-19 outbreak				During COVID-19 outbreak			
	Agree	Neither agree nor disagree	Disagree	Chi²	Agree	Neither agree nor disagree	Disagree	Chi²
Gender								
Male	72.2%	20.0%	7.8%		67.9%	17.6%	14.5%	*
Female	66.1%	24.8%	9.1%		49.8%	27.7%	22.5%	
Age group								
17-18	65.5%	13.8%	20.7%	*	39.3%	32.1%	28.6%	*
19-20	70.7%	23.8%	5.4%		61.9%	27.2%	10.9%	
21-22	77.2%	17.5%	5.3%		65.5%	22.2%	12.3%	
23-24	71.7%	22.8%	5.5%		64.1%	18.8%	17.2%	
25+	51.8%	29.5%	18.8%		42.0%	20.5%	37.5%	
Relationship Status								
Single	66.3%	27.8%	5.9%	*	57.6%	27.4%	14.9%	*
In a relationship	71.4%	17.3%	11.3%		58.5%	18.5%	23.0%	
It is complicated	72.0%	16.0%	12.0%		65.3%	16.3%	18.4%	
Migration status								
Native-born	69.7%	21.8%	8.5%		59.9%	22.4%	17.6%	
First generation migrant	82.6%	8.7%	8.7%		47.8%	26.1%	26.1%	
Second generation migrant	63.1%	28.2%	8.7%		55.8%	23.1%	21.2%	
Educational level of parents								
Low	50.0%	42.9%	7.1%	*	60.0%	13.3%	26.7%	*
Medium	60.9%	27.6%	11.5%		43.6%	25.6%	30.8%	
High	73.6%	19.5%	6.9%		65.1%	21.6%	13.3%	
Do not know	37.5%	25.0%	37.5%		58.6%	22.7%	18.7%	
Can borrow 500 euro								
No	67.7%	25.8%	6.5%		58.1%	16.1%	25.8%	
Yes	69.0%	22.2%	8.8%		58.7%	23.1%	18.2%	

- The financial status of female students significantly deteriorated during the COVID-19 outbreak. Before, 66.1% of female students reported that their financial resources were sufficient to cover their monthly costs. During the outbreak the corresponding rate fell to 49.8%.
- Similarly, the financial status of male students deteriorated but to a lesser extent. Before the COVID-19 outbreak, 72.2% of male students reported that they had sufficient resources to cover their monthly costs, whereas during the outbreak the corresponding rate fell to 67.9%.
- There is a strong association between age and the financial capacity of students ($p < 0.05$). Younger students aged between 17-24 felt less confident during the pandemic about the adequacy of their financial resources compared to students aged "25+".
- Students who were in a relationship also worried more than singles, about their finances during the outbreak, although both groups reported that their financial status deteriorated.
- First generation migrant students were more likely to report worse financial status. No significant differences were observed among the other migrant categories.
- There is a strong association between the educational level of students' parents and their own financial capacity. Before the COVID-19 outbreak, 7.1% of students with parents of a low educational background reported that they did not have sufficient resources to cover their monthly costs, whereas during the outbreak this percentage rose to 26.7%. Similarly, before the outbreak, 11.5% of students whose parents had a medium educational background had insufficient resources, whereas during the outbreak this percentage rose to 30.8%. The same pattern was observed among students with a high parental educational background, although to a lesser extent.
- Regardless of their ability to borrow money from their family or social contacts, all students reported that their financial status deteriorated during the pandemic.

Availability of sufficient financial resources to cover monthly costs

The availability of financial resources to cover monthly costs before and during the COVID-19 outbreak is presented in Table 12. The students were asked to what extent they agreed with the statement "I had sufficient financial resources to cover my monthly costs".

TABLE 12: DISTRIBUTION OF SUFFICIENT FINANCIAL RESOURCES TO COVER MONTHLY COSTS

	Before COVID-19 outbreak				During COVID-19 outbreak			
	Agree	Neither agree nor disagree	Disagree	Chi²	Agree	Neither agree nor disagree	Disagree	Chi²
Not relevant, as enrollment is free for all students	69.4%	22.0%	8.6%		58.3%	23.7%	18.0%	
My parents paid (a part of) my tuition	69.5%	22.0%	8.5%		57.6%	27.1%	15.3%	
I paid (a part of) my tuition myself	68.9%	24.4%	6.7%		56.8%	22.7%	20.5%	
I got a scholarship to cover (a part of) my tuition	30.0%	50.0%	20.0%	*	60.0%	20.0%	20.0%	

- The students who paid part of their tuition fees[6] themselves seem less confident regarding the adequacy of their financial resources to cover monthly costs during the outbreak. The share of those who reported that they did not have sufficient financial capacity increased to 20.5% during the outbreak (from 6.7% before the outbreak).

Stressors, informal support and mental well-being

The following section presents the results of the analysis on psychosocial stressors like fear, anxiety, depression and feelings of loneliness and isolation, in relation to informal support, the support provided by family and/or friends. Results indicate that contacts with family and friends as well as social activities during the quarantine contributed positively to student's mental well-being.

Since the implementation of COVID-19 measures both male and female students had more contact with their family than with friends. The younger the students the higher the probability to have more frequent contacts with their family during the quarantine. This behavior is also observed among native-born students who were single and students and whose parents had a higher educational background. Students with parents of low education level were less likely to have frequent contacts with family and/or friends.
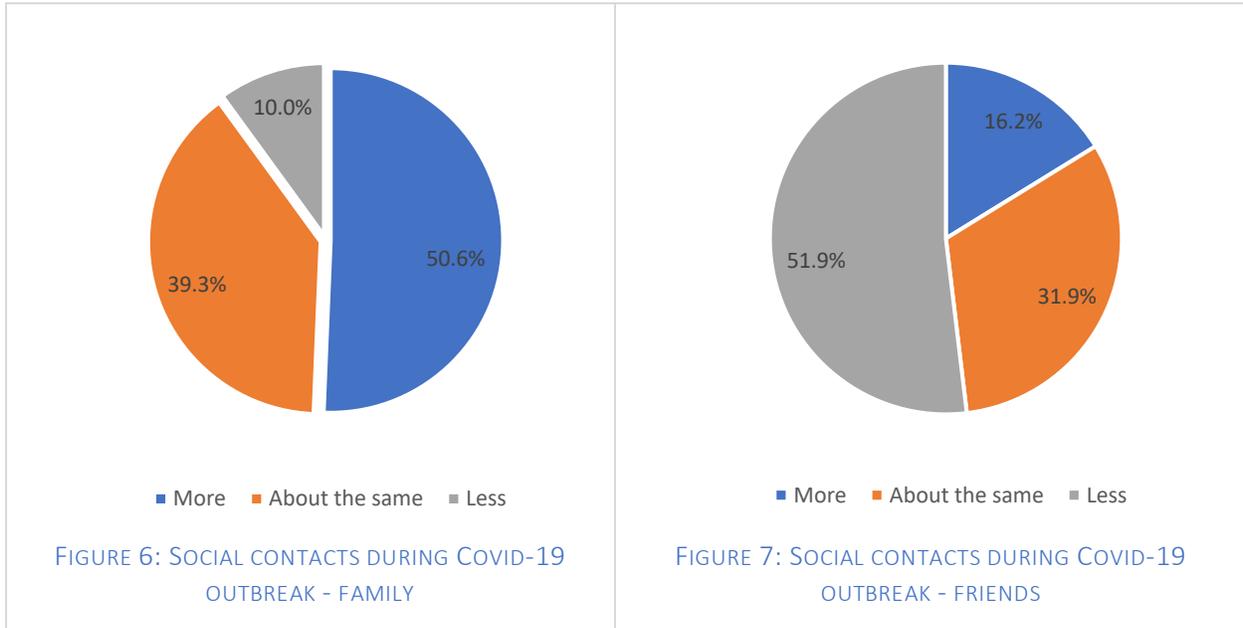
Most students preferred to socialize during the COVID-19 measures by talking over the phone or discussing face to face during a walk.

The feelings of loneliness were not prevalent during the implementation of COVID-19 measures. Most of the students reported "lack of companionship" as the most frequent feeling.

Single students reported the highest mean score of loneliness, whereas students of the age group "25+" were likely to feel less lonely than younger ones.

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[6] It should be noted that the Greek universities do not charge any tuition fees (only private colleges do), but many students have to face a number of expenses related to their studies, such as housing, nutrition and personal expenses.

According to Figures 6 and 7, during the COVID-19 outbreak the majority of students had more contact with their family (50.6%) and less contact with their friends (51.9%).

FIGURE 6: SOCIAL CONTACTS DURING COVID-19 OUTBREAK - FAMILY

FIGURE 7: SOCIAL CONTACTS DURING COVID-19 OUTBREAK - FRIENDS

In the next section, contacts with family and friends are further analyzed by sociodemographic information.

Contacts with family and friends

The analysis of frequency of contact with family and friends by sociodemographic information, presented in Table 13, indicates that:

- Both male and female students reported having more contact with family and less contact with friends during the pandemic. In particular, 53.9% of male students and 48.1% of female students reported getting in touch with family. Only 14.5% of male students and 17.9% of female ones reported contacting friends more often than family. However, the differences between these two groups are not significant.

- Students under 25 years of age had more contacts with family than students of age "25+", while students of the age group "17 to 22" reported less contacts with friends than students of the age groups "23-24" and "25+".

- Single students were more likely to have more contacts with their family (61.8%) and fewer contacts with their friends (55.9%) compared to those in a relationship.

- In terms of migration status, native-born students retained contact with their family during the outbreak to a greater degree (53.9%) compared to first- or second-generation migrant students (30.4% and 40.8% respectively).

- The results by parents' educational background indicate that the higher the educational level of parents is, the more the students contacted their family. Students whose parents were of a low educational level had the lowest frequency of contacts with family (53.3%) and friends (66.7%).

- Students who reported being able to easily borrow 500 euro had more contact with family (51.7%) during the pandemic compared to those who did not had this capacity (33.3%). The level of contact

with friends does not differ between the two groups of students. No significant differences are observed between these two groups.

TABLE 13: CONTACTS WITH FAMILY AND FRIENDS DURING THE COVID-19 OUTBREAK BY SOCIODEMOGRAPHIC INFORMATION

		Family				Friends			
		More	About the same	Less	Chi²	More	About the same	Less	Chi²
Gender									
	Male	53.9%	36.9%	9.2%		14.5%	32.4%	53.0%	
	Female	48.1%	40.7%	11.2%		17.9%	31.2%	50.9%	
Age group									
	17-18	50.0%	35.7%	14.3%	*	17.2%	34.5%	48.3%	*
	19-20	56.8%	39.9%	3.4%		15.0%	23.8%	61.2%	
	21-22	55.6%	35.1%	9.4%		15.1%	23.8%	61.0%	
	23-24	54.0%	40.5%	5.6%		15.7%	51.2%	33.1%	
	25+	31.3%	44.6%	24.1%		19.8%	32.4%	47.7%	
Relationship Status									
	Single	61.8%	31.9%	6.3%	*	17.7%	26.4%	55.9%	
	In a relationship	39.5%	45.2%	15.3%		15.0%	35.6%	49.4%	
	It is complicated	40.8%	53.1%	6.1%		14.0%	44.0%	42.0%	
Migration status									
	Native-born	53.9%	37.1%	9.0%	*	15.3%	33.6%	51.2%	
	First generation migrant	30.4%	52.2%	17.4%		26.1%	30.4%	43.5%	
	Second generation migrant	40.8%	46.6%	12.6%		18.4%	25.2%	56.3%	
Educational level of parents									
	Low	6.7%	40.0%	53.3%	*	6.7%	26.7%	66.7%	*
	Medium	42.3%	41.7%	16.0%		23.7%	31.4%	44.9%	
	High	55.7%	38.2%	6.2%		13.5%	31.8%	54.7%	
	Do not know	37.5%	50.0%	12.5%		33.3%	55.6%	11.1%	
Can borrow 500 euro									
	No	33.3%	53.3%	13.3%		13.3%	36.7%	50.0%	
	Yes	51.7%	38.6%	9.7%		16.4%	31.7%	51.9%	

Social activities and social distancing

According to the data provided in Figure 8 most of the students preferred to talk over the phone or walk during the quarantine. Both activities seem to have been chosen by 76% of students. Moreover, 71% of students reported socializing via video call and chat (62%). Talking on the street was also one of the favorite social activities of students (60%), whereas gaming/quiz and drinks/picnic were preferred by 38% and 30% of students respectively. Online recreational class and bike riding were the less preferred activities, as 17% and 15% of students reported at least one of them as an activity in which they were engaged.
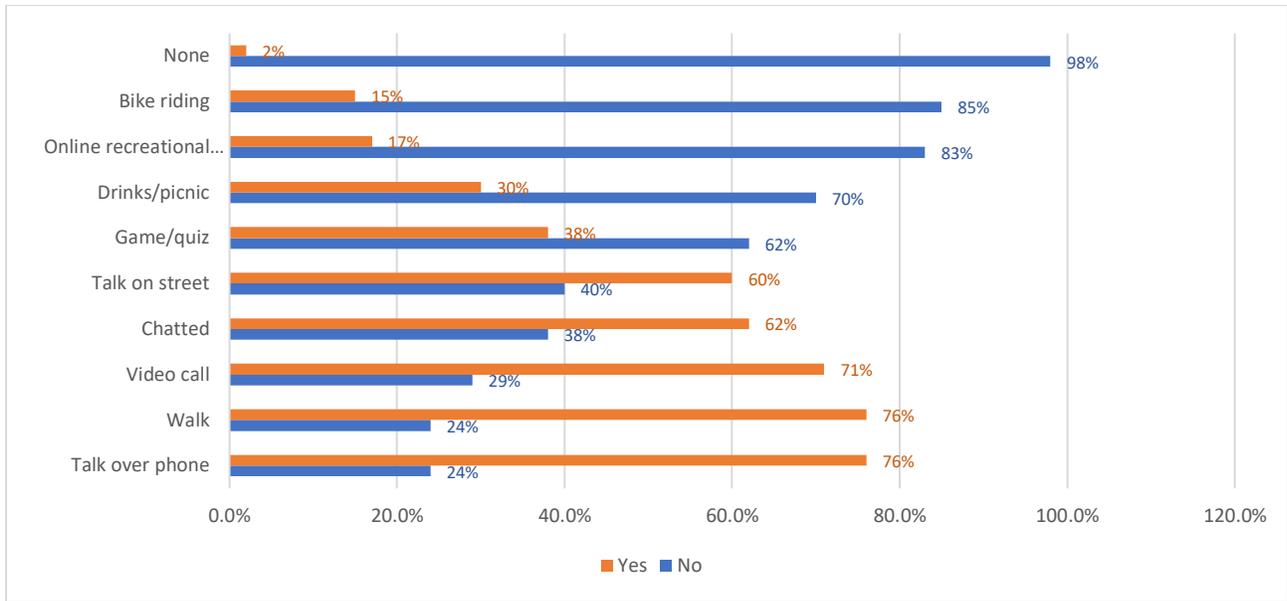
FIGURE 8: FREQUENCY OF SOCIAL ACTIVITIES

Feelings of loneliness

Students were asked to report how much of the time during the quarantine felt lonely, lacked companionship, or felt isolated from others. The results are presented in Figure 9.

- 35.4% of students reported that they rarely felt lonely; 37% of the students felt lonely some of the time and almost 28% most of or all/almost all of the time.
- The lack of companionship was the feeling with the higher frequency among students, more than loneliness or isolation, since about 33% reported that they lacked companionship some of the time and 45.7% stated that they lacked companionship most or all/almost all of the time.
- 30.8% of the students felt isolated some of the time, whereas 30.9% of the students felt isolated most of or all/almost all of the time.
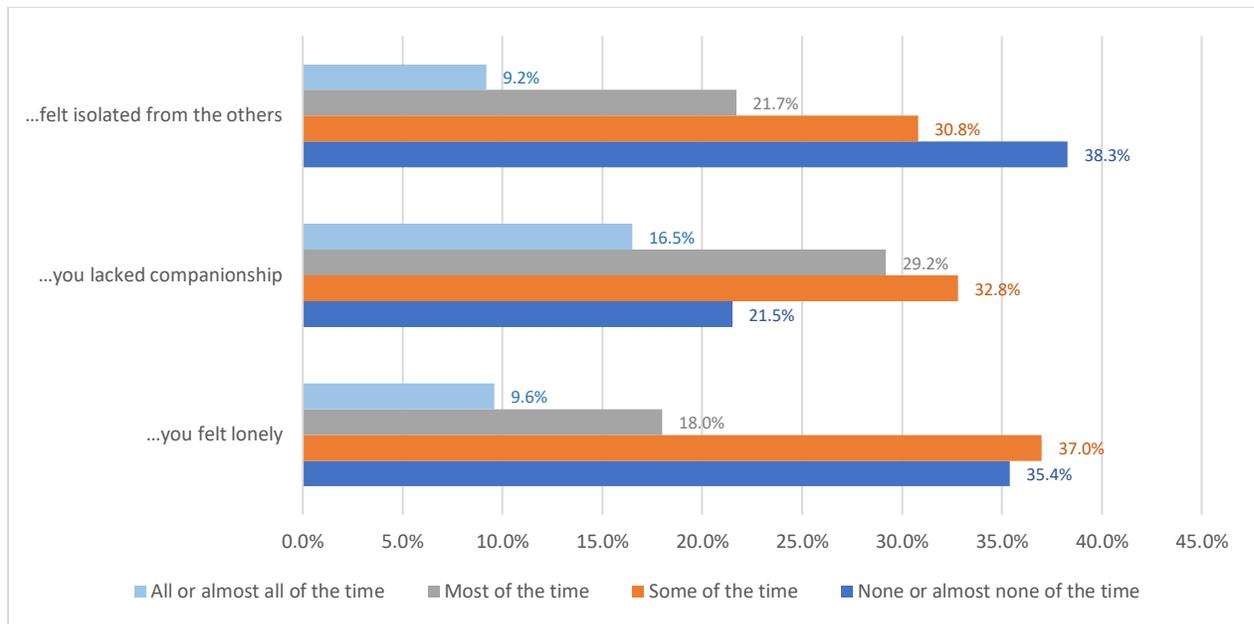
FIGURE 9: FREQUENCY OF FEELINGS OF LONELINESS

Based on the answers provided, an indicator of loneliness has been composed, taking into account the 3 characteristics presented and analyzed above, with a scoring scale ranging between 0 and 9. The mean loneliness score was 3.44 (S.D.=2.5), indicating that students felt lonely "some of the time" during the pandemic (the week preceding the survey). In Table 14 loneliness is analyzed by sociodemographic information. The findings indicate that:

- There is no variation of loneliness according to gender.
- Significant differences were observed between the mean loneliness score of students aged "21-22", which is the highest among all age groups, and students >25 who have the lowest loneliness mean score among all age groups.
- The mean level of loneliness varies significantly between single students and students in a relationship. Single students had the highest mean score (3.93) of loneliness when compared to the other two categories. Students in a relationship had the lowest loneliness mean score.
- No significant differences between the feelings of loneliness and the migration status of students were observed. However, the mean score indicates that first generation migrant students felt lonelier compared to students without a migration background or to second generation migrant students.
- Similarly, no significant differences between the feelings of loneliness and the educational background of students' parents or the ability to borrow 500 euro were observed. However, the mean score indicates that students with parents of a low educational background and students who were not able to borrow money easily, seem to report lower levels of loneliness.

	Mean	S.D.	Sign.
Gender			
Male	3.43	2.45	
Female	3.44	2.61	
Age group			
17-18	3.17	2.69	
19-20	3.53	2.66	
21-22	3.78	2.53	*
23-24	3.53	2.38	
25+	2.79	2.38	*
Relationship Status			
Single	3.93	2.63	*
In a relationship	2.83	2.30	*
It is complicated	3.63	2.38	
Migration status			
Native-born	3.45	0.12	
First generation migrant	4.90	0.52	
Second generation migrant	3.09	0.23	
Educational level of parents			
Low	2.91	0.51	
Medium	3.31	0.20	
High	3.52	0.13	
Do not know	3.32	1.10	
Can borrow 500 euro			
No	3.10	2.32	
Yes	3.46	2.54	

Depressive Symptoms

In general, students reported having many depressive symptoms in the week preceding the survey.

Female students, singles, and first-generation migrant students reported higher rates of depressive symptoms. The ability to borrow money does not seem to affect students' depression score.

Students who were in their first year of studies reported significantly higher rates of depressive symptoms. Study program or field of study do not seem to be associated with depressive symptoms.

Depression scores seem to be affected by the degree of contacts with friends, as well as with the availability of a trustworthy person to discuss intimate matters with. The survey results indicate that the fewer the contacts with friends are, the higher the mean depression score is. The mean depression score was higher for those who did not have a trustworthy person to discuss with.

The survey results indicate that on a scale from 0 to 16 the mean depression score is 9.72 with a deviation of 4 units.

Depression was measured with the abbreviated version of the Center for Epidemiological Studies Depression Scale (CESD-8). This is a commonly used indicator in research among the general population, with an established validity and reliability. Students were asked to report how many times during the past week they

experienced each one of the 8 items in the CESD scale. It is important to note that the values for the items 'you were happy' and 'you enjoyed life' are reversed indicating negative feelings. The results of the analysis are presented in Figure 10.

According to the analysis:

- 40.4% of the students felt that everything was an effort, whereas 33.6% reported depressive symptoms most of the time or all/almost all the time.
- Less than 30% of students reported feeling lonely or sad, or experiencing restless sleep most of the time or all/almost all the time during the past week. In particular, 27.6% of students felt lonely, 24.6% felt sad and 26.8% reported that their sleep was restless most or all/almost all the time.
- 16.2% of the students mentioned that they could not get going most or all/almost all of the time during the past week.
- 19% of the students reported never or almost never enjoying life whereas 8.3% said they never or almost never felt happy during the past week.
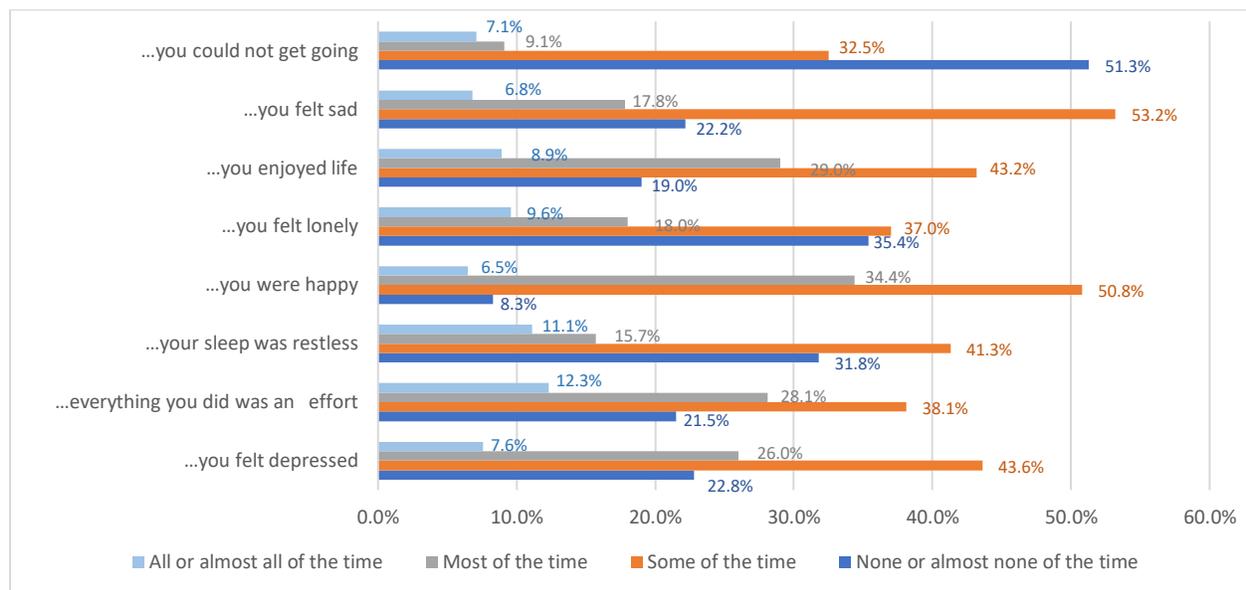

Figure 10: Frequency of depressive symptoms (during last week)

Depressive symptoms by sociodemographic information

The above mentioned 8 items of depression form the depression indicator, with a scoring scale ranging from 0 to 16. The higher the depression score is, the higher the indication of depression is. The mean depression score is equal to 9.72, indicating that most of the students reported having depressive symptoms during the COVID-19 pandemic.

Table 15 presents the mean score of depression by sociodemographic information.

The results confirm the high prevalence of depression among women (Van de Velde, et.al, 2010) especially in Greece (Stathopoulou et al. 2018a, Gkiouleka et.al 2018).

- Female students reported significantly higher rates of depressive symptoms than their male counterparts.
- Depression does not vary significantly across age groups, but the mean scores show that younger students reported higher rates of depression.
- Relationship status seems to be associated with depressive symptoms. Single students reported higher rates of depressive symptoms than those in a relationship or those who defined their relationship as complicated.
- First generation migrant students reported more depressive symptoms than non-migrant and second-generation migrant students. Furthermore, mean depression scores differ significantly (p<0.05) between first generation (highest score) and second-generation migrants (lowest score).
- The lower the educational background of parents is, the lower the mean depression score of students. Students whose parents had low education reported significantly fewer depressive symptoms compared to those with parents of a higher educational background.
- The ability to borrow money does not seem to be associated with depression.

TABLE 15: DEPRESSIVE SYMPTOMS BY SOCIODEMOGRAPHIC INFORMATION

	Mean	S.D.	Sign.
Gender			
Male	9.52	4.39	*
Female	9.79	4.88	
Age group			
17-18	10.89	4.56	
19-20	10.07	4.57	
21-22	9.66	4.87	
23-24	9.01	4.64	
25+	9.86	4.59	
Relationship Status			
Single	10.33	4.78	*
In a relationship	9.12	4.63	*
It is complicated	9.18	3.93	
Migration status			
Native-born	9.82	4.59	
First generation migrant	12.16	6.27	*
Second generation migrant	8.72	4.51	*
Educational level of parents			
Low	7.18	3.38	*
Medium	9.32	4.32	
High	9.92	4.84	
Do not know	12.09	3.42	
Can borrow 500 euro			
No	10.08	4.55	
Yes	9.70	4.70	

*p<0.05

Depressive symptoms by study related information

Table 16 shows the mean scores of depressive symptoms by study related information.

- The students who were in the first year of their studies reported significantly higher rates of depression compared to all other students.
- Mean depression scores do not differ significantly among students in relation to the study program, or the field of study.
- PhD student's depression scores seem to be higher than students enrolled in other study programs, while students in the field of "Social Sciences", "Agriculture" and "Health" reported the lowest mean depression scores. However, the differences observed were not statistically significant.

TABLE 16: DEPRESSIVE SYMPTOMS BY STUDY RELATED INFORMATION

	Mean	S.D.	Sign.
First year of study			
Yes	10.51	4.46	*
No	9.49	4.73	
Study Program			
Bachelor	9.72	4.71	
Master	9.78	4.62	
PhD	10.15	4.74	
Other	7.77	2.98	
Field of study			
Education	10.63	4.91	
Humanities and Arts	10.84	4.41	
Social sciences, business, and law	8.90	4.84	
Science	10.56	5.28	
Engineering, manufacturing, and construction	10.50	3.98	
Agriculture	8.88	5.07	
Health and welfare	8.80	4.54	
Services	14.67	4.47	
Other	11	6.08	
Any combination of the above	9.13	4.26	

*p<0.05

Depressive symptoms, social contacts and social support

Depressive symptoms were further analyzed in relation to contact with family and social support. Table 17 indicates that students' depression is not associated with the frequency of contacts with family. However, it seems that contacts with friends and the existence of trustworthy people to discuss personal matters, is associated with the depression scores of students.

- The less students have contact with friends the higher the mean depression score is.
- The mean depression score is higher for students who did not have someone to trust for discussion.

	Mean	S.D.	Sign.
Contact with family			
More	9.94	4.77	
About the same	9.43	4.59	
Less	9.74	4.64	
Contact with friends			
More	9.78	4.62	
About the same	8.73	4.38	*
Less	10.31	4.80	*
Other to trust for discussion			
Yes	9.39	4.63	*
No	13.12	3.90	

*p<0.05

Anxiety and depressive symptoms in relation to perceived risk of infection

Students who were more anxious about getting infected with COVID-19 reported higher rates of depressive symptoms. However, students with slightly higher rates of depression were not very worried about getting severely ill from an infection with COVID-19.

The lack of physical activity is likely to increase the frequency depressive symptoms.

Smoking and drinking are linked to depression. People with depression smoke more than people without depression. A small number of students drink systematically; however, they do not seem to report higher rates of depressive symptoms.

Regular and stable contact with family and friends is important to well-being. Students who continued interacting with family and friends before and during the COVID-19 outbreak reported lower levels of depression.

Depression in relation to perceived risk of infection

When examining the association of depression with the levels of anxiety of getting infected with the virus, we find that those who were most anxious reported the higher rates of depression (Figure 11).

When we examine the extent of perceived risk of getting severely ill if infected, the picture is slightly different (Figure 12); in this case the majority of students with depression is slightly higher than average, regardless of the degree of anxiety of getting severely if infected with COVID-19. Nevertheless, there is a small number of students that felt very anxious about getting infected, without reporting high rates of depressive symptoms.
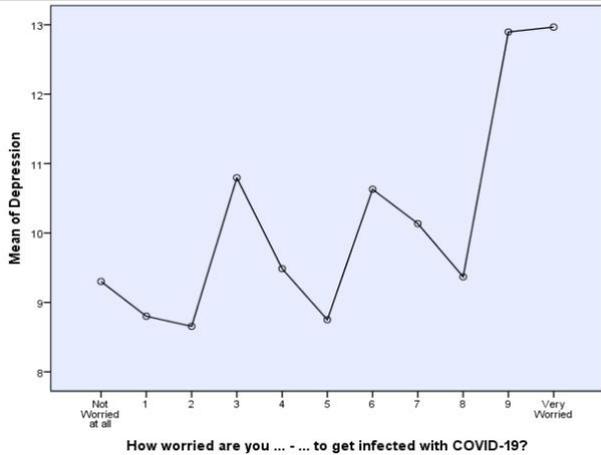
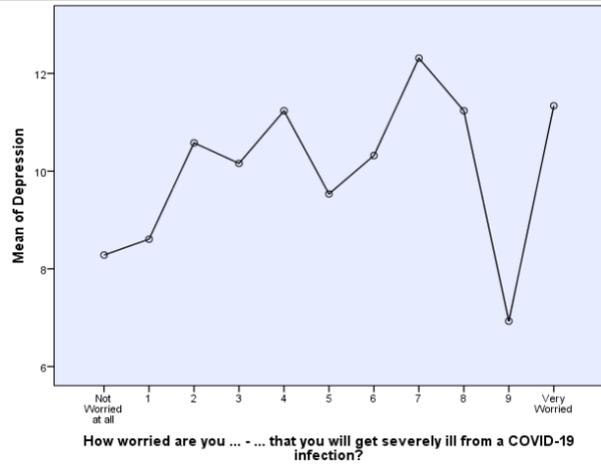FIGURE 11: DEPRESSION IN RELATION TO WORRY OF INFECTION WITH COVID-19

FIGURE 12: DEPRESSION IN RELATION TO WORRY OF SEVERE ILLNESS FROM A COVID-19 INFECTION

Depression in relation to physical activity

Research indicates that physical activity is associated with decreased prevalence of depression (Lee et al. 2012, Schuch, et al. 2016). As seen in Figures 13 and 14 vigorous and moderate (Figures 15 and 16) physical activity can increase the risk of reporting depression.
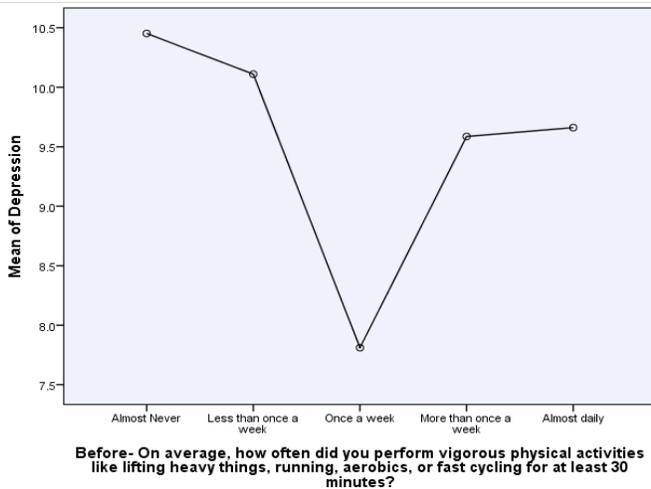

FIGURE 13: DEPRESSION IN RELATION TO LEVEL OF VIGOROUS PHYSICAL ACTIVITY BEFORE THE COVID-19 OUTBREAK
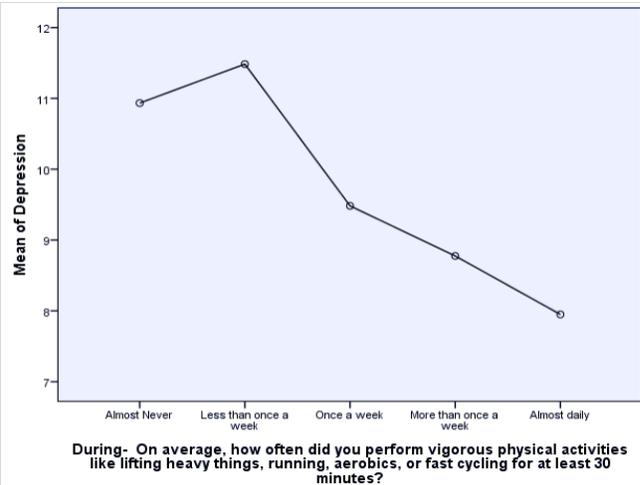
FIGURE 14: DEPRESSION IN RELATION TO LEVEL OF VIGOROUS PHYSICAL ACTIVITY DURING THE COVID-19 OUTBREAK
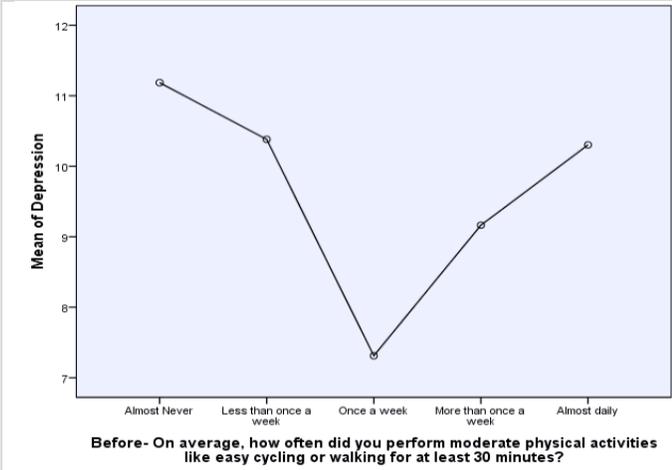
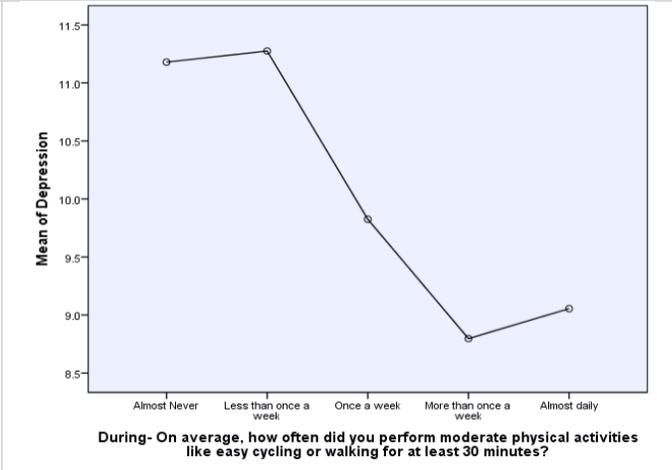FIGURE 15: DEPRESSION IN RELATION TO LEVEL OF MODERATE PHYSICAL ACTIVITY BEFORE THE COVID-19 OUTBREAK

FIGURE 16: DEPRESSION IN RELATION TO LEVEL OF MODERATE PHYSICAL ACTIVITY DURING THE COVID-19 OUTBREAK

Depression in relation to smoking

There is also significant evidence of a positive association between smoking and depression (Fluharty et.al 2017). People with depression are more likely to smoke more than people without depression. The findings of our study seem to confirm this. Figures 17 and 18 clearly illustrate that before and during the pandemic, students who almost never smoked reported lower rates of depression.
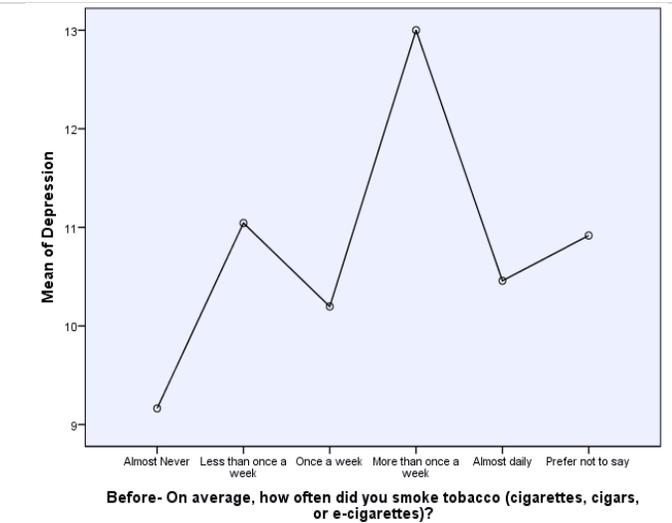

FIGURE 17: DEPRESSION IN RELATION TO SMOKING BEFORE THE COVID-19 OUTBREAK
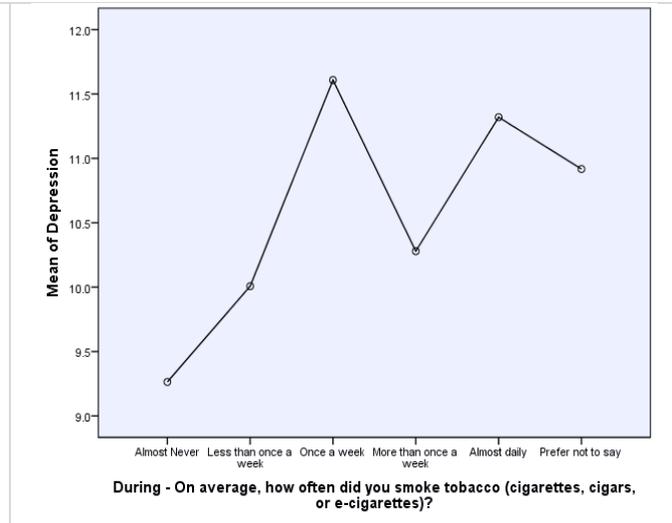

FIGURE 18: DEPRESSION IN RELATION TO SMOKING DURING THE COVID-19 OUTBREAK

Depression in relation to drinking

Only a small percentage of students drink systematically (more than six glasses of alcohol per day). These students reported higher rates of depressive symptoms (Figures 19 and 20).
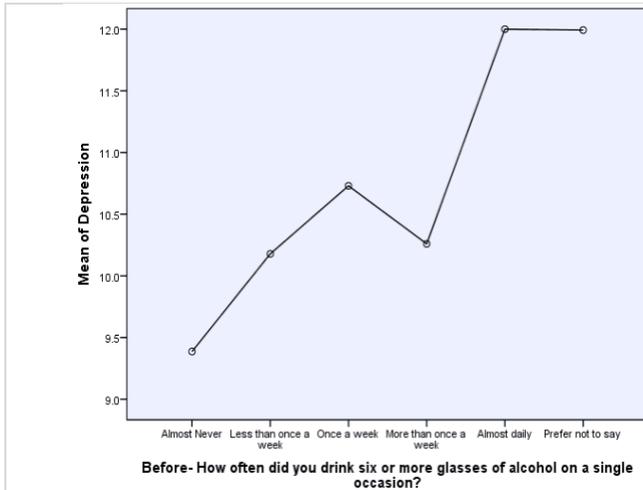

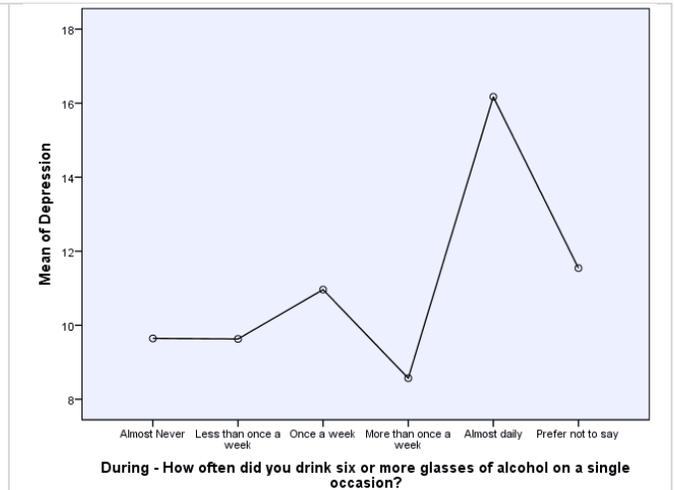FIGURE 19: DEPRESSION IN RELATION TO DRINKING BEFORE THE COVID-19 OUTBREAK

FIGURE 20: DEPRESSION IN RELATION TO DRINKING DURING THE COVID-19 OUTBREAK

Depression in relation to social activity and contacts

Looking at depression in relation to the social activity of respondents since the implementation of COVID-19 measures, we observe that students who continued interacting with family and friends as frequently as before the quarantine, had lower rates of depression, compared to those who reported having more or having less interaction with family and friends (Figures 21 and 22) during the same period.
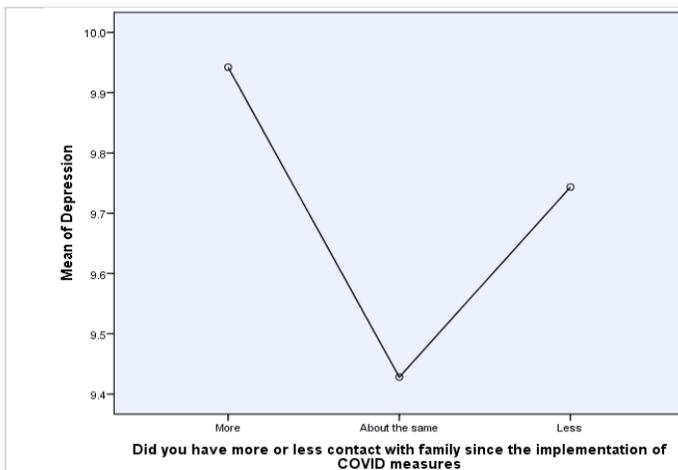

FIGURE 21: DEPRESSION IN RELATION TO CONTACT WITH FAMILY BEFORE THE COVID-19 OUTBREAK
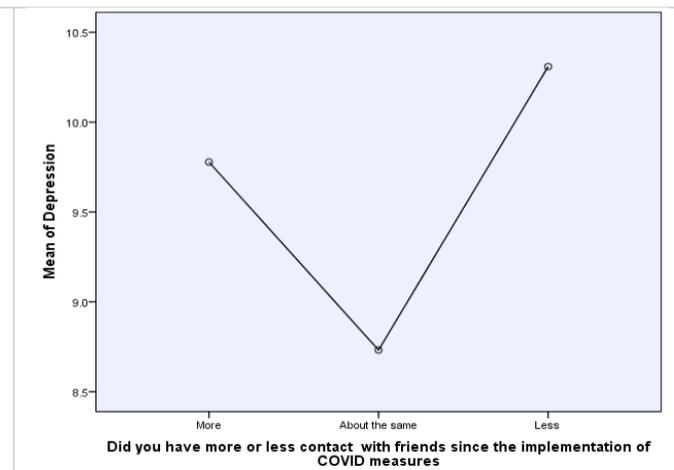
FIGURE 22: DEPRESSION IN RELATION TO CONTACT WITH FAMILY DURING THE COVID-19 OUTBREAK

Consumption of alcohol & tobacco

In the section below we present the results of the analysis regarding alcohol consumption and smoking before and during the COVID-19 outbreak.

Alcohol consumption decreased during the COVID-19 outbreak, although drinking was not a popular habit among higher education students even before the COVID-19 outbreak. Alcohol consumption is only associated with the age and the parental educational background of students.

There is a decrease of approximately 5% in the proportion of students smoking tobacco during COVID-19, compared to the period before the outbreak. This decrease is more pronounced among students who smoked less than once a week before COVID-19.

During the outbreak, smoking on a daily basis slightly increased, whereas the share of students who reported that they "almost never" smoke tobacco increased from approximately 70% to 75%. Smoking is related to all sociodemographic parameters both before and during the pandemic, except for the parental educational background and the ability to borrow money from family and/or friends. The results show that both male and female students slightly increased daily smoking during the outbreak.

The younger the students are, the higher is the possibility to be non-smokers. Non-migrant students were more likely to reduce the use of tobacco during the outbreak. Tobacco use is associated with the parental educational background and the ability to borrow money, but only before the outbreak. A higher educational background of parents is associated with more frequent smoking behavior both before and during the COVID-19 outbreak. Students who were not able to borrow money from anyone were more likely to be daily smokers.

Alcohol consumption

Figures 23 & 24 present the results regarding alcohol consumption by students before and after the COVID-19 outbreak. The main findings are:

- Drinking is not a popular habit among students although the prevalence of alcohol consumption is high in Greece (Stathopoulou 2004). Recent evidence has shown that Greece "is among the highest-ranking countries [in Europe] in terms of smoking and drinking behavior" (Stathopoulou et al. 2018b:11). According to WHO (2018:7) "Notable exceptions [to trends observed] in most EU+ countries, were Spain, Cyprus and Greece, where reductions in recorded alcohol consumption were substantially counterbalanced by increases in unrecorded alcohol consumption".
- During the COVID-19 outbreak, alcohol consumption decreased.
- The percentage of students who almost never drunk six or more glasses of alcohol on a single occasion increased from 66.8% before the COVID –19 outbreak to 79.2% during the outbreak. The percentage of those who used to drink 6 or more glasses on a single occasion once or less than once a week, decreased from 30.3% to 18.4%. The share of students who drunk six or more glasses more than once a week or daily did not change during the COVID-19 outbreak, however their rate is very low (0% - 2.2%).
- Before the COVID-19 outbreak most of the students (38.5%) drunk one to two glasses of alcohol a week, whereas approximately 22% did not drink at all. During the outbreak, 26.6% of students drunk 1 or 2 glasses of alcohol a week, whereas approximately 46% reported that they did not drink at all.
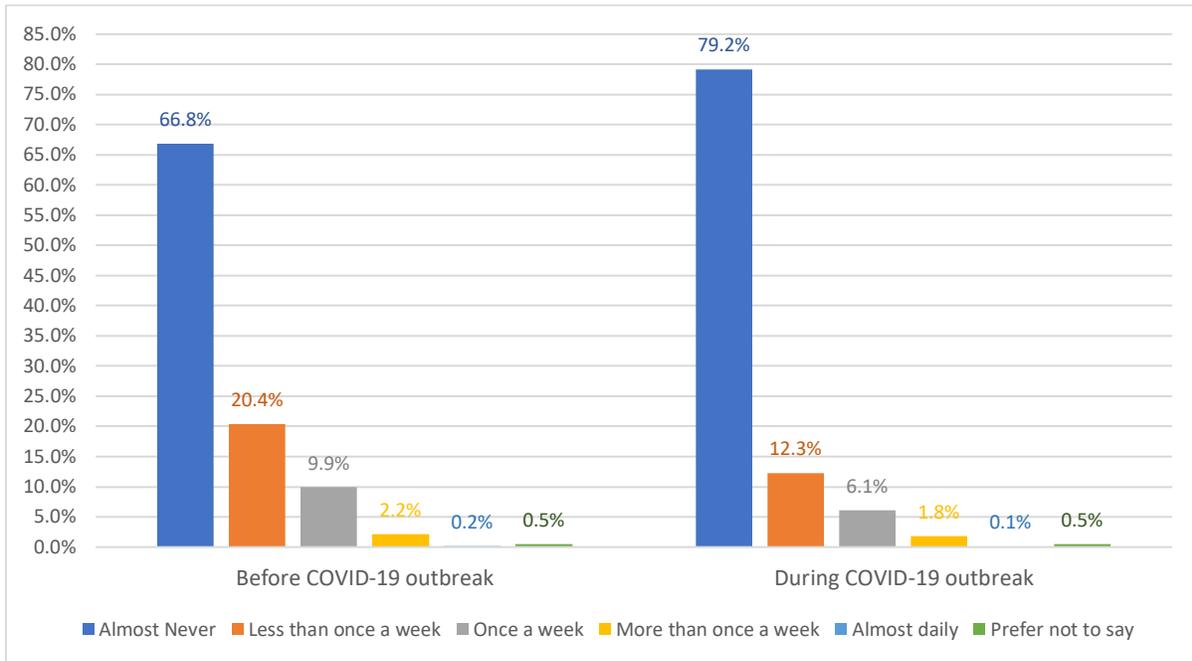
FIGURE 23: FREQUENCY OF ALCOHOL CONSUMPTION BEFORE AND DURING COVID-19 OUTBREAK
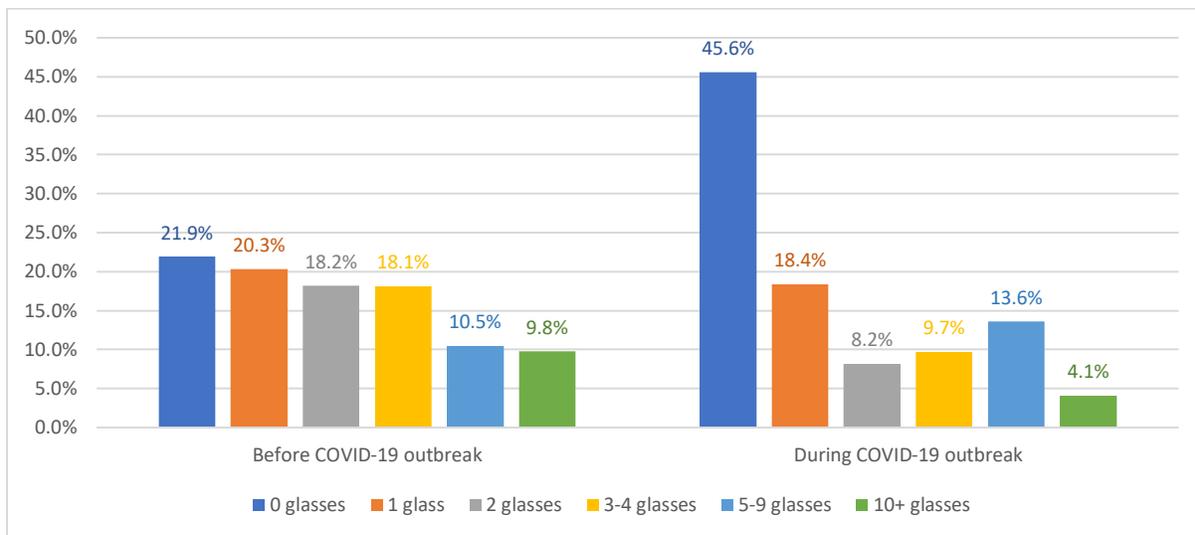
FIGURE 24: FREQUENCY OF ALCOHOL CONSUMPTION BEFORE AND DURING COVID-19 OUTBREAK (NUMBER OF GLASSES ON A SINGLE OCCASION)

The results of the analysis on alcohol consumption by sociodemographic information are presented in Table 18. The main findings are:

- The percentage of male students who almost never drunk six or more glasses of alcohol on a single occasion increased from 64.5% before the COVID –19 outbreak to 73.6% during the outbreak. For female students, this increase is more prominent as the share of female students who almost never

drunk six or more glasses of alcohol on a single occasion increased from 68.9% before the outbreak to 84.6% during the outbreak.

- The percentage of male students who drunk six or more glasses of alcohol on a single occasion decreased from 33.2% before the outbreak to 24% during the outbreak. For female students, this decrease is more prominent: the percentage of female students who drunk six or more glasses of alcohol on a single occasion once or less than once in a week decreased from 27.6% before the COVID −19 outbreak to 12.6% during the outbreak.

- Among all age groups drinking became a less frequent habit during the pandemic. Frequency and amount of drinking seems to be related to age. Before the COVID-19 outbreak students younger than 25 years old were more likely to drink 6 or more glasses of alcohol once or less than once a week, than students of age "25+". However, during the COVID-19 pandemic students of age 17-18 were more likely than other age groups to stop drinking completely, whereas the share of students aged "25+" who reported drinking 6 or more glasses of alcohol less than once a week increased from 5.4% to 12.6%.

- Both before and during the COVID-19 outbreak first generation migrant students were more likely to drink more often than students without a migrant background or second-generation migrant students.

- Students with parents of a low educational background were more likely to drink less than students whose parents have a higher educational level, both before and during the pandemic. During the outbreak all students of different parental educational backgrounds were more likely to drink less. The educational background of parents seems to be associated with the drinking behavior of students.

- No significant differences between the ability to borrow money and alcohol consumption were observed. However, both students who could borrow 500 euro and those who could not, decreased alcohol consumption after the COVID-19 outbreak.

	Before COVID-19 outbreak							During COVID-19 outbreak						
	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Prefer not to say	Chi²	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Prefer not to say	Chi²
Gender														
Male	64.5%	19.3%	13.9%	2%	0%	0.3%		73.6%	16.9%	7.1%	2%	0%	0.3%	
Female	68.9%	21.3%	6.3%	2.4%	0.3%	0.7%		84.6%	7.7%	4.9%	1.8%	0.4%	0.7%	
Age group														
17-18	60.7%	35.7%	0.0%	3.6%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	*
19-20	62.8%	22.3%	9.5%	4.1%	0.0%	1.4%		78.4%	5.4%	12.2%	3.4%	0.0%	0.7%	
21-22	57.3%	23.4%	16.4%	2.3%	0.6%	0.0%		77.1%	17.1%	5.3%	0.6%	0.0%	0.0%	
23-24	69.3%	23.6%	5.5%	1.6%	0.0%	0.0%		75.8%	16.4%	4.7%	3.1%	0.0%	0.0%	
25+	84.8%	5.4%	8.0%	0.9%	0.0%	0.9%		82.9%	12.6%	3.6%	0.0%	0.0%	0.9%	
Migration status														
Native-born	67.8%	19.8%	9.2%	2.6%	0.2%	0.4%		81.0%	12.9%	3.9%	1.5%	0.2%	0.4%	
First generation migrant	60.9%	39.1%	0.0%	0.0%	0.0%	0.0%		56.5%	26.1%	13.0%	4.3%	0.0%	0.0%	
Second generation migrant	63.5%	18.3%	15.4%	1.0%	0.0%	1.9%		75.7%	6.8%	13.6%	2.9%	0.0%	1.0%	
Educational level of parents														
Low	93.3%	6.7%	0.0%	0.0%	0.0%	0.0%	*	93.3%	0.0%	6.7%	0.0%	0.0%	0.0%	*
Medium	64.1%	16.0%	16.0%	3.2%	0.0%	0.6%		78.7%	14.8%	2.6%	3.2%	0.0%	0.6%	
High	66.7%	23.0%	8.1%	1.7%	0.2%	0.2%		79.2%	11.9%	7.7%	1.2%	0.0%	0.0%	
Do not know	66.7%	11.1%	0.0%	11.1%	0.0%	11.1%		77.8%	11.1%	0.0%	0.0%	0.0%	11.1%	
Can borrow 500 euro														
No	61.3%	29.0%	6.5%	3.2%	0.0%	0.0%		71.0%	25.8%	3.2%	0.0%	0.0%	0.0%	
Yes	67.0%	20.0%	10.1%	2.2%	0.2%	0.5%		79.5%	11.5%	6.3%	2.0%	0.2%	0.5%	

Smoking behavior

In this section, the smoking behavior of students before and during the COVID-19 outbreak is presented. Figure 25 shows that during the outbreak smoking on a daily basis slightly increased from 15.5% to 17.7%, whereas the share of students who reported that they "almost never" smoke tobacco also increased from 69.6% to 74.5%. As noted above (p.38) Greece is among the highest-ranking European countries in smoking.
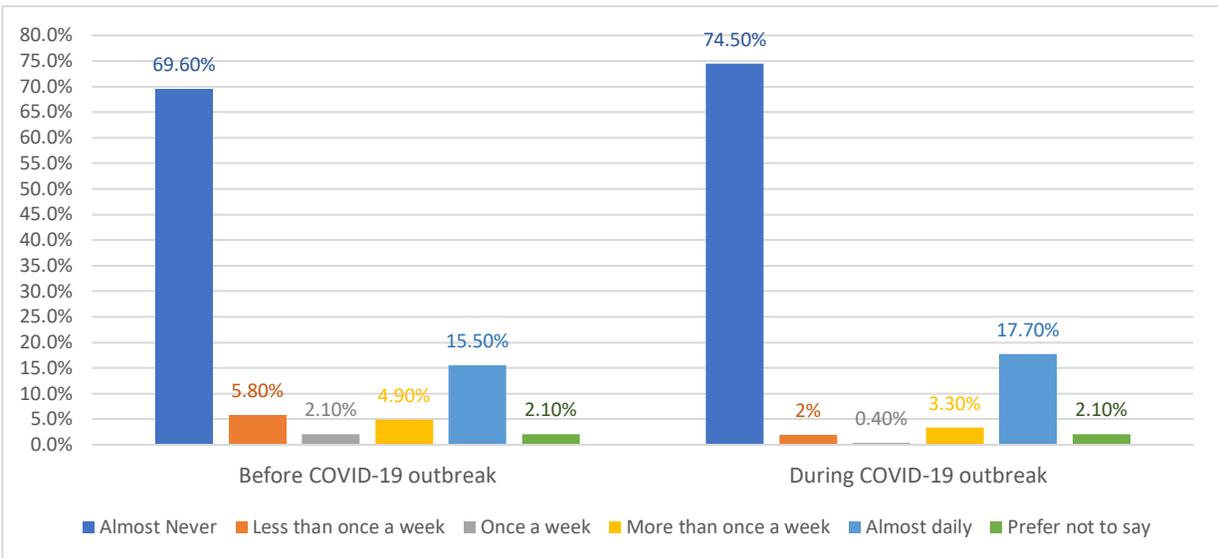

FIGURE 25: FREQUENCY OF SMOKING

The analysis by sociodemographic information shows that smoking behavior before and during the quarantine is related to gender, age, migration status, parents' educational background and the ability to borrow money from family and/or friends. According to the findings presented in Table 19:

- Daily smokers of both genders slightly increased smoking during the COVID-19 outbreak. Although male students seem to be to a larger degree daily smoker, they were more likely than female students to stop smoking during the quarantine.
- The younger the age group to which students belong, the higher the possibility to be non-smokers. Students of age 17-18 and 19-20 years were the least frequent smokers, both before and during the quarantine. More than 90% of students aged "17-18" reported that they almost never smoke. The rate of 17-18-year-old non-smokers reached 96.4% during the pandemic. The use of tobacco decreased among all age groups with the highest decrease observed in the age group "21-22". The rate of daily smokers increased substantially, during the quarantine, among the age group "23-24" (from 16.5% to 27.2%) and the age group "25+" (from 20.5% to 25.9%).
- Students without a migrant background were more likely to decrease the use of tobacco during the quarantine. Second generation migrant students were also likely to reduce the use of tobacco but to a smaller extent than native-born ones. The use of tobacco increased among first generation migrant students during the COVID-19 outbreak. The share of first-generation migrant students who reported

that they "almost never" smoke dropped from 73.9% to 69.6% during the quarantine, whereas the rate of daily smokers increased from 8.7% to 13%.

- Tobacco use is associated with the parental education background and the ability to borrow money only regarding the period before the COVID-19 outbreak. However, the results indicate that students whose parents were of a high educational background were less likely to be non-smokers, both before and during the outbreak. Additionally, students with no ability to borrow money were more likely to be daily smokers than students who could borrow money. The share of daily smokers in this group is 36.7%. However, during the COVID-19 outbreak students of both categories reduced smoking.

TABLE 19: SMOKING BY SOCIODEMOGRAPHIC INFORMATION

	Before COVID-19 outbreak							During COVID-19 outbreak						
	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Prefer not to say	Chi²	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Prefer not to say	Chi²
Gender														
Male	68.5%	7.5%	0.7%	3.4%	19%	1%	*	76%	1.4%	0%	2%	19.6%	1%	*
Female	71.1%	3.9%	3.5%	6.3%	11.6%	3.5%		73.3%	2.1%	0.7%	4.9%	15.4%	3.5%	
Age group														
17-18	93.1%	0.0%	0.0%	3.4%	3.4%	0.0%	*	96.4%	0.0%	3.6%	0.0%	0.0%	0.0%	*
19-20	83.7%	2.7%	2.0%	3.4%	7.5%	0.7%		83.8%	2.0%	0.7%	4.7%	8.1%	0.7%	
21-22	62.0%	9.4%	1.2%	2.9%	19.9%	4.7%		73.1%	2.9%	0.6%	1.8%	17.0%	4.7%	
23-24	63.8%	8.7%	3.9%	6.3%	16.5%	0.8%		66.4%	0.0%	0.0%	5.6%	27.2%	0.8%	
25+	63.4%	3.6%	1.8%	8.0%	20.5%	2.7%		67.9%	2.7%	0.0%	0.9%	25.9%	2.7%	
Migration status														
Native-born	68.0%	7.2%	2.2%	5.7%	15.5%	1.5%	*	74.3%	2.0%	0.4%	2.6%	19.2%	1.5%	*
First generation migrant	73.9%	0.0%	4.3%	0.0%	8.7%	13.0%		69.6%	4.3%	0.0%	0.0%	13.0%	13.0%	
Second generation migrant	75.0%	1.0%	1.0%	2.9%	17.3%	2.9%		76.0%	1.9%	0.0%	7.7%	11.5%	2.9%	
Educational level of parents														
Low	86.7%	0.0%	0.0%	0.0%	13.3%	0.0%	*	80.0%	0.0%	0.0%	6.7%	13.3%	0.0%	
Medium	71.8%	4.5%	0.6%	10.3%	12.2%	0.6%		78.8%	3.2%	0.6%	1.9%	14.7%	0.6%	
High	68.7%	6.4%	2.7%	2.5%	17.2%	2.5%		73.2%	1.5%	0.5%	3.9%	18.5%	2.5%	
Do not know	44.4%	11.1%	0.0%	33.3%	0.0%	11.1%		44.4%	11.1%	0.0%	0.0%	33.3%	11.1%	
Can borrow 500 euro														
No	50.0%	3.3%	3.3%	3.3%	36.7%	3.3%	*	60.0%	0.0%	0.0%	0.0%	36.7%	3.3%	
Yes	70.8%	5.8%	2.2%	5.1%	14.3%	2.0%		75.5%	2.0%	0.4%	3.4%	16.8%	2.0%	

Physical Activity

The frequency of physical activities – both vigorous and moderate – has changed significantly due to the COVID-19 outbreak. Students who performed vigorous activities such as lifting heavy things, running, aerobics or fast cycling increased the frequency of their daily activity. Students who performed moderate activities such as easy cycling or walking have decreased the frequency of their daily activity.

Figures 26 and 27 present the results regarding vigorous and moderate physical activity before and during the COVID-19 outbreak.

The key findings are as follows:
- The respondents who (almost) never exercised or exercised less than once a week did not significantly change their habits during the COVID-19 outbreak.
- The share of respondents who (almost) never performed vigorous or moderate physical activities before the outbreak was approximately 33% and 12% respectively and remained stable during the COVID-19 outbreak.
- The share of respondents who rarely performed vigorous or moderate physical activities (once a week or less) slightly increased by about 2% (i.e. respondents who performed moderate or vigorous physical activities less than once a week increased by 2% and 1% respectively during the outbreak).
- The students who performed vigorous physical activities systematically (more than once a week) increased their physical activities during the pandemic to (almost) daily.
- Those who performed vigorous physical activities more than once a week decreased their activity from 29.3% before the outbreak to almost 25% during the outbreak. By contrast, the share of students who performed vigorous physical activities (almost) daily increased from 14.7% before the COVID-19 outbreak to 18.7% during the outbreak.
- Interestingly, the opposite behavior is observed among students who performed moderate physical activities. That is, students who performed moderate physical activities (almost) daily decreased their physical activities during the outbreak from (almost) daily to more than once a week
- In particular, the share of students who performed moderate physical activities more than once a week increased from 25% before the outbreak to 30.6% during the outbreak. On the contrary, the share of students who performed moderate physical activities (almost) daily decreased from 34.4% before the outbreak to 25.5% during the outbreak.
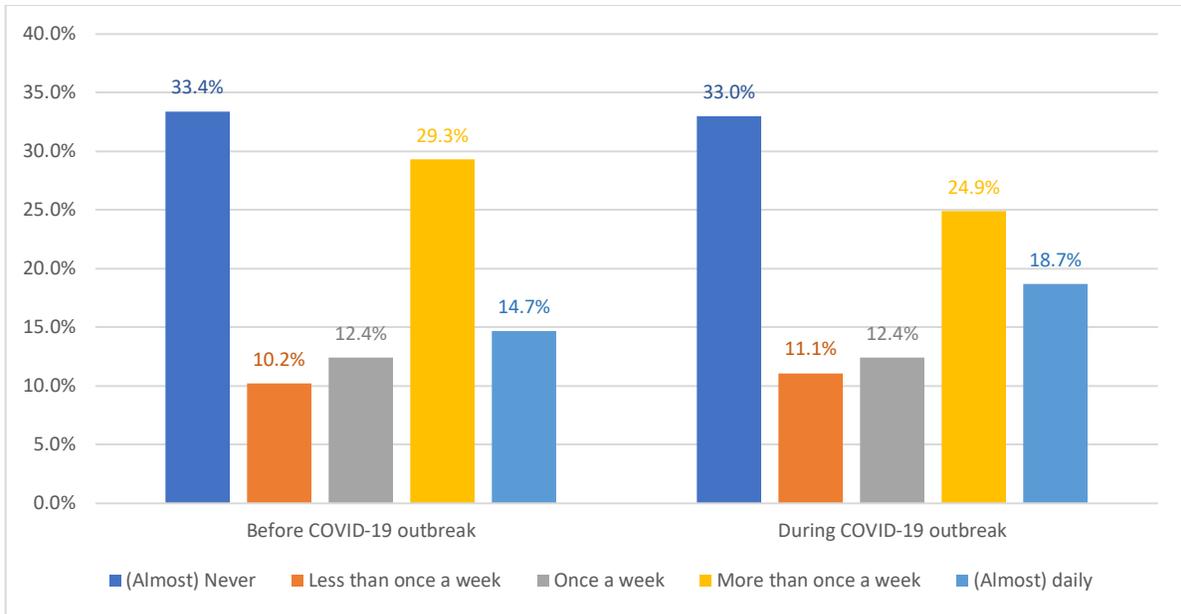
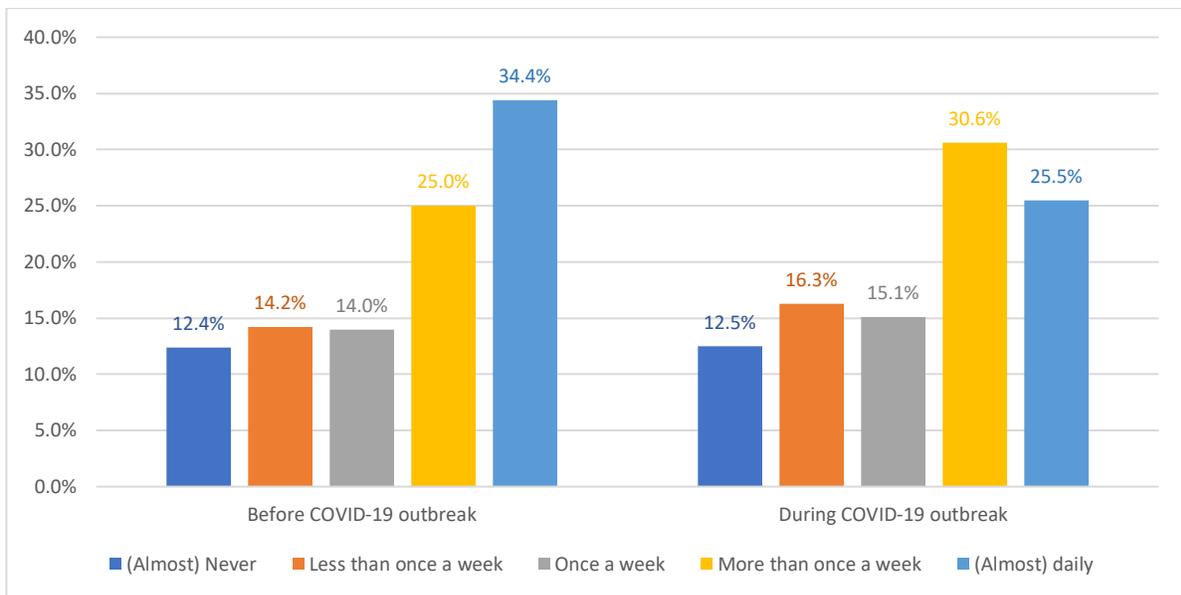FIGURE 26: FREQUENCY OF VIGOROUS PHYSICAL ACTIVITY BEFORE AND DURING COVID-19

FIGURE 27: FREQUENCY OF MODERATE PHYSICAL ACTIVITY BEFORE AND DURING COVID-19

Vigorous physical activity by sociodemographic information

The results of the analysis on vigorous physical activity by sociodemographic information are presented in Table 20. The main findings are:

- Female students increased daily vigorous physical activity during the quarantine (from 11.9% to 21.8%) whereas the opposite trend is observed for men (from 17.2% to 15.9%). It seems that some female

students who exercised vigorously more than once a week before the quarantine increased vigorous exercise to almost daily during the outbreak.

- Physical activity before and during the COVID-19 outbreak is related to age. Younger students (up to 20 years old) noticeably decreased their daily vigorous exercise to a more than once a week vigorous exercise during the outbreak.

- Younger students (age group 17-18) decreased their daily vigorous exercise (from 29.6% to 10.7%) and increased their vigorous exercise to "more than once a week" (from 3.7% to 32.1%) during the quarantine. The same trend can be observed among the age group 19-20 but to a smaller extent. Students belonging to age group 21-24 increased their daily vigorous exercise during the quarantine and decreased the performance of vigorous exercise more than once a week during the outbreak. Finally, the older students (25+) seem to exercise less than the younger ones. During the outbreak the rate of older students who (almost) never exercised, or exercised less than once a week, increased from 41.1% to 45.5% and from 7.1% to 13.4% respectively.

- Physical activity before and during the outbreak is also related to relationship status. Students who were in a "complicated" relationship have increased their daily vigorous physical activity during the quarantine from 12.2% to 32.7%. On the contrary, they have decreased their "more than once a week" vigorous physical activity from 55.1% to 32.7%.

- The percentage of first-generation migrant students who (almost) never exercised vigorously increased from 21.7% to 30.4%, whereas the percentage of those who exercised more than once a week decreased from 52.2% to 39.1%. For second generation migrant students, the percentage of those who vigorously exercised less than once a week increased from 7.8% to 14.4%, while the percentage of those who vigorously exercised more than once a week decreased from 34% to 21.2%.

- Students whose parents have obtained a higher or medium education were more likely to perform daily vigorous physical activity than students whose parents had a low educational level.

- Physical activity before and during the outbreak is related with the ability to easily borrow money. Students who reported not being able to borrow money decreased their frequency of vigorous physical activity during the quarantine. The rate of students who (almost) never exercised increased from 12.9% to 22.6%, while that of students who exercised vigorously less than once a week, increased from 22.6% to 35.5%.

- Additionally, the rate of students who (almost) never exercised increased from 30.2% to 50% among the students who reported being able to borrow 500 euro from two persons. The opposite was observed among the students in this group who vigorously exercised more than once a week (their rate fell from 36% to 18.6%).

TABLE 20: VIGOROUS PHYSICAL ACTIVITY BY SOCIODEMOGRAPHIC INFORMATION

		Before COVID-19 outbreak						During COVID-19 outbreak					
		Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Chi²	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Chi²
Gender							*						
	Male	34.1%	7.8%	16.2%	24.7%	17.2%		33.1%	9.8%	13.5%	27.7%	15.9%	
	Female	32.5%	12.6%	8.7%	34.3%	11.9%		32.6%	12.6%	11.2%	21.8%	21.8%	
Age group							*						*
	17-18	33.3%	11.1%	22.2%	3.7%	29.6%		28.6%	21.4%	7.1%	32.1%	10.7%	
	19-20	37.8%	9.5%	12.2%	18.2%	22.3%		31.1%	8.8%	14.2%	26.4%	19.6%	
	21-22	31.8%	8.2%	8.8%	38.2%	12.9%		33.5%	11.2%	8.2%	25.9%	21.2%	
	23-24	23.6%	15.7%	8.7%	43.3%	8.7%		25.2%	9.4%	15.0%	27.6%	22.8%	
	25+	41.1%	7.1%	19.6%	21.4%	10.7%		45.5%	13.4%	14.3%	16.1%	10.7%	
Relationship status							*						*
	Single	33.4%	11.5%	11.8%	26.8%	16.4%		30.6%	10.4%	13.2%	27.4%	18.4%	
	In a relationship	35.5%	9.7%	14.9%	27.0%	12.9%		38.9%	11.3%	13.0%	20.6%	16.2%	
	It is complicated	22.4%	6.1%	4.1%	55.1%	12.2%		18.4%	12.2%	4.1%	32.7%	32.7%	
Migration status													*
	Native-born	35.5%	11.3%	11.3%	27.2%	14.6%		35.3%	10.0%	10.9%	25.1%	18.7%	
	First generation migrant	21.7%	0.0%	13.0%	52.2%	13.0%		30.4%	17.4%	4.3%	39.1%	8.7%	
	Second generation migrant	26.2%	7.8%	16.5%	34.0%	15.5%		23.1%	14.4%	21.2%	21.2%	20.2%	
Educational level of parents							*						
	Low	33.3%	0.0%	26.7%	26.7%	13.3%		57.1%	0.0%	28.6%	7.1%	7.1%	
	Medium	44.9%	8.3%	17.3%	19.2%	10.3%		32.7%	10.3%	12.8%	26.3%	17.9%	
	High	28.6%	11.6%	10.3%	33.5%	16.0%		31.5%	11.8%	11.8%	25.1%	19.7%	
	Do not know	62.5%	0.0%	0.0%	12.5%	25.0%		66.7%	11.1%	0.0%	11.1%	11.1%	
Can borrow 500 euro from							*						*
	Nobody	12.9%	22.6%	6.5%	41.9%	16.1%		22.6%	35.5%	3.2%	29.0%	9.7%	
	One person	34.9%	9.3%	30.2%	20.9%	4.7%		34.1%	13.6%	22.7%	25.0%	4.5%	
	Two persons	30.2%	8.1%	8.1%	36.0%	17.4%		50.0%	12.8%	2.3%	18.6%	16.3%	
	Three or more persons	35.4%	9.9%	11.8%	27.8%	15.1%		30.1%	8.7%	13.9%	26.1%	21.2%	

Moderate physical activity by sociodemographic information

The results of the analysis on moderate physical activity by sociodemographic information are presented in Table 21. The main findings are:

- Male students' daily moderate physical activity declined during the quarantine (from 34.6% to 19.9%). This decline in daily physical activity is less pronounced among female students.
- Physical activity before and during the COVID-19 outbreak is related to age. There is a decrease in daily moderate activities in all age groups except in those aged between 23-24. However, it is more evident in the younger ages (17 to 22). The share of students that (almost) never performed moderate physical activity does not show significant fluctuations according to age.
- Physical activity before and during the outbreak is also related to relationship status. Students who were single or in a relationship decreased their daily moderate physical activity during the quarantine (in a relationship: from 36.1% to 25.4% and single: from 34.5% to 24%). On the contrary, students whose relationship status was complicated, increased their daily moderate physical activity from 24% to 34%.
- The results are indicative of a drop in daily moderate activities in all groups of migrant students.
- Students whose parents had a high educational level, significantly decreased their daily moderate physical activity (from 35.8% to 23%) and increased their less frequent moderate physical activity.
- Physical activity before and during the quarantine is also related with the ability to borrow money. Students who reported being able to borrow 500 euro from two persons reduced the frequency of moderate physical activity during the pandemic. In particular, the rate of those who (almost) never exercised increased from 8.3% to 22.1%, the rate of those who exercised less than once a week increased from 7.1% to 23.3%, while the rate of those who exercised moderately daily decreased from 45.2% to 16.3%.

TABLE 21: MODERATE PHYSICAL ACTIVITY BY SOCIODEMOGRAPHIC INFORMATION

	Before COVID-19 outbreak						During COVID-19 outbreak					
	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Chi²	Almost Never	Less than once a week	Once a week	More than once a week	Almost daily	Chi²
Gender												*
Male	12.2%	16.9%	12.2%	24.1%	34.6%		11.5%	23.6%	17.2%	27.7%	19.9%	
Female	12.2%	11.5%	15.7%	25.9%	34.6%		13.3%	8.8%	13.3%	33.3%	31.2%	
Age group						*						*
17-18	10.7%	14.3%	14.3%	17.9%	42.9%		10.7%	32.1%	14.3%	14.3%	28.6%	
19-20	6.8%	20.9%	4.1%	28.4%	39.9%		9.5%	10.2%	19.7%	34.7%	25.9%	
21-22	9.9%	7.0%	16.3%	23.3%	43.6%		14.0%	13.5%	12.9%	32.2%	27.5%	
23-24	15.7%	17.3%	11.0%	29.9%	26.0%		12.6%	15.7%	11.8%	32.3%	27.6%	
25+	19.8%	13.5%	27.0%	18.9%	20.7%		14.4%	25.2%	16.2%	25.2%	18.9%	
Relationship status						*						*
Single	10.1%	15.3%	12.2%	27.9%	34.5%		15.6%	10.4%	18.4%	31.6%	24.0%	
In a relationship	14.9%	11.6%	17.3%	20.1%	36.1%		10.1%	21.8%	12.5%	30.2%	25.4%	
It is complicated	14.0%	22.0%	8.0%	32.0%	24.0%		6.0%	24.0%	8.0%	28.0%	34.0%	
Migration status												
Native-born	13.8%	16.2%	12.9%	23.4%	33.8%		13.3%	15.9%	15.5%	30.1%	25.3%	
First generation migrant	8.7%	8.7%	17.4%	30.4%	34.8%		21.7%	13.0%	4.3%	52.2%	8.7%	
Second generation migrant	6.8%	7.8%	17.5%	31.1%	36.9%		6.8%	19.4%	15.5%	28.2%	30.1%	
Educational level of parents												*
Low	7.1%	14.3%	35.7%	28.6%	14.3%		28.6%	7.1%	42.9%	7.1%	14.3%	
Medium	14.7%	12.8%	17.9%	23.1%	31.4%		6.5%	23.2%	6.5%	31.0%	32.9%	
High	11.4%	15.1%	12.1%	25.7%	35.8%		14.3%	13.8%	17.3%	31.6%	23.0%	
Do not know	25.0%	0.0%	0.0%	25.0%	50.0%		0.0%	25.0%	25.0%	12.5%	37.5%	
Can borrow 500 euro from						*						*
Nobody	16.1%	3.2%	9.7%	16.1%	54.8%		13.3%	10.0%	13.3%	53.3%	10.0%	
One person	9.3%	4.7%	7.0%	39.5%	39.5%		9.1%	4.5%	15.9%	20.5%	50.0%	
Two persons	8.3%	7.1%	14.3%	25.0%	45.2%		22.1%	23.3%	8.1%	30.2%	16.3%	
Three or more persons	13.1%	17.4%	15.0%	24.2%	30.3%		10.8%	16.7%	16.7%	29.8%	26.1%	

COVID-19 diagnosis, symptoms and perceived risk of infection

No one from the sample got infected with COVID-19, confirmed either by a lab test or a healthcare provider, while only 1.9% suspected that they had COVID-19, without confirmation from a lab test or a healthcare provider.

7.6% of the sample knew someone from their personal network who got infected with COVID-19. Of these patients nearly half had mild symptoms; 1 out of 4 eventually died.

Within the group of students who were not infected (confirmed by a lab test or a healthcare provider) nearly 1 out of 4 feared they would get infected, whereas over 1 out of 4 found it highly unlikely to get infected. Female and older students reported they worried more about getting infected, whereas students who were temporary residents in the country had a lower perceived risk of infection.

28% of the respondents experienced symptoms such as coughing, sneezing or runny nose "during the last month". Of these respondents, nearly 1 out of 5 had tried to hide these symptoms from other people on certain occasions. More female than male students reported being afraid of stigmatization because of COVID-19 symptoms.

COVID-19 diagnosis

Students were asked whether they were infected with Covid-19 (Figure 28). A very small share of students (1.9%) suspected that they were infected with the virus before or during the time of the survey, however this was not confirmed by a lab test or a health care provider. The majority of students (98.1%) did not think they had Covid-19 either before or at the time of the survey. Interestingly, none of the students reported being tested positive for COVID-19, confirmed either by a lab test or a health care provider.

1.9%

98.1%

- I think I had or currently have COVID-19, but a health care provider did not confirm it
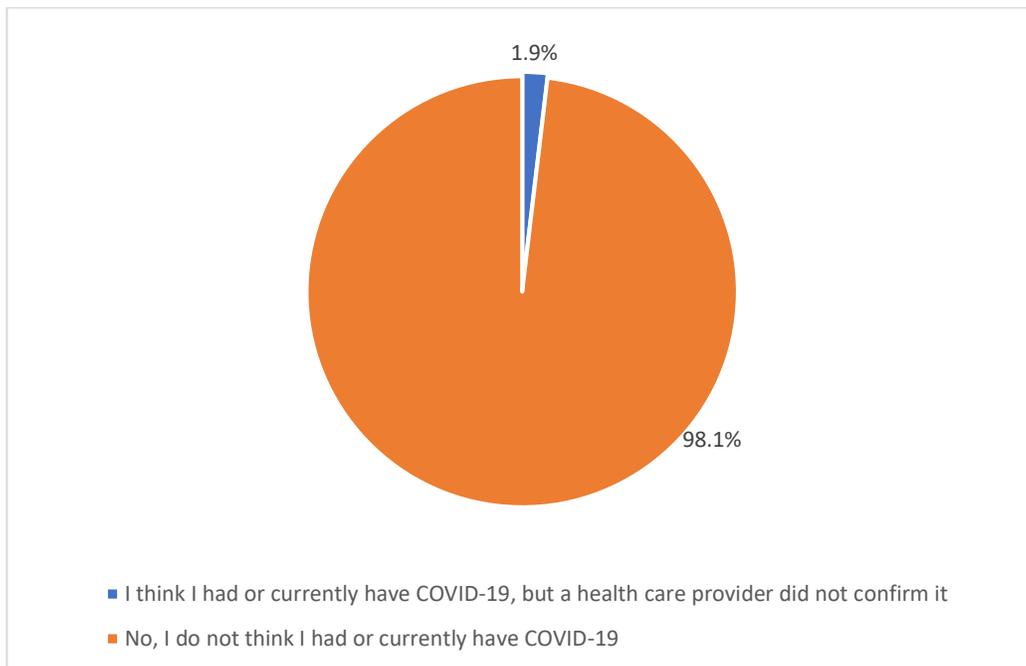- No, I do not think I had or currently have COVID-19

FIGURE 28: PERCENTAGE OF COVID-19 DIAGNOSIS

Students were further asked whether they knew someone from their personal network that got infected with COVID-19. The results are presented in Figure 29. Only 7.6% of the students reported knowing someone from their personal network who got infected with COVID-19.
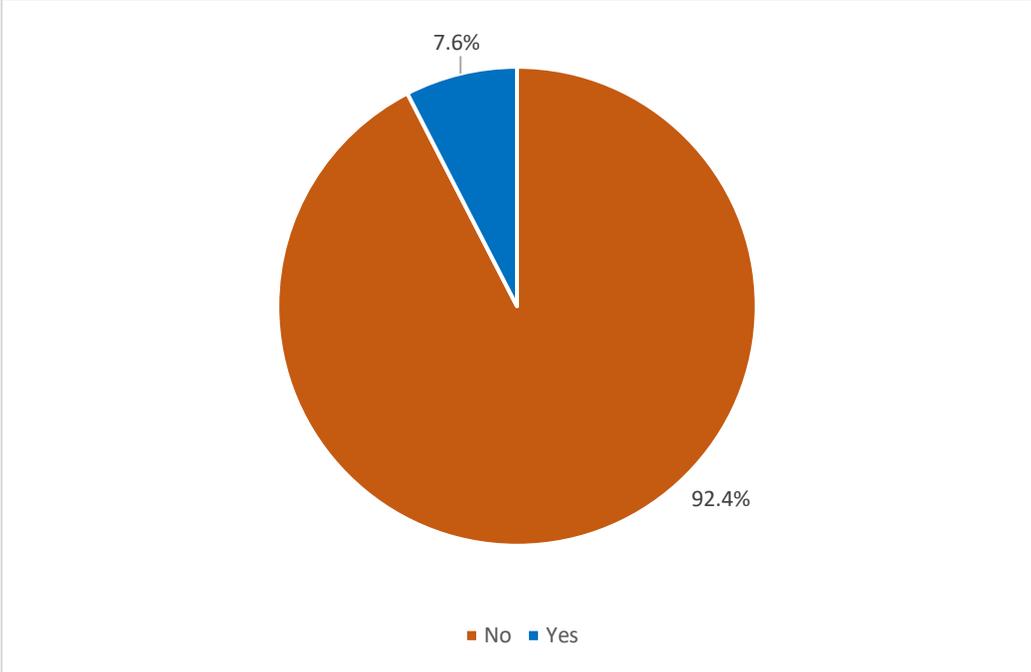

FIGURE 29: PERSONAL NETWORK INFECTED WITH COVID-19

The students were asked to describe the severity of symptoms of the person from their personal network who got infected with Covid-19. Of those infected, approximately half had mild symptoms and 1 out of 4 died (Figure 30).
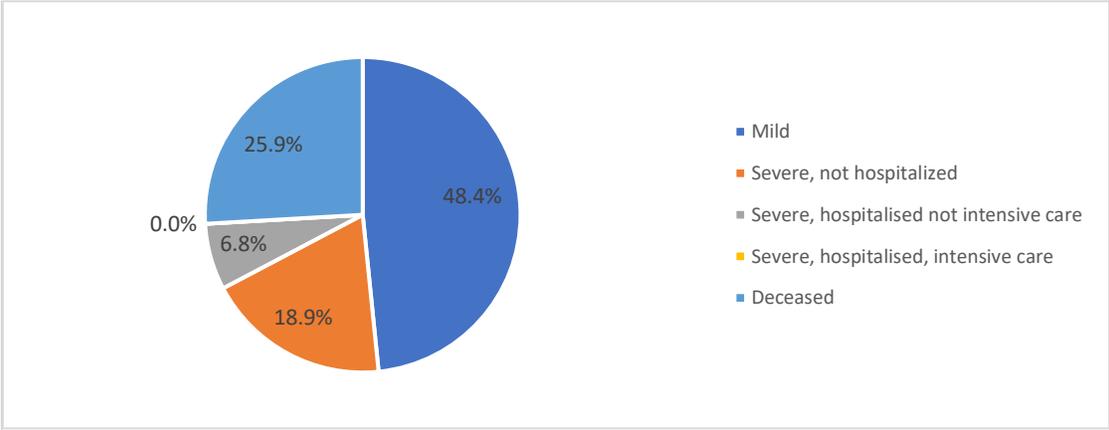
FIGURE 30: SEVERITY OF SYMPTOMS

Among the students who were not infected with COVID-19 (either confirmed by a lab test or health care provider), we further investigated the perceived risk of infection.

The students were asked to provide a score between 0 and 10 indicating how likely they thought they were to get infected with Covid-19 (with a higher score implying that an infection was more likely). The results can be seen in Table 22. We observe that the distribution of the scores is normal, with a mean score of 4.4 and a standard deviation of 2.6. It is important to note that students' perceived risk of infection is quite polarized. Nearly 1 out of 4 students reported it was likely to get infected (score 7 or higher), while, on the contrary, over 1 out of 4 students found it highly unlikely to get infected (score 2 or lower).

TABLE 22: DISTRIBUTION OF COVID-19 PERCEIVED RISK OF INFECTION

	Frequency	Valid Percent	Cumulative Percent
0	39	6.7%	6.7%
1	56	9.6%	16.2%
2	67	11.5%	27.7%
3	62	10.5%	38.3%
4	53	9.1%	47.3%
5	117	20.0%	67.4%
6	58	9.8%	77.2%
7	54	9.2%	86.4%
8	45	7.6%	94.0%
9	11	1.9%	96.0%
10	24	4.0%	100.0%

Perceived risk of infection by sociodemographic information

The perceived risk of infection by sociodemographic information in presented in Table 23. The main findings are:

- Students' perceived risk of getting infected with COVID-19 is the highest among those aged >=25 years, whereas it is the lowest among students aged between 23-24 years of age. The difference between these two age groups is significant, however the differences between all other age groups are not.
- There are no significant differences in the perceived risk of infection by gender, relationship status, migration status, and the educational level of parents were.
- Students who could easily borrow 500 euro from two persons reported a significantly higher perceived risk of infection than the other groups.

	Mean	S.D.	Sign.
Gender			
Male	4.32	2.59	
Female	4.49	2.66	
Age group			*
17-18	4.58	2.49	
19-20	4.36	2.65	
21-22	4.61	2.64	
23-24	3.84	2.58	
25+	4.87	2.59	
Relationship Status			
Single	4.48	2.40	
In a relationship	4.45	2.88	
It is complicated	3.99	2.56	
Migration status			
Native-born	4.40	2.55	
First generation migrant	3.51	2.85	
Second generation migrant	4.75	2.88	
Educational level of parents			
Low	4.10	2.83	
Medium	4.58	2.33	
High	4.42	2.71	
Do not know	2.70	3.05	
Can borrow 500 euro from			*
Nobody	3.31	2.65	
One person	3.84	2.82	
Two persons	5.67	2.81	
Three or more persons	4.32	2.49	

*$_P$<0.05

Perceived risk of infection by study related information

The perceived risk of infection by study related information is presented in Table 24. The main findings are:

- No significant differences in the perceived risk of infection based on the year of education and study program were observed.
- Students who were temporary residents in Greece for more than a year had the lowest perceived risk of infection rate (mean 1.66), compared to students who were Greek citizens (mean 4.44) or permanent residents (mean 4.53) in the country. The difference between temporary residents and the other groups is significant.
- Students whose field of study was 'Health and Welfare' had the highest perceived risk of infection compared to groups of students in all other study fields.
- The differences between 'Health and Welfare' and 'Engineering, manufacturing and construction', 'Social sciences, business and law' are significant, whereas the differences between the remaining groups are not significant.

	Mean	S.D.	Sign.
First year in higher education			
Yes	4.67	2.82	
No	4.36	2.57	
Study Program			
Bachelor program	4.46	2.60	
Master program	4.16	2.90	
Doctoral program	4.85	2.39	
Other	3.44	1.91	
Citizenship status			*
Greek citizen	4.44	2.67	
Permanent resident	4.53	2.22	
Temporary resident for more than one year	1.66	1.76	
Field of study			*
Education	3.88	2.36	
Humanities and Arts	4.45	2.71	
Social sciences, business and law	4.09	2.55	
Science	4.45	2.53	
Engineering, manufacturing and construction	4.18	2.55	
Agriculture	5.17	3.99	
Health and welfare	5.71	2.22	
Services	5.67	4.47	
Other	3.40	2.71	
Any Combination of the above	4.78	2.36	

*$p < 0.05$

COVID-19 symptoms and fear of stigmatization

The aim of the following set of questions was to investigate whether and to what extent Covid-19-related symptoms are potentially related to fear of stigmatization. Students were first asked whether they had symptoms such as coughing, sneezing or a runny nose during the past month. Although these symptoms are highly associated with COVID-19 they can be attributed to other reasons as well, such as the flu, allergies etc. Consequently, the respondents that answered yes to having some or all of these symptoms were also asked whether there were occasions (in a shop, in the street) when they tried to hide these symptoms from other people. This behavior can give an indication of fear of stigmatization.

The majority of students (60.2%) did not experience any symptoms such as coughing, sneezing or runny nose during the month preceding the survey. On the contrary, 28% reported having some or all of these symptoms during "the last month" (at the time of filling out the survey) (Figure 31). Among the students who reported having symptoms, nearly 1 out of 5 tried to hide them from other people on certain occasions. (Figure 32).
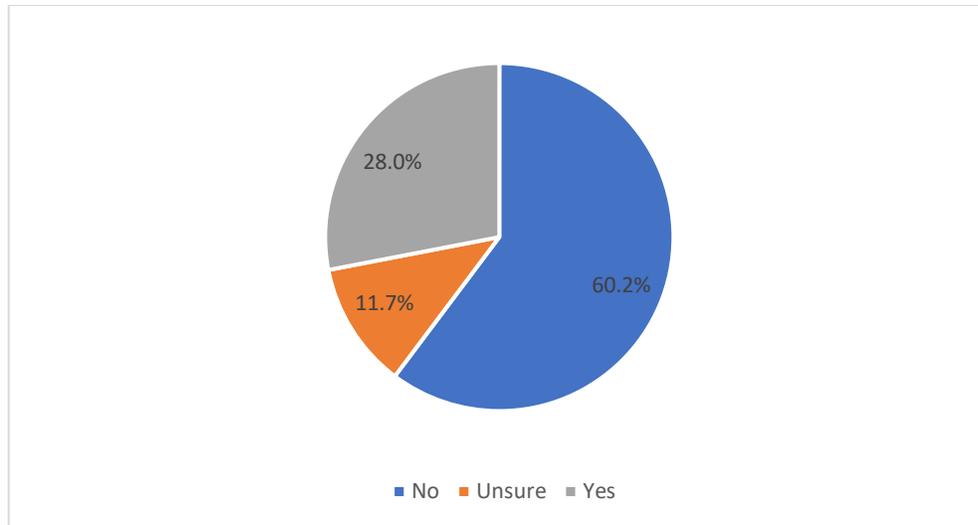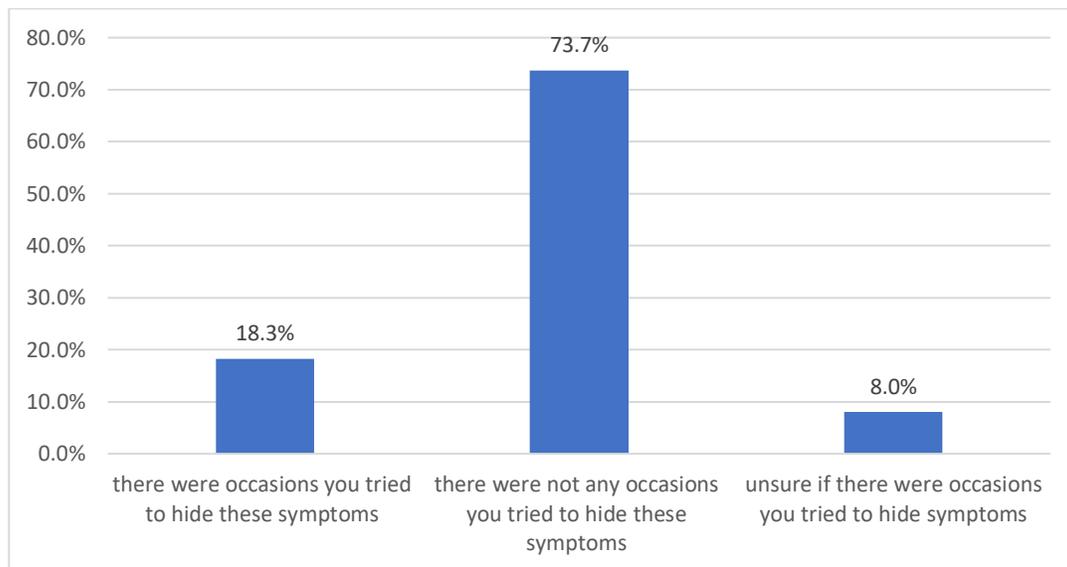
FIGURE 31: SYMPTOMS DURING THE LAST MONTH

FIGURE 32: OCCASIONS YOU TRIED TO HIDE SYMPTOMS

COVID-19 Symptoms and fear of stigmatization by sociodemographic information

Infectious disease outbreaks are usually accompanied by fear of stigma, marginalization and discrimination against those infected. Evidence from past outbreaks (SARS, Embola) has shown that fear of stigma is persistent even during the post-outbreak phase (Lee et al. 2005, Person, et al. 2004).

COVID-19 symptoms and fear of stigmatization were analyzed in relation to sociodemographic information (Table 25).

- Female students reported they had symptoms like coughing, sneezing or runny nose; 23.9% of the female students and 14.1% of male students tried to hide these symptoms.

- Significant differences were also observed in relation to the relationship status of the respondents. Students in a relationship reported being afraid of stigma due to symptoms.
- No noticeable differences by other sociodemographic information (age, migration status, education of parents, number of persons you can borrow money from) were observed.

TABLE 25: COVID-19 SYMPTOMS AND FEAR OF STIGMATIZATION BY SOCIODEMOGRAPHIC INFORMATION

		Occasions the respondent tried to hide symptoms			
		Yes	No	Unsure	Chi²
Gender					*
	Male	14.1%	81.5%	4.3%	
	Female	23.9%	63.4%	12.7%	
Age group					
	17-18	15.4%	76.9%	7.7%	
	19-20	16.0%	80.0%	4.0%	
	21-22	15.3%	74.6%	10.2%	
	23-24	21.7%	73.9%	4.3%	
	25+	36.8%	47.4%	15.8%	
Relationship Status					*
	Single	11.0%	82.0%	7.0%	
	In a relationship	30.6%	65.3%	4.1%	
	It is complicated	26.7%	46.7%	26.7%	
Migration status					
	Native-born	19.8%	71.8%	8.4%	
	First generation migrant	11.1%	88.9%	0.0%	
	Second generation migrant	12.5%	79.2%	8.3%	
Educational level of parents					
	Low	50.0%	50.0%	0.0%	
	Medium	26.5%	61.8%	11.8%	
	High	16.0%	76.8%	7.2%	
	Do not know	33.3%	66.7%	0.0%	
Can borrow 500 euro from					
	Nobody	28.6%	71.4%	0.0%	
	One person	16.7%	66.7%	16.7%	
	Two persons	11.4%	85.7%	2.9%	
	Three or more persons	20.0%	70.9%	9.1%	

COVID-19 perceived risk of infection, severe illness and shortage of medical supplies

Students do not seem particularly worried of getting infected or getting severely ill with COVID-19, but they worry more about getting infected with the virus than getting severely ill. Female students, native-born students and students whose parents are of a medium or high education are noticeably more worried of getting infected with COVID-19.

Students are more worried that someone from their personal network might get infected or severely ill with COVID-19 and less worried about their personal health.

Students seem particularly worried that the medical stuff and hospitals might not be adequately supplied to handle the COVID-19 outbreak. In fact, 1 out of 5 students were extremely worried that the doctors and hospitals might not be adequately supplied.

In this section we present the results of the analysis concerning the perceived risk of infection in relation to:

- ✓ personal infection with COVID-19 and severe illness from infection
- ✓ infection with COVID-19 and severe illness from infection of someone from their personal network
- ✓ the adequacy of medical supplies and the capacity of doctors and hospitals to handle the COVID-19 outbreak.

COVID-19 Perceived risk of personal infection and illness

The perceived risk of infection and severe illness from COVID-19 was measured with the following questions.

- ✓ How worried are you to get infected with COVID-19?
- ✓ How worried are you to get severely ill from a COVID-19 infection?

The students were asked to provide a score between 0 and 10 (with a higher score implying that an infection was more likely). The results of the analysis regarding the perceived risk of infection and illness are presented in Table 26. In general, students did not seem particularly worried of getting infected or getting severely ill with COVID-19. The mean score reported by the students regarding how worried they were about getting infected is 3.76, whereas the mean score of how worried they were about getting severely ill is 2.7. Students were more worried about getting infected than they were of getting severely ill if they were infected with the virus.

More than half of the students were not particularly worried about getting infected with COVID-19, whereas nearly 70% of the students were not particularly worried of getting severely ill (score 3 or lower).

	Perceived risk of getting infected by COVID-19			Perceived risk of getting severely ill from a COVID-19 infection		
	Frequency	Valid Percent	Cumulative Percent	Frequency	Valid Percent	Cumulative Percent
0	70	12.0%	12.0%	109	18.7%	18.7%
1	64	11.0%	23.0%	111	19.0%	37.7%
2	80	13.6%	36.7%	97	16.5%	54.2%
3	97	16.6%	53.3%	79	13.5%	67.7%
4	63	10.7%	64.0%	58	10.0%	77.7%
5	67	11.5%	75.5%	54	9.2%	86.9%
6	40	6.9%	82.3%	36	6.2%	93.1%
7	30	5.2%	87.5%	23	4.0%	97.1%
8	38	6.5%	94.0%	7	1.1%	98.2%
9	10	1.7%	95.7%	6	0.9%	99.1%
10	25	4.3%	100.0%	5	0.9%	100.0%

Perceived risk of infection and illness by sociodemographic information

Table 27 presents the results of the analysis on perceived risk of personal infection and illness by sociodemographic information. The main findings are:

- Female students are noticeably more worried of getting infected by COVID-19 than male students ($p<0.05$). However, no significant differences were observed regarding how worried female and male students were of getting severely ill from COVID-19.
- The age of students is associated with perceived risk of infection and illness from the virus, however not all differences between the age groups are significant.
- The differences between the age groups 17-18 and 19-20, 23-24 and between the age groups 25+ and 19-20, 23-24 are significant in relation to perceived risk of infection.
- Native-born students seemed more worried of getting infected by COVID-19 than second generation migrants. No other differences were observed in relation to the migrant status of students.
- Students whose parents have a low educational level worried less of getting infected by COVID-19 than students whose parents have a medium or high educational level. However, no differences in the perceived risk of getting severely ill from COVID-19 by educational level of parents were observed.
- Students that reported being able to borrow money from two persons scored the highest in the perceived risk of getting severely ill from COVID-19. The difference between this group and students that can borrow money from three or more persons is significant, whereas the other combinations were not statistically significant.
- No significant differences by relationship status of the respondents were observed.

		Perceived risk of getting infected by COVID-19			Perceived risk of getting severely ill from a COVID-19 infection		
		Mean	S.D.	Sign.	Mean	S.D.	Sign.
Gender				*			
	Male	3.36	2.48		2.63	2.20	
	Female	4.11	2.90		2.74	2.37	
Age group				*			*
	17-18	5.01	3.01		2.54	1.97	
	19-20	3.18	2.50		2.33	1.81	
	21-22	4.01	2.45		3.08	2.38	
	23-24	3.23	2.79		2.01	2.23	
	25+	4.42	3.00		3.41	2.55	
Relationship Status							
	Single	3.95	2.65		2.84	2.22	
	In a relationship	3.68	2.79		2.61	2.35	
	It is complicated	3.06	2.76		2.30	2.35	
Migration status				*			
	Native-born	3.98	2.73		2.72	2.28	
	First generation migrant	2.72	2.38		2.60	2.12	
	Second generation migrant	3.01	2.63		2.60	2.37	
Educational level of parents				*			
	Low	1.77	2.62		2.11	2.94	
	Medium	3.83	2.62		2.88	2.10	
	High	3.81	2.74		2.62	2.31	
	Do not know	3.47	3.14		3.90	2.96	
Can borrow 500 euro from							*
	Nobody	3.86	2.40		2.96	2.24	
	One person	4.30	3.53		2.69	2.28	
	Two persons	3.68	2.67		3.32	2.62	
	Three or more persons	3.71	2.67		2.55	2.21	

*p<0.05

Perceived risk of infection and illness by study related information

Table 28 shows the perceived risk of personal infection and illness by study related information. The main findings are:

- Students who were not in the first year of studies worried more about getting severely ill from COVID-19, if infected, compared to first year students. No other significant differences were observed related to the year of studies.
- No significant differences by study program and citizenship status were observed.
- Students in the study area of "Agriculture" scored significantly lower than the other study areas in relation to the degree of concern about getting infected with COVID-19 (with the exception of the fields of "Social sciences, business and law", "Services" and - Other). However, no significant differences were observed in relation to the degree of concern about getting severely ill from COVID-19, except for students in "Agriculture" and "Engineering, manufacturing and construction".

		Perceived risk of getting infected with COVID-19			Perceived risk of getting severely ill from a COVID-19 infection		
		Mean	S.D.	Sign.	Mean	S.D.	Sign.
First year in higher education							*
	Yes	3.67	2.77		2.28	1.71	
	No	3.79	2.72		2.82	2.42	
Study Program							
	Bachelor program	3.74	2.71		2.71	2.29	
	Master program	3.72	2.90		2.44	2.37	
	Doctoral program	4.33	2.99		3.05	2.06	
	Other	4.63	1.84		3.92	1.55	
Citizenship status							
	Greek citizen	3.78	2.75		2.67	2.27	
	Permanent resident	3.76	2.59		2.97	2.47	
	Temporary resident for more than one year	1.78	2.00		1.49	1.18	
Field of study				*			*
	Education	4.50	3.18		2.63	2.42	
	Humanities and Arts	4.23	2.88		2.83	2.58	
	Social sciences, business and law	3.36	2.64		2.38	2.24	
	Science	3.85	2.85		2.66	2.35	
	Engineering, manufacturing and construction	3.66	2.23		3.14	2.08	
	Agriculture	1.66	2.15		1.37	0.97	
	Health and welfare	4.47	2.71		2.80	2.58	
	Services	6.00	3.96		1.67	1.14	
	Other	3.20	3.73		2.80	2.44	
	Any combination of the above	4.61	2.88		3.07	2.45	

*p<0.05

COVID-19 Perceived risk of infection and illness of personal network

In order to investigate if and how much worried the students are that someone from their personal network will get infected or severely ill from COVID-19, the following questions were asked.

- ✓ How worried are you that someone from your personal network will get infected with COVID-19?
- ✓ How worried are you that someone from your personal network will get severely ill from a COVID-19 infection?

The students were asked to provide a score between 0 and 10 (with a higher score implying that an infection was more likely). The results of the analysis regarding the perceived risk of infection and illness of personal network are presented in Table 29. Interestingly, students were more worried that someone from their personal network might get infected or severely ill from COVID-19, than they were that they personally might get infected or severely ill.

The mean score reported by students regarding how worried they are that someone from their personal network might get infected by COVID-19 is nearly twice as high the score reported of how worried they are that they personally might get infected by COVID-19 (mean 6.07 vs 3.76).

Similarly, the mean score reported by students regarding how worried they are that someone from their personal network might get severely ill from a COVID-19 infection is more than double the score reported of how worried they are of personally getting severely ill from a COVID-19 infection (mean 6.9 vs 2.7).

TABLE 29: DISTRIBUTION OF PERCEIVED RISK OF INFECTION AND ILLNESS OF PERSONAL NETWORK

	Worry that anyone from your personal network will get infected by COVID-19			Worry that anyone from your personal network will get severely ill from a COVID-19 infection		
	Frequency	Valid Percent	Cumulative Percent	Frequency	Valid Percent	Cumulative Percent
0	12	2.1%	2.1%	18	3.1%	3.1%
1	24	4.1%	6.2%	24	4.1%	7.2%
2	47	8.0%	14.2%	20	3.4%	10.6%
3	59	10.1%	24.2%	25	4.3%	14.9%
4	26	4.4%	28.6%	22	3.7%	18.6%
5	87	14.8%	43.5%	55	9.3%	27.9%
6	55	9.4%	52.8%	41	7.1%	35.0%
7	57	9.7%	62.6%	86	14.7%	49.7%
8	78	13.3%	75.9%	96	16.4%	66.1%
9	42	7.2%	83.1%	61	10.5%	76.5%
10	99	16.9%	100.0%	137	23.5%	100.0%

Perceived risk of infection and illness of personal network by sociodemographic information

Table 30 presents the results of the analysis on the perceived risk of infection and illness of personal network by sociodemographic information. The main findings are:

- Female students are noticeably more worried that someone from their personal network will get infected by COVID-19 than male students.
- The age of students is associated to the degree of worry that someone from their personal network will get infected / severely ill from COVID-19, however not all differences between the different age groups are significant.
- Statistically significant differences were observed between the age groups 25+ and 19-20, 23-24 regarding whether the students are worried about someone from their personal network getting infected by COVID-19.
- The differences between the age groups 25+ and 19-20, 23-24 and between the age group 23-24 and all the other age groups (except that of 19-20) are statistically significant.
- Native born students seemed more worried that someone from their personal network will get severely ill from COVID-19 infection than first generation migrants. No other differences were observed in relation to the migration status of students.

- Students that reported not being able to borrow money from anyone had the lowest mean (4.92), whereas students that reported being able to borrow money from one person had the highest mean (7.07). The differences between these two groups are significant.
- No significant differences by relationship status of the respondent and the educational level of the parents were observed.

TABLE 30: PERCEIVED RISK OF INFECTION AND ILLNESS OF PERSONAL NETWORK BY SOCIODEMOGRAPHIC INFORMATION

		Worry that someone from your personal network will get infected by COVID-19			Worry that someone from your personal network will get severely ill by COVID-19 infection		
		Mean	S.D.	Sign.	Mean	S.D.	Sign.
Gender				*			
	Male	5.61	2.78		7.00	2.76	
	Female	6.49	2.90		6.76	2.90	
Age group				*			*
	17-18	6.17	3.64		7.84	2.87	
	19-20	5.69	2.56		6.66	3.10	
	21-22	6.14	2.85		7.05	2.41	
	23-24	5.74	2.88		6.04	2.94	
	25+	6.82	2.99		7.74	2.62	
Relationship Status							
	Single	6.01	2.79		7.04	2.64	
	In a relationship	6.08	3.00		6.78	2.98	
	It is complicated	6.38	2.84		6.73	3.16	
Migration status							*
	Native-born	6.20	2.87		7.02	2.76	
	First generation migrant	4.91	3.35		5.31	3.33	
	Second generation migrant	5.74	2.76		6.74	2.93	
Educational level of parents							
	Low	4.77	3.19		5.87	2.90	
	Medium	6.47	2.84		7.29	2.70	
	High	5.93	2.83		6.77	2.84	
	Do not know	7.64	4.08		7.78	4.14	
Can borrow 500 euro from				*			
	Nobody	4.92	3.42		6.83	2.55	
	One person	7.07	2.47		7.18	2.65	
	Two persons	6.14	2.72		6.39	3.25	
	Three or more persons	6.03	2.88		6.98	2.78	

*$p<0.05$

Perceived risk of infection and illness of personal network by study related information

Table 31 presents the results on the perceived risk of infection and illness of personal network by study related information. The main findings are:

- Students who are temporary residents in Greece for more than one year worry significantly less that someone from their personal network will get infected by COVID-19 or get severely ill by a COVID-19 infection compared to students who are Greek citizens or permanent residents in Greece.
- Significant differences were observed in the extent of concern that someone from their personal network will get severely ill from COVID-19 between the study areas of 'Agriculture' and the areas 'Science', 'Engineering, manufacturing and construction', 'Health and welfare', 'Any combination of the above'. All other differences were not significant.
- Small differences were observed between the fields of study in relation to the degree of worry that someone from their personal network will get infected from COVID-19, with the exception of 'Social sciences, business and law' and 'Any combination of the above'.
- No significant differences by year of education and study program were observed.

		Worry that someone from your personal network will get infected by COVID-19			Worry that someone from your personal network will get severely ill by a COVID-19 infection		
		Mean	S.D.	Sign.	Mean	S.D.	Sign.
First year in higher education							
	Yes	6.00	3.07		7.00	3.23	
	No	6.09	2.82		6.87	2.71	
Study Program							
	Bachelor program	6.04	2.85		6.97	2.76	
	Master program	6.07	3.13		6.36	3.29	
	Doctoral program	6.84	3.02		6.65	3.17	
	Other	7.09	1.38		8.39	0.82	
Citizenship Status				*			*
	Greek citizen	6.11	2.88		7.02	2.77	
	Permanent resident	6.09	2.73		6.38	2.92	
	Temporary resident for more than one year	2.11	2.89		2.32	3.20	
Field of study				*			*
	Education	6.66	2.82		7.53	2.42	
	Humanities and Arts	7.11	3.11		6.92	2.79	
	Social sciences, business and law	5.58	2.83		6.65	2.89	
	Science	6.03	3.00		7.01	2.97	
	Engineering, manufacturing and construction	5.73	2.84		7.36	2.34	
	Agriculture	5.55	2.52		4.88	3.95	
	Health and welfare	6.92	2.30		7.55	2.54	
	Services	8.33	2.86		7.67	2.49	
	Other	4.20	3.90		5.40	4.05	
	Any combination of the above	6.87	2.65		6.97	2.67	

*p<0.05

COVID-19 Perceived risk of medical supply shortage

In order to investigate if and to what extent, students worried if doctors and hospitals were adequately supplied to handle the COVID-19 outbreak the following question was asked.

✓ How worried are you that doctors and hospitals will not have adequate medical supplies to handle the COVID-19 outbreak?

The students were asked to provide a score between 0 and 10 (with a higher score indicating that they were more worried). The results of the analysis (Table 32) show that students were particularly concerned as to whether the doctors and hospitals will be adequately supplied to handle the COVID-19 outbreak. The mean

score is 6.54 and the standard deviation is 2.79. It is important to note that 1 out of 5 students were very worried that the doctors and hospitals will not be adequately supplied (score 10/10).

TABLE 32: DISTRIBUTION OF PERCEIVED RISK OF MEDICAL SUPPLY SHORTAGE

	Frequency	Valid Percent	Cumulative Percent
0	12	2.1%	2.1%
1	14	2.3%	4.4%
2	34	5.7%	10.1%
3	39	6.6%	16.7%
4	43	7.4%	24.2%
5	64	11.0%	35.1%
6	72	12.4%	47.5%
7	60	10.3%	57.7%
8	71	12.1%	69.9%
9	47	8.1%	78.0%
10	129	22.0%	100.0%

Perceived risk of medical supply shortage by sociodemographic information

There are not observed significant differences in students' perceptions regarding potential shortages in medical supplies to handle the COVID-19 outbreak when broken down by sociodemographic information (Table 33).

- There are hardly any differences between the age groups. Statistically significant differences are observed only between the age groups 19-20 (mean 5.88) and 25+ (mean 7.23).
- Students whose parents had a high educational background were less worried that doctors and hospitals will not have adequate medical supplies (6.26). The differences are statistically significant when compared to students whose parents were of medium education (mean 7.05) and of unknown education (9.37).
- Students who had the ability to borrow money from one person were the most worried concerning medical supply adequacy (mean 8.18). The differences are statistically significant compared to students who were able to borrow 500 euro from two persons (mean 6.66) and from three or more persons (mean 6.35).
- No significant differences by gender, relationship and migration status are observed.

		Mean	S.D.	Sign.
Gender				
	Male	6.35	2.81	
	Female	6.70	2.76	
Age group				*
	17-18	7.38	2.21	
	19-20	5.88	2.54	
	21-22	6.50	2.98	
	23-24	6.58	2.72	
	25+	7.23	2.85	
Relationship Status				
	Single	6.54	2.72	
	In a relationship	6.49	2.93	
	It is complicated	6.84	2.52	
Migration status				
	Native-born	6.57	2.74	
	First generation migrant	5.91	3.67	
	Second generation migrant	6.58	2.82	
Educational level of parents				*
	Low	7.32	3.24	
	Medium	7.05	2.65	
	High	6.26	2.80	
	Do not know	9.37	1.13	
Can borrow 500 euro from				*
	Nobody	6.58	2.95	
	One person	8.18	2.05	
	Two persons	6.66	2.84	
	Three or more persons	6.35	2.79	

*p<0.05

Perceived risk of medical supply shortage by study related information

In Table 34 we present the results of the perceived risk of medical supply shortage by study related information.

- Students who were temporary residents in Greece for more than one year worry significantly less that doctors and hospitals will not have adequate medical supplies to handle the pandemic, compared to students who were Greek citizens or permanent residents in Greece.

	Mean	S.D.	Sign.
First year in higher education			
Yes	6.63	2.59	
No	6.52	2.85	
Study Program			
Bachelor program	6.56	2.73	
Master program	6.31	3.32	
Doctoral program	6.80	2.79	
Other	7.44	2.39	
Citizenship status			*
Greek citizen	6.64	2.78	
Permanent resident	6.18	2.64	
Temporary resident for more than one year	2.00	2.38	
Field of study			
Education	6.03	3.37	
Humanities and Arts	7.03	2.79	
Social sciences, business and law	6.02	2.94	
Science	6.44	2.91	
Engineering, manufacturing and construction	7.07	2.42	
Agriculture	7.21	2.00	
Health and welfare	5.80	2.89	
Services	9.00	0.99	
Other	7.30	2.05	
Any Combination of the above	6.77	2.86	

*p<0.05

COVID-19 knowledge

COVID-19 knowledge is high among students. 4 out of 10 students are very knowledgeable about COVID-19; only 1 out of 10 students have little or very little knowledge.

In order to assess the knowledge about the characteristics of COVID-19 virus, the respondents were given 8 statements and were asked to indicate if they were TRUE or FALSE. For each statement, the correct answer is given a score of 1 and a wrong one is given a score of 0. For each respondent, the sum of all scores was calculated, ranging 0 to 8. A total score of 0 indicates poor knowledge, whereas a score of 8 indicates very good knowledge about the COVID-19 virus.

The correct answers to the statements are as follows:

The virus survives for days outside the body in the open air.	False
The virus survives for a week outside the body on a plastic surface.	False
Most people who get COVID-19 get very ill.	False
A possible vaccine will take around 12 to 18 months to be produced.	True
Smokers who get COVID-19 are more likely to get severely ill than non-smokers.	True
You can have the virus without any symptoms.	True
On average, children get less ill from the virus than adults.	True
Only elderly people die from COVID-19.	False

For each statement, the following can be observed (Table 35).
- 23.3% of students mistakenly reported that the virus can survive for days in the open air.
- 31.6% of students mistakenly reported that the virus survives for a week outside the body on a plastic surface, whereas 28% did not know which answer was correct.
- 23.1% of students did not know how long it will take for a vaccine to be produced
- 12.5% of students mistakenly reported that smokers who get COVID-19 are not more likely to get severely ill than non-smokers, whereas 22.3% did not know which answer was correct.
- 10.8% of students reported that they did not know if children get less sick from the virus than the elderly.

There were 3 statements which were answered correctly by over 90% of the respondents.
- Only 2.5% of students mistakenly thought that most people who get COVID-19 get very ill.
- Only 0.8% of students mistakenly thought that you cannot have the virus without any symptoms (asymptomatic).
- Only 1.4% of students mistakenly thought that only elderly people die from COVID-19.

TABLE 35: DISTRIBUTION OF COVID-19 KNOWLEDGE STATEMENTS AMONG STUDENTS

	True	False	Don't Know
The virus survives for days outside the body in open air	23.3%	57.3%	19.4%
The virus survives for a week outside the body on a plastic surface	31.6%	40.1%	28.3%
Most people who get COVID-19 get very ill	2.5%	90.6%	6.9%
A possible vaccine will take around 12 to 18 months to produce	73.1%	3.8%	23.1%
Smokers who get COVID-19 are more likely to get severely ill than non-smokers	65.2%	12.5%	22.3%
You can have the virus without any symptoms	95.4%	0.8%	3.8%
On average, children get less ill from the virus than adults	84.1%	5%	10.8%
Only elderly people die from COVID-19	1.4%	95.3%	3.3%

Table 36 presents the distribution of Covid-19 knowledge among students. Knowledge about COVID-19 among students is good, as the mean is 6.01/8 and the standard deviation is 1.47. Nearly half of the students had a relatively good knowledge for the virus (mean score 5-6 out of 8). It is interesting to note that 4 out of 10 students seem to be very knowledgeable (mean score >=7 out of 8), while a small percentage had little or very little knowledge, as 1 out of 10 students had a mean score 4 or less.

TABLE 36: DISTRIBUTION OF COVID-19 KNOWLEDGE AMONG STUDENTS

	Frequency	Valid Percent	Cumulative Percent
0	1	0.2%	0.2%
1	9	1.5%	1.7%
2	7	1.2%	3.0%
3	24	4.1%	7.0%
4	25	4.4%	11.4%
5	111	18.9%	30.3%
6	159	27.2%	57.4%
7	179	30.6%	88.0%
8	70	12.0%	100.0%

Significant differences in COVID-19 knowledge were not observed when broken down by sociodemographic information.

COVID-19 knowledge by study related information

Only few significant differences in COVID-19 knowledge were observed when broken down by year of study and citizenship status (Table 37). In particular,

- First year students seem to be less knowledgeable about COVID-19 than students who were not in their first year of their studies (mean 5.71 vs 6.10). This difference is statistically significant.
- Students who are permanent residents in Greece were slightly more knowledgeable about COVID-19 than the other groups. The differences between Greek citizens and permanent residents in Greece are statistically significant

	Mean	S.D.	Sign.
First year in higher education			*
Yes	5.71	1.39	
No	6.10	1.48	
Study Program			
Bachelor program	6.05	1.51	
Master program	5.76	1.20	
Doctoral program	5.98	1.18	
Other	5.88	1.09	
Citizenship status			*
Greek citizen	5.95	1.48	
Permanent resident	6.46	1.38	
Temporary resident for more than one year	5.87	0.62	
Field of study			
Education	6.34	1.23	
Humanities and Arts	5.61	1.34	
Social sciences, business and law	6.03	1.37	
Science	6.01	1.37	
Engineering, manufacturing and construction	6.00	1.84	
Agriculture	6.12	0.90	
Health and welfare	6.50	1.37	
Services	5.33	3.03	
Other	6.20	0.79	
Any combination of the above	5.84	1.40	

*p<0.05

Compliance with COVID-19 Government Measures

The majority of students complied with the COVID-19 government measures. Only 1 out of 10 students reported not complying with the measures.

Students' compliance with the COVID-19 measures that were implemented by the government was measured with the following question:

✓ To what extent do you adhere to the COVID-19 measures that are currently implemented by the government?

The students were asked to provide a score between 0 and 10 (with a higher score indicating stricter compliance). The results are presented in Table 38. The mean is 7.7/10 and the standard deviation is 2.22. The results show that students to a large extent complied with the COVID-19 measures implemented by the government, while only 1 out of 10 did not (score < 5/10).

	Frequency	Valid Percent	Cumulative Percent
0	6	0.9%	0.9%
1	10	1.8%	2.7%
2	2	0.3%	3.1%
3	26	4.4%	7.5%
4	20	3.5%	11.0%
5	16	2.8%	13.8%
6	51	8.8%	22.5%
7	54	9.3%	31.8%
8	157	26.9%	58.7%
9	112	19.1%	77.9%
10	130	22.1%	100.0%

Compliance with COVID-19 government measures by sociodemographic information

Table 39 presents the results of compliance with COVID-19 government measures by sociodemographic information.

- The age of students is related to the degree of compliance with the measures. Significant differences were observed only between the age groups 19-20 and 23-24.
- Second generation migrant students scored the highest in compliance with government measures (mean 8.33) whereas first generation migrants scored the lowest (mean 5.46). The differences between all migration groups are significant.
- Students whose parents were of a medium education complied with the government measures slightly less than the other groups.
- Students who were not able to borrow 500 euro from anyone had the lowest compliance rate (mean 6.75). The difference is statistically significant compared to students who had the ability to borrow money from one, or two persons. Significant differences were also observed between groups of students that had the ability to borrow money from one person and from three or more persons.

		Mean	S.D.	Sign.
Gender				
	Male	7.68	2.19	
	Female	7.71	2.28	
Age group				*
	17-18	8.29	1.96	
	19-20	8.05	2.01	
	21-22	7.55	1.92	
	23-24	7.24	2.93	
	25+	7.85	1.98	
Relationship Status				*
	Single	7.82	1.95	
	In a relationship	7.72	2.33	
	It is complicated	6.92	2.96	
Migration status				*
	Native-born	7.67	2.21	
	First generation migrant	5.46	3.16	
	Second generation migrant	8.33	1.68	
Educational level of parents				*
	Low	7.94	1.44	
	Medium	7.08	2.46	
	High	7.90	2.12	
	Do not know	9.28	1.06	
Can borrow 500 euro from				*
	Nobody	6.75	2.82	
	One person	8.63	1.47	
	Two persons	8.22	2.10	
	Three or more persons	7.57	2.23	

*p<0.05

Compliance with government measures by study related information

Table 40 presents the results on the compliance with COVID-19 government measures by study related information.

- First year students were more compliant with measures compared to all other groups. (mean 8.15 vs 7.57). This difference is statistically significant.
- No significant differences by study program were observed.
- Students who were temporary residents in Greece for more than one year complied significantly less than students who were Greek citizens or permanent residents in Greece.
- Significant differences in the extent of compliance with the COVID-19 measures were observed between 'Agriculture' on one hand and 'Humanities and Arts', 'Social sciences, business and law' and 'Engineering, manufacturing and construction' on the other. Also, significant differences were

observed between 'Health and welfare' and 'Social sciences, business and law'. All other differences were not significant.

		Mean	S.D.	Sign.
First year in higher education				*
	Yes	8.15	2.31	
	No	7.57	2.23	
Study Program				
	Bachelor program	7.70	2.18	
	Master program	7.46	2.63	
	Doctoral program	8.56	1.76	
	Other	9.00	1.01	
Citizenship status				*
	Greek citizen	7.80	2.11	
	Permanent resident	7.41	2.28	
	Temporary resident for more than one year	1.44	3.49	
Field of Study				*
	Education	7.78	2.17	
	Humanities and Arts	7.53	2.30	
	Social sciences, business and law	7.26	2.56	
	Science	8.09	1.93	
	Engineering, manufacturing and construction	7.37	2.24	
	Agriculture	9.33	0.92	
	Health and welfare	8.52	1.50	
	Services	7.33	3.75	
	Other	7.60	1.83	
	Any combination of the above	7.98	1.84	

*$p < 0.05$

APPENDIX

Calculation of weights

In this section, our aim is to highlight some issues on the calculation of weights, taking into consideration the availability of data on higher education students in Greece and the response rate in the survey as a considerable number of respondents quitted the survey early. Data on higher education is provided every year by the Hellenic Statistical Authority. The estimated values below are based on the respective Eurostat's database[7].

Availability of updated student population data

The population framework of the survey includes all students enrolled in Greek higher education institutions. Taking into account that the latest available student population data refer to the academic year 2017/2018, it was deemed necessary to estimate the unknown population (ref. date 2019/2020) using linear extrapolation method (prediction of current data based on the available data).

A. Gender of Students enrolled in the Greek higher education institutions

Gender	Student Population Data	
	2017/2018	**2019/2020***
Male	393,095	413,641
Female	373,779	395,658
	766,874	809,299

* Estimated values

B. Age of Students enrolled in the Greek higher education institutions

Age	Student Population Data	
	2017/2018	**2019/2020***
17-18	54,599	57,635
19-20	121,122	127,855
21-22	111,707	117,908
23-24	79,647	84,046
25+	337,597	356,219
Unknown	62,202	65,636
	766,874	809,299

* Estimated values

C. Parental educational level

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[7] https://ec.europa.eu/eurostat/data/database

D. Birthplace of student population

E. Field of Study (ISCED Classification)

Field of Study	2017/2018	2019/2020*
01 Education	35,875	35,706
02 Arts and humanities	103,150	109,097
03 Social sciences, journalism, and information	96,364	93,956
04 Business, administration, and law	155,969	170,362
05 Natural sciences, mathematics, and statistics	72,371	80,273
06 Information and Communication Technologies (ICTs)	25,793	18,753
07 Engineering, manufacturing, and construction	166,952	182,235
08 Agriculture, forestry, fisheries and veterinary	30,805	28,979
09 Health and welfare	58,775	62,217
10 Services	20,820	27,721
	766,874	809,299

* Estimated values

Weights applied to the analysis

In order to eliminate bias weights were applied to the analysis. As seen in Figure 33, males are under-represented. In Figure 34, we observe that the sample is not representative across all the fields of study. The fields of "Social Sciences" and "Health" are over-represented in the survey. Similarly, "Agriculture, forestry, fisheries and veterinary", "Services and "Other", are under-represented. Taking into account the limited representation of these specific categories these were merged into one, in order to create the weights for the field of study.
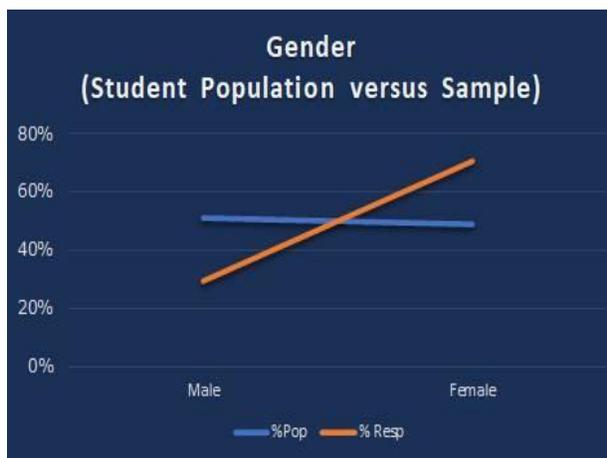
FIGURE 33: DISTRIBUTION OF STUDENT POPULATION VERSUS SAMPLE BY GENDER
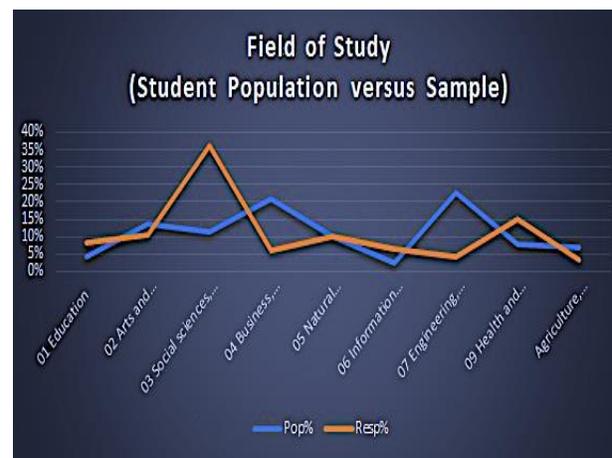
FIGURE 34: DISTRIBUTION OF STUDENT POPULATION VERSUS SAMPLE BY FIELD OF STUDY

Taking into consideration the differences between the distribution of responses and the population of students by gender and field of study, we adjusted the sample survey means and proportions to the student population by weighting the data with a new variable which combined gender with field of study (Table 41).

TABLE 41: POPULATION, RESPONSE AND WEIGHTS BY STRATIFICATION VARIABLES

Gender	Field of study	Student Population Data		Number of responses	Weights	
		2017/2018	2019/2020*		w-1	w-2**
Male	Education	7566	3486	6	0.96	0.42
	Humanities and Arts	33696	36490	20	1.29	1.32
	Social and behavioral sciences, Journalism	41319	39976	52	0.61	0.56
	Business and administration, Law	79027	85609	14	4.31	4.42
	Natural sciences, mathematics, and statistics	41485	45743	25	1.27	1.32
	Information and communication technologies	17514	11927	22	0.61	0.39
	Engineering, manufacturing, and construction	122046	133142	12	7.76	8.02
	Health and welfare	20643	23319	19	0.83	0.89
	Agriculture, Services & Other	29799	33949	3	7.58	8.18
Female	Education	28309	32220	42	0.51	0.55
	Humanities and Arts	69454	72607	42	1.26	1.25
	Social and behavioral sciences, Journalism	55045	53980	159	0.26	0.25
	Business and administration, Law	76942	84753	20	2.93	3.06
	Natural sciences, mathematics, and statistics	30886	34530	35	0.67	0.71
	Information and communication technologies	8279	6826	16	0.39	0.31
	Engineering, manufacturing, and construction	44906	49093	12	2.85	2.96
	Health and welfare	38132	38898	70	0.42	0.40
	Agriculture, Services & Other	21826	22751	16	1.04	1.03
		766874	**809299**	**585**		

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