FACTORS INFLUENCING THE MENTAL HEALTH OF UNIVERSITY STUDENTS IN THE CZECH REPUBLIC

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ABSTRACT

The importance of mental health care has increased significantly in recent years. It is being used more by both the younger and older generations. This article focuses on the mental health of university students in the Czech Republic based on the annual reports data and data from the EUROSTUDENT 8 survey. The only official data source comes from the annual reports published by individual universities regarding students with special needs. Students with mental health problems belong to Group F, which includes Other Mental Health Problems. The number of registered students with specific needs grew by 16% on average every year between 2016 and 2022. For Group F, the numbers increased by 23% annually. More detailed data from the international EUROSTUDENT survey tracks university students' social and living conditions. The dataset contains over 10,000 observations. This paper uses binary logistic regression to look for factors that influence the mental health of university students. The results show that female students, students in humanities, students with financial difficulties, and students with some form of impairment have higher chances of mental health problems.

KEYWORDS

EUROSTUDENT, logistic regression, mental health, university students

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Highlights

- *The average annual growth rate of registered students with special needs between 2016 and 2022 was 16%. The average annual growth rate for students in Group F (other mental health problems) was 23%.*
- *Female students are 1.6 times more likely than males to report a mental health problem.*
- *Students in the study field of Natural sciences, mathematics, and statistics are 2.4 times more likely to report mental health problems than students in the study field of Services.*

INTRODUCTION

The first point of the preamble of the World Health Organization Constitution defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 2020). The concept of mental health is explained as "a state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can make a contribution to his or her community" (WHO, 2004). The definition builds on positivity and productivity. It lacks cultural universality. Galderisi et al. (2015: 231-232) suggest perceiving mental health as "a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society", adding dimensions of managing their own emotion, empathy, and flexibility in facing life demands including those connected with social roles as well as the harmonious interplay between one's body and mind.

Mental health is an essential part of general health and well-being across populations. For university students, it determines not only their quality of life but also their academic success. Numerous studies follow the tight connection between psychological well-being and academic self-efficacy (Tang and Zhu, 2024). The concept of self-efficacy arises from the work of Bandura (1986), which refers to an individual belief in his or her capacity to accomplish various tasks and challenges. Academic self-efficacy is an application of Bandura's classical construct to the educational environment. It manifests itself in setting educational goals and belief in one's capacity to accomplish them (Pajares, 1996) and is positively connected with stress coping (Chýlová and Natovová, 2013). It closely relates to a more recently defined concept of academic buoyancy (Martin and Marsh, 2020) that refers to students' capacity to face challenges and overcome various difficulties and setbacks in the academic environment. Academic buoyancy relates negatively to the ability to deal with academic stress (Putwain

et al., 2024) and to mental health issues in general. It is also negatively predicted by general anxiety and uncertainty stress in students (Hu et al., 2024).

The relationships between students' mental health, well-being, and ability to adaptively manage educational challenges and overcome obstacles are evident. Thus, care for students' mental health is necessary for efficient education (Cornaglia et al., 2015; Mahdavi et al., 2021). However, the reasons for research on the mental health of university students include additional motives, e.g., the occurrence of the first symptoms before the age of 25 in 75% of adults with mental health issues (Pereira et al., 2020). Further, the prevalence of mental health issues among university students increases (Campbell et al., 2022), and faculty staff may feel stressed, anxious, and overwhelmed trying to support them (Ramluggun et al., 2022).

In 2020, 42.3% of university students in the United Kingdom reported severe psychological problems, mostly anxiety disorders and depression, requiring professional help (Pereira et al., 2020). These findings might be explained by the demanding period of the Covid-19 pandemic. The severity of its psychological impact was documented in many studies (de Sousa et al., 2021; Tan et al., 2023). Lee et al. (2021) identified symptoms of moderate to severe stress (including anxieties and depression) in 88% of the respondents recruited from students in a public research university in Kentucky in the early stages of the pandemic. Nevertheless, Kitzrow (2003) already stated an increase in the population of college students with severe mental issues two decades ago.

In the seek for critical factors that increase the risk of mental health issues of students, research revealed the contributing role of financial problems (Bøe et al., 2021). Poverty in childhood increases the probability of anxiety, depression, and suicidal thoughts. On the other hand, students from rich families also reported more frequent suicidal thoughts. Thus, a 'comfortable' level of financial security was identified as optimal (Eisenberg et al., 2007).

Female students are often identified as an 'at-risk' population in mental health research (Pereira et al., 2020; Tan et al., 2023). This finding corresponds to higher vulnerability to stress in the female population in general (Grevenstein et al., 2018; Marsh et al., 2018; Gutiérrez-Hernández et al., 2021) and a stronger tendency to feelings of isolation and over-identification with their emotions compared with males (Krejčová et al., 2023). In contrast, the higher prevalence of mental health issues in the female population was not supported by the research by Campbell et al. (2022). Further, the highest tendency to mental health problems and diagnosis was reported by non-binary students (Pereira et al., 2020).

The student's study field was not proved as an unambiguous factor by meta-analysis of mental health research of students (Tan et al., 2023) but may play a role from the viewpoint of single studies. A higher prevalence was detected for medical students, which is escalated by unsupportive educational climates and stigmatization of mental issues that increase tendencies to seek appropriate help (Medisauskaite et al., 2023). In this context, more studies refer to loneliness as a critical factor in students' mental health (Campbell et al., 2022; Pereira et al., 2020) and the protective influence of self-compassion (Kotera et al., 2019), defined as emotionally positive, caring, and concerning self-attitude (Neff, 2015).

In the Czech Republic, the stigma of people with mental health issues is a serious problem. However, Winkler et al. (2021) detected slight positive changes in correspondence with targeted anti-stigma campaigns. Furthermore, mental health in this region has been affected not only by the COVID-19 pandemic in recent years but also by the war conflict in Ukraine (Koubová and Kimhi, 2024). The interplay of these circumstances stresses the necessity of mental health research in the Czech Republic.

The longitudinal research detected an increase in the severity of stress perception and depressive symptoms during the COVID-19 pandemic in the Czech Republic. During the lockdown, the general level of stress, i.e., the number of respondents who assessed their stress as "moderate" or "high," was 1.4 times higher compared with the state before the lockdown. An increase in depression was even more substantial, with 5.5 times more respondents having depressive symptoms. The prevalence was higher in females but did not vary substantially across respondents' ages (Novotný et al., 2020). Although spending the quarantine alone or with others was not significant regarding the severity of mental health issues, the feeling of loneliness was identified as the biggest risk factor regarding the severity of stress and depression (Novotný et al., 2020).

Rubáš et al. (2022) mapped the destructive impact of the limited opportunity to spend time outside during a lockdown on one's health and well-being. The study of the sample of Czech students from elementary schools to universities confirmed a more serious effect on female respondents than males. "The lack of outdoor stay worsened the mental well-being of 55% of students and the same proportion of young people. Parents noticed their children's health worsening in about a third of cases and an impact on their psyche in 42%" (Rubáš et al., 2022: 113).

In the international comparison, Czech students reported lower scores of perceived stress and depressive symptoms in comparison with their peers in Poland, Slovenia, Ukraine, Russia, Germany, Turkey, Israel, and Colombia. Generally, 61% of respondents reported high perceived stress, but only 30% in the Czech sample. The prevalence of depressive symptoms in Czech respondents was only 21% (compared with 40% in the whole research sample). Nevertheless, the variability among nations was not high, and especially females from all involved countries were evaluated as more at-risk regarding stress, anxiety, and depression (Ochnik et al., 2021). Further, the significance of these results should be assessed in correspondence with the general impact of COVID-19 on selected countries. Novotný et al. (2020) described the impact of COVID-19 in the Czech Republic as relatively mild in terms of the number of infected people and hospitalized, as well as victims. Therefore, the international comparison of Ochnik et al. (2021) should be interpreted with regard to the findings and does not contradict the severity of mental health issues in Czech students.

The mental health of university students in the Czech Republic has not yet been monitored in detail. One reason for this is

the lack of data in the area. This paper aims to start a discussion on the mental health of university students in the Czech Republic based on the available data. Firstly, the paper describes the available data sources. Using logistic regression, it further focuses on finding factors that influence the mental health of university students in the Czech Republic.

MATERIAL AND METHODS

National data source

A single official data source in the Czech Republic captures students with special needs, i.e., the annual reports published by individual universities. A university collects the data based on the Methodological Guideline on Financing the Increased Costs of Students with Specific Needs (hereafter referred to as the Methodological Guideline), an annex to the Rules for the Provision of Contributions and Subsidies to Public Universities by the Ministry of Education, Youth, and Sports (MEYS, 2024b). The Methodological Guideline is updated annually and supports funding the increased costs of educating students with special needs. The Methodological Guideline sets out the conditions and measures that a public higher education institution must meet to benefit from the funding of the subsidy programme (MEYS, 2024b). The Methodological Guideline defines the categories of students with specific needs. It is based on the sub-conditions for studying at the university, and their financial impact is taken into account. According to the Methodological Guideline, students with special needs are divided into the following groups:

- A - students with visual impairment
- B - students with hearing impairment
- C - students with physical impairment
- D - students with specific learning impairment
- E - students with autism spectrum disorder
- F - students with other difficulties

Students with mental problems are classified in Group F. This group is defined as 'A student who is objectively prevented by another psychological disorder or difficulty, including non-autistic neurodevelopmental disorders, i.e., impaired language, speech, and other communication skills, or chronic somatic illness, from fulfilling academic responsibilities in a standard manner' (MEYS, 2024b).

Consensus statistics from annual reports are published by the Association of Providers of Services to Students with Special Needs in Higher Education (hereafter referred to as the Association). The Association brings together higher education institutions in the Czech Republic that aim to fulfil the idea of "higher education for all". The data show an increase in the number of registered students with special needs from less than 900 students in 2012 to more than 4,000 students in 2022 (Figure 1). Data for Group F are available for the first time since 2016, when 335 students were registered in Group F (i.e., 20% of the total number of registered students). In 2022, the group comprised 1,164 students (i.e., 29% of registered students). This is the second most represented category (the first being Group D - students with specific learning impairments). However, it should be noted that this category includes more specific cases. The average annual growth rate between 2016 and 2022 in the total number of registered students is 16%. For Group F, the average annual growth rate reaches 23%. The number of students with other difficulties is growing faster than the total number of registered students with special needs.

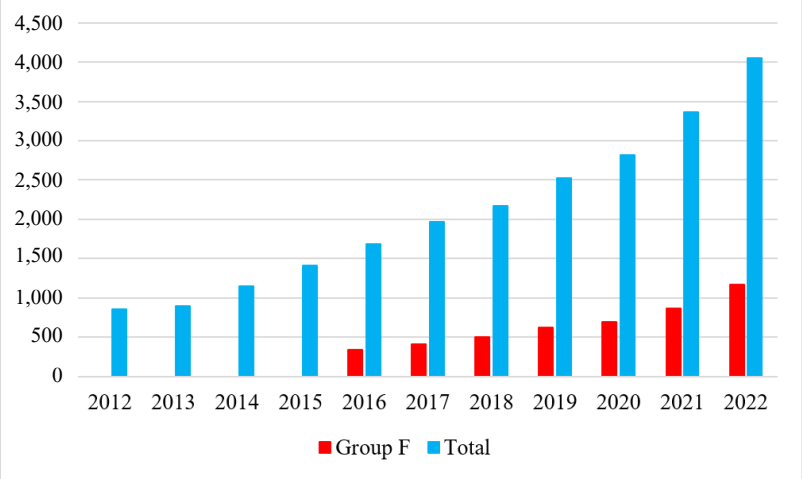
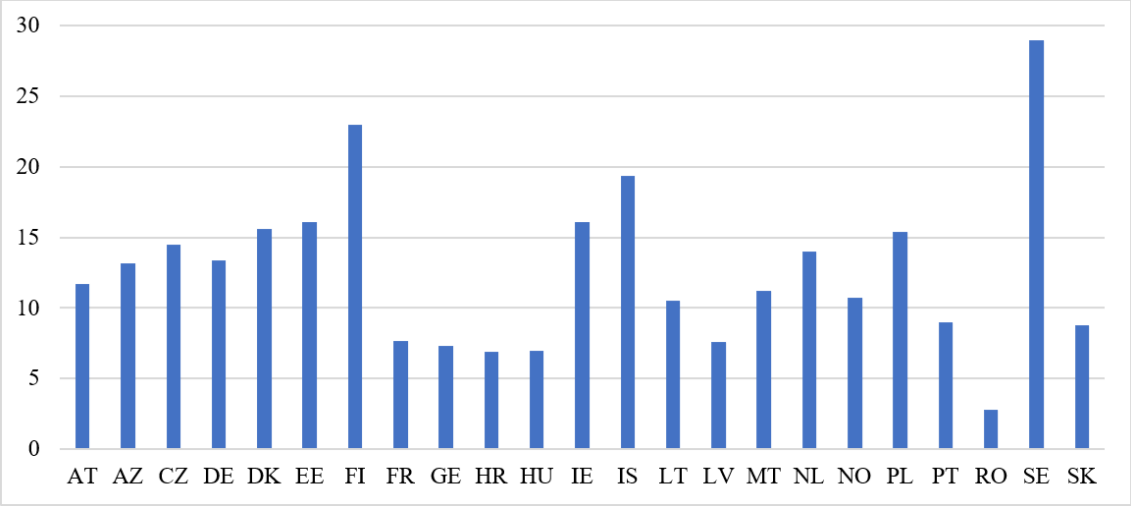


Figure 1: Registered students with special needs and students in Group F, 2012-2022 (source: Association)

International data source

In addition to official data, data from the national part of the international EUROSTUDENT survey on university students' social and living conditions are available. This unique data source covers areas related to study satisfaction, commuting, housing, financial demands of studying, foreign exchange visits, and students' health problems. It is a survey that has been a tradition for several years. Questions on health disadvantages are a regular part of the questionnaire. The Czech Republic has already participated in the initial waves of the survey. Data are available from the fourth wave of the survey, which took place in 2009. In that year, 3% of students detected mental health problems. In the fifth wave of the survey (the year 2013), the volume grew to 4%, with 5% of students in the sixth wave (the year 2016), 7% in the seventh wave (the year 2019), and 15% of students in the most recent eighth wave (the year 2022). The EUROSTUDENT 8 results (Figure 2) of other participating countries show the highest proportion of university students

with mental health problems in Sweden (29%), Finland (23%), and Iceland (19.4%). In contrast, the lowest proportions of students reporting mental health problems are in Croatia (6.9%) and Germany (7.3%). It is not clear whether the differences in the level of mental health problems across countries reflect different levels of prevalence. The most common mental health problems in all countries are depression and anxiety disorder. In contrast, psychosis is the least prevalent (Cuppen et al., 2024). However, this is a subjective assessment of individual students, not a record and information of who is being treated by a professional for their health problems. According to Cuppen et al. (2024), students with an official diagnosis who are being treated for mental health problems make up the largest group of students who have reported having mental health problems in almost all countries. The highest proportion of such students is in Finland (11%) and Sweden (8%). In contrast, the lowest proportion is in Romania (less than 1%). In the Czech Republic, the proportion reaches 6%.



Note: AT – Austria, AZ – Azerbaijan, CZ – Czech Republic, DE – Germany, DK – Denmark, EE – Estonia, FI – Finland, FR – France, GE – Georgia, HR – Croatia, HU – Hungary, IE -Ireland, IS – Iceland, LT – Lithuania, LV – Latvia, MT – Malta, NL – the Netherlands, NO – Norway, PL – Poland, PT – Portugal, RO – Romania, SE – Sweden, SK – Slovakia.

Figure 2: Students with mental health problems, 2022, % (source: EUROSTUDENT 8)

EUROSTUDENT 8 IN THE CZECH REPUBLIC

The latest eighth wave of the survey was conducted between 2021 and 2024. The Ministry of Education, Youth and Sports sponsored the survey, and the Centre for Higher Education Studies was the implementer of the survey. Data collection took place at the end of the summer semester of 2022 (May to July). All public and some private universities participated. Thus, more than 250,000 students at the undergraduate and graduate levels completed the questionnaire (CHES, 2024). The dataset this paper uses for the analysis includes responses from 15 thousand respondents and is weighted to the population of university students in the Czech Republic. This allows for generalized conclusions. The analysis disregarded the age category of 30 years and above as it was not irrelevant for the purpose of the paper. They represent groups that are at the end of their studies or studying a part-time form of study and have a significantly lower proportion of mental health problems, which could affect the analysis. The paper also excluded the middle category of 'middle difficulties' in the financial problems section based on the survey implementer's recommendation. The adjusted dataset contains responses from 10,086 students. Some variables lack observations, so the sum may not add up. Women have the highest representation (54.5%), as well as the age category of 22 to 25 years (41.9%) and undergraduate students (63.4%), see Table 1.

		number of students	in %
Age	up to 21 years	4,080	40.5
	22 to < 25 years	4,224	41.9
	25 to < 30 years	1,782	17.6
Gender	Female	5,496	54.5
	Male	4,590	45.5
Qualification studied for	Bachelor	6,387	63.4
	Master	2,404	23.8
	Long master's degree	1,295	12.8

Table 1: Description of the dataset (source: EUROSTUDENT 8)

Based on previous research, the paper used variables defined by Eurostudent focus groups (Hauschildt et al., 2024) to analyse factors influencing the mental health of university students:

- Field of study: Fields of study based on the international standard classification (ISCED_F 2013).
- Study intensity: Students were grouped into three categories according to their weekly workload in a typical week for study-related activities (taught courses and personal study time). Low-intensity students spend between 0 and 20 hours per week on study-related activities. Medium-intensity students spend more than 20 but no more than 40 hours per week on study-related activities. High-intensity students spend more than 40 hours per week on study-related activities.
- The number of hours students work from time to time or during the whole lecture period, including non-working students (0h): the number of hours students work during the current lecture period.
- Students with/without financial difficulties: Students' self-assessment on whether they are facing financial difficulties on a scale from 1 "very serious" to 5 "none at all"; grouped into two categories. The first one consists of answer options 1+2, "(very) serious", describing those with financial difficulties. The second consists of answer categories 4+5, "no (none at all)," and maps the students without financial difficulties.
- Students with/without impairment limiting them in their studies.
- Form of housing: Students (not) living with parents during the current lecture period (Monday to Friday).
- Students in their first year of higher education.
- Pre-Covid Students: Students who studied/did not study before the COVID-19 pandemic.
- Indication of impairment/disability/health problems (Yes, mental health problem): students with/without disability limiting them in their studies.

Among the fields of study, Business administration and law are the most represented (20.5%), followed by Health and welfare and Engineering, manufacturing, and construction (approximately 13%). The lowest proportion of students is found in Agriculture, forestry, fisheries, and veterinary (3.7%) and Services (4.6%). Regarding study intensity, the medium-intensity group is the least represented (48.9%). Students are mostly working part-time (45.1%). According to the survey results, students generally do not have financial problems (65.3%). Three-quarters of Czech university students have no impairment (75.1%), live without parents (64.1%), and are studying at university for the first time (79%). More than half of university students started before the COVID-19 pandemic (55.1%), see Table 2.

		number of students	in %
Field of study	Education	1,106	11.0
	Arts and humanities	952	9.4
	Social sciences, journalism, and information	961	9.5
	Business, administration, and law	2,067	20.5
	Natural sciences, mathematics, and statistics	707	7.0
	ICTs	848	8.4
	Engineering, manufacturing, and construction	1,294	12.8
	Agriculture, forestry, fisheries and veterinary	375	3.7
	Health and welfare	1,303	12.9
	Services	468	4.6
Study intensity	Low intensity	2,007	20.8
	Medium intensity	4,719	48.9
	High intensity	2,927	30.3
Number of hours students work from time to time OR during the whole lecture period, including non-working students (0h)	0h	3,397	33.9
	1-20h	4,525	45.1
	> 20h	2,106	21.0
Students with/without financial difficulties	Students with financial difficulties	3,497	34.7
	Students without financial difficulties	6,588	65.3
Students with/without impairment limiting them in their studies	Students without impairment	7,458	75.1
	Students with impairment	2,469	24.9
Form of housing	Students living with parents	3,621	35.9
	Students not living with parents	6,464	64.1
Students in their first year of HE	Students in their first year of studying in higher education	2,099	21.0
	Students studying in higher education for longer than 1 year	7,905	79.0
Pre-Covid Student	Enrolled before Covid-19 outbreak	5,554	55.1
	Enrolled after the Covid-19 outbreak	4,531	44.9
Indication of impartment/disability/health problems…Yes, mental health problem	No	8,565	84.9
	Yes	1,521	15.1

Table 2: Description of the dataset (source: EUROSTUDENT 8)

The paper uses binary logistic regression with mental health problems as the dependent variable to search for factors influencing students' mental health, predicting the probability of the occurrence of outcome Y knowing the value of independent variables X_1. In the simplest form, the equation becomes (Field, 2009):

$$P(Y) = \frac{1}{1 + e^{-(b_0 + b_1 X_{1i})}}, \quad (1)$$

where $P(Y)$ refers to the probability of Y occurring, e represents the base of natural logarithms, b_0 refers to the constant, X_{1i} represents predictor variables, and b_1 refers to the predictor. The parameters are estimated using the maximum likelihood method.

RESULTS

Descriptive statistics

First, the dependence of each input variable on the dependent mental health variable was examined. At the 5% level of significance, mental health problems depend on one's age, gender, level of study, field of study, study intensity, and whether the student has financial or health problems.

Table 3 shows that students across age categories suffer from mental health problems similarly (14.3% of students under 21 years of age, 16.1% of students in the age category 25 to 30 years). Women are more likely to suffer from mental health problems (17.3%). The highest proportion of students with mental health problems is at the bachelor's degree level (15.2%). The highest incidence of mental health problems in the field of study is among Arts and humanities (24.9%) and Agriculture, forestry, fisheries, and veterinary (19.9%) students. However, these fields of study contain the lowest numbers of students. Services report the lowest proportions of students with mental health problems (8.2%), followed by Business, administration, and law (10.6%). Students with high study intensity (16.4%) are more likely to suffer from mental health problems than students with low study intensity (12.6%). Students with financial problems are more likely to suffer from mental health problems (21.1%) than students without financial problems (10.8%). Students with

		No	Yes
Age	up to 21 years	85.7	14.3
	22 to < 25 years	84.3	15.7
	25 to < 30 years	83.9	16.1
Gender	Female	82.7	17.3
	Male	89.6	10.4
Qualification studied for	Bachelor	84.8	15.2
	Master	87.7	12.3
	Long master's degree	86.5	13.5
Field of study	Education	84.5	15.5
	Arts and humanities	75.1	24.9
	Social sciences, journalism, and information	83.8	16.2
	Business, administration, and law	89.4	10.6
	Natural sciences, mathematics, and statistics	82.6	17.4
	ICTs	87.9	12.1
	Engineering, manufacturing, and construction	89.0	11.0
	Agriculture, forestry, fisheries and veterinary	80.1	19.9
	Health and welfare	86.2	13.8
	Services	91.8	8.2
Study intensity	Low intensity	87.4	12.6
	Medium intensity	86.2	13.8
	High intensity	83.6	16.4
Students with/without financial difficulties	Students with	78.9	21.1
	Students without	89.2	10.8
Students with/without impairment limiting them in their studies	Students without impairment	97.6	2.4
	Students with impairment	49.3	50.7

Table 3: Occurrence of mental health in university students by differing variables, % (source: Authors' calculation based on the EUROSTUDENT 8 data)

impairment suffer from mental health problems in 50%.

Logistic regression

The significance of the variables for the model using logistic regression was tested before fitting the model. At the 5% level of significance, the presence of mental health problems is independent of age, level of study, study intensity, number of hours worked, form of housing, whether the student is in the first year of study, or whether the student started studying before the COVID-19 pandemic or after the COVID-19 pandemic. The first analysis shows that mental health problems are most likely to be influenced by gender, the field of study, financial problems, and impairment-limiting studies (Table 4). Subsequently, binary logistic regression was used to search

		Exp(B)
Age	Total	
	up to 21 years	0.886
	22 to < 25 years	1.017
Gender	Female	1.580***
Qualification studied for	Total	
	Bachelor	1.064
	Master	0.946
Field of study	Total	
	Education	1.594*
	Arts and humanities	2.573***
	Social sciences, journalism, and information	2.021**
	Business, administration, and law	1.138
	Natural sciences, mathematics, and statistics	2.146**
	ICTs	1.603
	Engineering, manufacturing, and construction	1.186
	Agriculture, forestry, fisheries and veterinary	1.328
	Health and welfare	1.192
Study intensity	Total	
	Low intensity	0.945
	Medium intensity	1.015
Number of working hours	Total	
	0h	0.952
	1-20h	0.843
Financial difficulties	Students with financial difficulties	1.308***
Studies impairment	Students with impairment	39.017***
Form of housing	Students living with parents	0.950
Student's first year of study	Students in their first year of studying in higher education	1.039
Pre-Covid student	Enrolled before Covid-19 outbreak	1.016
	Constant	0.550*

*Note: significance level *0.05, **0.01, ***0.001*

Table 4: Statistical significance of variables in the model (source: Authors' calculation based on the EUROSTUDENT 8 data)

for factors affecting the mental health of university students. The dependent variable was students' mental health problems. Females are 1.6 times more likely to suffer from mental health problems compared to males. Education students are 1.6 times more likely to have mental health problems than students in the study field of Services. Arts and humanities students are 2.6 times more likely to report mental health problems than students in the study field of Services. Natural science, mathematics, and statistics students are 2.1 times more likely to suffer from mental health problems than students in the study field of Services. Social sciences, journalism, and information students are 2 times more likely to report mental health problems than students in the study field Services. Students dealing with financial difficulties are 1.4 times more likely to suffer from mental health problems than students who have no financial difficulties. Students experiencing impairment limiting their studies are 39.6 times more likely to report mental health problems (Table 5).

		B	*S.E.*	Wald	Exp(*B*)
Gender	Female	0.436	0.079	30.458	1.546***
Field of study	Total			68.163	
	Education	0.475	0.217	4.779	1.607*
	Arts and humanities	0.947	0.216	19.244	2.579***
	Social sciences, journalism, and information	0.679	0.222	9.322	1.971**
	Business, administration, and law	0.105	0.210	0.251	1.111
	Natural sciences, mathematics, and statistics	0.725	0.231	9.812	2.065**
	ICTs	0.430	0.233	3.407	1.538
	Engineering, manufacturing, and construction	0.138	0.220	0.397	1.148
	Agriculture, forestry, fisheries and veterinary	0.312	0.255	1.494	1.366
	Health and welfare	0.198	0.214	0.856	1.219
Financial difficulties	Students with financial difficulties	0.298	0.073	16.847	1.347***
Studies impairment	Students with impairment	3.679	0.084	1918.882	39.613***
	Constant	-0.677	0.201	11.364	0.508***

*Note: Exp(B) - Odds ratios; significance level *0.05, **0.01, ***0.001*

Table 5: Binary logistic regression, mental health, 2024 (source: Authors' calculation based on the EUROSTUDENT 8 data)

DISCUSSION

Mental health, in general, is an important topic now. This article attempts to contribute to the debate with its perspective on the mental health of university students in the Czech Republic. Firstly, it analysed the available data sources. Official data on registered students with special needs in the Czech Republic, which include students with mental health problems, are available from the annual reports published by individual universities. Comprehensive data are subsequently published by the Association of Providers of Services to Students with Specific Needs in Higher Education. The published data shows that the average annual growth rate of registered students with specific needs between 2016 and 2022 was 16%. The number of registered students in Group F, which includes students with mental health issues, grew at an average annual rate of 23%. The difference is significant and can also be attributed to (but not limited to) the COVID-19 pandemic. The alternative data source the paper used for the subsequent analysis comes from the national part of the international survey on social and living conditions of university students, EUROSTUDENT 8. This is a unique survey that provides a comprehensive picture of the living situation of students. The data were weighted to the population of students in the Czech Republic, so the conclusions from the analyses allowed generalization.

The results are partly consistent with the findings of similar studies. The data in the Czech Republic also show that mental health depends on gender and students' financial problems. Similar to Pereira et al. (2020) and Tan et al. (2023), this paper found a relationship between mental health problems and gender in the data on Czech university students, with women being at higher risk. This finding is consistent with stronger vulnerability to stress identified in the female population (Grevenstein et al., 2018; Marsh et al., 2018; Gutiérrez-Hernández et al., 2021). Compared with Pereira et al. (2020), the research sample used in this paper did not contain any respondents who identified themselves as non-binary, making it impossible to compare the group with male/female respondents. However, the research by Pereira et al. (2020) indicates that mental health problems of non-binary students should be one of the future well-being-related research topics in the Czech Republic.

The dependence of mental health on financial problems and the high proportion of students with financial problems revealed in our study is fully in line with the findings made by Eisenberg et al. (2007). Students from poorer backgrounds are more likely to have mental health problems than students from richer backgrounds. This fact creates a self-reinforcing effect because the capability to pay for psychological care beyond health insurance makes it available earlier.

In contrast to the analysis by Tan et al. (2023), for example, this paper found a dependence between the field of study and mental problems. Students of Arts and humanities (24.9%) and Agriculture, forestry, fisheries, and veterinary (19.9%) declare mental problems with the highest proportion. On the other hand, students of Services (8.2%) and Business, administration, and law (10.6%) report mental problems with the lowest frequency. Furthermore, students with high study intensity (16.4%) are more likely to suffer from mental health problems. Therefore, some special interventions directed at coping strategies should be targeted at this population.

COVID-19 significantly affected individuals' mental well-being, but unlike the analyses by Rubáš et al. (2022) or Novotný et al. (2020), this paper found no relationship between the period when a student started studying (pre/post-pandemic and mental health problems in the EUROSTUDENT 8 data.

The paper used binary logistic regression to find the odds ratio, which allowed us to conclude that women are 1.6 times more likely than men to report mental health problems. Education students are 1.6 times more likely to suffer from a mental health problem than students in the study field of Services. Arts and humanities students are 2.6 times more likely to report a mental health problem than students in the study field of Services. Natural science, mathematics, and statistics students are 2.1 times more likely to suffer from a mental health problem than students in the study field of Services. Students dealing with financial difficulties are 1.4 times more likely to report a mental health problem than students who experience no financial difficulties. Students having limiting impairments in their studies are 39.6 times more likely to suffer from mental health problems than students without such impairments.

The presented analysis has its limitations. Firstly, the number

of registered students with mental health problems increases along with the increased capacity of specialized centres. However, the number of students who identified their mental health problems in the EUROSTUDENT 8 survey was not affected. The availability of data represents another aspect. The available data from the 2022 survey is the only data source of this magnitude that will allow us to conduct an initial analysis. Moreover, this source contains subjective evaluation by the students, not evidence. Thus, the results are subjective. To find objective results would require psychological testing of students, for which there is no capacity. The authors are aware that the results may be influenced by the level of self-reflective skills but also by the openness in admitting mental health issues that are shaped by the level of stigmatization in the country (Winkler et al., 2021).

The mental health of students was hardly reflected at the national level until recently. The strategic plan of the Ministry of Education, Youth, and Sports (MEYS) for the period from 2021 onwards addresses the topic of student mental health only in one laconic bullet point in the chapter "Other significant themes" (MEYS, 2020: 66), together with the mental health of staff members and the need to prevent the burnout syndrome. The five-year strategic plan is followed by annual implementation plans. In the 2025 Implementation Plan of the Strategic Intent for Higher Education (2024a), the topic is already elaborated in more detail. It represents an explicit part of the priority area as a new item 1. H "Promote the well-being of learners and staff in higher education" (MEYS, 2024a: 5). Thus, it seems that the MEYS is becoming more and more aware of the topic of student mental health and the strategic plans and implementation plans of universities show that universities also become aware of it, compare, e.g., the Masaryk University Strategic Plan Implementation Plan (MU, 2024).

In the context of the analysis results, the authors recommend that the Ministry of Education, Youth, and Sports reopen the issue of insufficient financial aid for students (e.g., Münich and Kořínek, 2021). Beyond the conclusions of Münich and Kořínek (2021), inadequate aid to students exacerbates their mental discomfort, among other consequences. Universities are advised to pay maximum attention to mental health issues and, where appropriate, to consider disciplinary differences, for example, when allocating resources and staff capacity for psychological counselling.

CONCLUSION

The results presented in this paper show that the number of students with mental health problems at universities in the Czech Republic has been increasing in recent years. Mental health problems depend on the gender of the student (women are a more vulnerable group than men), on their financial situation (students with financial problems are more vulnerable), and on the field of study.

For further analysis, it would be appropriate to modify the dataset in the part of the fields of study and narrow down the list so that a prediction model is prepared. This prediction model could subsequently imply whether the person in question, with his or her specific characteristics (gender, age, field of study, etc.), is more likely to suffer from mental health problems. This kind of analysis would enable more targeted interventions but also preventive care that could increase the efficiency of psychological and psychiatric services and, consequently, the mental health of students in the Czech Republic.

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