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RELATIONSHIPS BETWEEN BURNOUT, SELF-ESTEEM AND PSYCHOLOGICALWELL-BEING IN UNIVERSITY STUDENTS

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Summary: The authors conducted a quantitative cross-sectional study to investigate the relationships between burnout, self-esteem and psychological well-being among university students in the health sciences. The aim of the study was to uncover the psychosocial risk factors that may influence students' health behaviors and mental health status. A total of 281 full-time students (n = 281; 14.9% male; 85.1% female) from the Faculty of Health Sciences at the University of Miskolc took part in the study (mean age: 21.1 years; standard deviation: 2.9). According to its composition, 54.1 of the sample consisted of physiotherapists, 15.8% of public health nurses, 14.3% of medical diagnosticians, 10% of health tourism managers and 5.7% of nurses. In addition to socio-demographic questions, the survey used the Student Burnout Inventory to measure burnout, the Rosenberg Self-Esteem Scale (RSES-H) to measure self-esteem, the Perceived Stress Scale (PSS-10) to measure the subjective experience of stress and the Depression Anxiety Stress Scales (DASS-21) to assess mental health. The results indicate that the self-esteem and psychological well-being of university students are strongly correlated with the likelihood of burnout. Furthermore, these things have a significant impact on their health behaviors and health status. An inappropriate career choice and a lack of support from the environment can lead to a change of subject or even dropping out of college. The findings highlight the complex issues of student burnout and dropout and emphasize the role of educational institutions in providing early detection and appropriate support, which are essential for maintaining student well-being and achieving academic success.

Keywords: *student burnout, self-esteem, psychological well-being, health-science students*

1. INTRODUCTION

Student burnout is a condition in which students experience emotional, mental and physical exhaustion due to prolonged stress and overwork. This condition is particularly common in higher education, where academic demands, exam preparation and personal life issues can lead to the development of burnout symptoms. A negative consequence of prolonged, untreated stress and failure is that students may give up their studies. Although burnout and dropout are complex problems resulting from the interaction of multiple factors, early identification and appropriate support within the institutional environment are crucial to ensure student

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wellbeing and successful completion of studies. Educational institutions have an important role to play in this, as they can help students manage stress, maintain mental wellbeing and achieve academic success by developing and maintaining appropriate support systems.

2. LITERATURE REVIEW

Burnout is a health disorder that develops in a work environment as a result of unsuccessfully coping with chronic stress in the workplace [1]. Research into burnout syndrome has come a long way in the last fifty years. Originally, it was considered a psychological phenomenon that affected healthcare professionals [2]. It was later observed in other human service professions and eventually defined as a work-life management difficulty affecting a wide range of people [3]. Although the concept of burnout originally referred to the consequences of work-related interpersonal chronic stress, in recent decades it has been extended to other fields, including education, where it is defined as academic burnout [4]. The concept of academic burnout is based on the observation that institutional educational functions are similar to a workplace. Research data suggest that symptoms can occur as early as elementary school students, and longitudinal studies suggest that these symptoms worsen in high school and university [5]. The structured schedule, the obligation to attend classes, the need to fulfill practical requirements, and the need to pass exams can collectively be considered "work" and can exert psychological pressure that occasionally leads to overload [6, 7, 8]. The symptoms caused by chronic overload in the university environment are very similar to the work-related burnout symptoms experienced by adults: emotional exhaustion related to academic demands, decreased interest in university activities, cynical reactions, indifferent attitudes, dissatisfaction with performance, decreased personal effectiveness, and a sense of inadequacy [4, 9]. In addition to the theoretical basis, research in this area shows that among the three different areas, emotional exhaustion and cynicism stand out as the core of the burnout syndrome [10].

Academic burnout is associated with numerous negative factors. Previous studies have identified several individual and institutional characteristics as risk factors. Among the individual characteristics, socio-demographic factors such as gender, age and financial wealth are noteworthy. When examining gender differences, higher prevalence rates have been found in girls in high school [11] and boys in university [12]; in the latter group, longitudinal studies have shown a faster escalation of symptoms [13] (Salmela-Aro and Tykkynen, 2012). Age and length of study are also linked to burnout: younger students in their first year of study were found to have more symptoms at the beginning of their studies [14]. When examining the financial background of students, those who work alongside their studies appear to be more prone to burnout [15]. Recently, a comprehensive study confirmed higher levels of burnout among university students in low- and middle-income countries [16]. Furthermore, it is important to emphasize the role of interpersonal factors. The

presence of social support experienced by university students decreases the risk of burnout, while its absence increases the risk [8, 17].

The symptoms of academic burnout are linked to certain intrapersonal factors. Research shows that self-esteem generally has a negative correlation with burnout [18], and accordingly, students with higher self-esteem are less likely to be affected by burnout symptoms [11, 19, 20, 21]. In addition, certain forms of perfectionism are associated with the occurrence of burnout symptoms: maladaptive perfectionism and the desire to fulfill external expectations in particular are considered risk factors for the development of burnout. Symptoms are most likely to occur in students who strive for excellent results primarily due to external expectations and experience predominantly negative feelings when their performance is evaluated [22].

Studies conducted in recent years have shown that burnout in university students is associated with poorer academic performance, more frequent absenteeism, higher dropout rates, sleep disturbances, more frequent substance use and poorer mental and physical health characteristics [6, 7, 16, 23]. At the same time, the results of longitudinal studies underline the persistence of the effects after graduation and the worsening of burnout symptoms [24]. Although international and Hungarian studies on academic burnout have primarily focused on medical students in recent years [23, 25, 26, 27, 28], some studies have also reported data on nursing students [29,30,31]. However, researchers warn that it would be a mistake to assume that students in other disciplines are not affected by burnout, so an investigation of the phenomenon in other university students also seems necessary [27], especially in light of recent data indicating a worldwide worsening of student burnout during the COVID-19 pandemic [32].

3. THE AIM OF EMPIRICAL RESEARCH AND THE METHODOLOGY APPLIED

The main objective of our research is to investigate and deepen the relationships between burnout, self-esteem and psychological well-being in university students studying in the field of health sciences. We also wanted to explore various psychosocial risk factors that may influence students' health behaviors and mental health status. The online questionnaire contains questions aimed at capturing socio-demographic background variables and health behaviors and includes a standardized, validated questionnaire in Hungarian closely related to the research topic.

1. The Student Burnout Questionnaire [33, 34], Hungarian version [35] is a self-administered measuring instrument consisting of nine items. Respondents rate their answers on a six-point Likert scale (1 = "Does not apply to me at all"; 6 = "Applies to me completely"). The questionnaire divides the burnout symptoms into three subscales: emotional exhaustion, cynicism and the feeling of incapacity.

2. The Rosenberg Self-Esteem Scale [36], Hungarian version [37] is a ten-point scale that measures general self-esteem on a four-point Likert scale (1 = strongly disagree, 4 = strongly agree).

3. The Perceived Stress Scale (PSS-10) [38] Hungarian version [39] measures the subjective perception of stress. The questionnaire consists of 10 items, which are

rated on a 5-point Likert scale (0–4). Higher scores indicate a greater frequency of stressors and a perceived effectiveness in coping with these stressors.

4. The Depression, Anxiety and Stress Scale (DASS-21) is a self-assessment questionnaire consisting of 21 items, with seven items each measuring symptoms of depression, anxiety and stress. The symptoms are rated on a 4-point scale (0 = Does not apply to me at all to 3 = Applies to me most of the time) and reflect the experience of the last week before completing the questionnaire. Each scale ranges from a minimum value of 0 to a maximum value of 21 [40].

The data collection was conducted online among full-time students of the Faculty of Health Sciences at the University of Miskolc in February 2024, after the winter examination period. Students were invited to participate voluntarily and anonymously through the university's Neptune system.

Data analysis included frequency and relative frequency distributions as well as analysis of associations using chi-square tests, correlation analysis and ANOVA. Data processing was performed using the SPSS 25.0 software package.

The research was approved by the Regional/Institutional Ethics Committee for Science and Research of the Central Hospital and University Teaching Hospital of Borsod-Abaúj-Zemplén County (license no.: BORS-08/2024).

4. RESULTS

4.1. Characteristics of the sample

The socio-demographic characteristics of the sample can be seen in *Table 1*.

Table 1

The socio-demographic characteristics of the sample

The size of the sample	n = 281	
Gender distribution	Male:14.9%	Female:85.1%
Age	21.1±2.9 years	
Department Health visitor Physiotherapist Nurse Medical diagnostic analyst Health tourist manager	 15.8% 54.1% 5.7% 14.3% 10%	
Place of habitation Budapest Miskolc Other large city City Village	 5.0% 25.3% 9.6% 31.7% 28.5%	
Place of residence Home (Miskolc) Commuter	 24.3% 28.2%	

Dormitory	33.6%
Rented apartment	12.5%
Relatives	1.4%
The family's financial situation	
Good	25.9%
Average	48.2%
Satisfactory	14.2%
Poor	3.6%
Do not wish to provide information	8.0%
Is there a member of your family with a higher education?	
Yes, both parents	17.4%
Yes, one parent	27.8%
Yes, one sibling	14.2%
Yes, grandparent	1.1%
No	39.5%
Work alongside studies	26.6%
Average travel time between university and current place of residence	52.1 minute ±49.8

4.2. Academic performance

Students enrolled on average in 2022 ±1.23, with the earliest enrollment dating back to 2018. The decision to apply for a particular degree program was influenced by various reasons, but the vast majority made a conscious decision based on their interest (84.7%). However, some were influenced by family (39.5%) or friends (30.1%). Some students chose their degree program because they did not know where else to apply (14.9%), while another 18.1% were not admitted elsewhere.

During their studies, 6.8% of students changed their major, primarily because they realized that their career choice was not well thought out. The most frequent change of major was observed among students in the Organization of Health Tourism students. The academic performance achieved by students students was slightly below the performance requirements specified in the sample curriculum *(Table 1)*. The expected performance record according to the sample study plan is 30 credits per semester.

Table 2

Average credit completion by year

Year	Average credits completed
I.	27.55 ±3.7
II.	90.46 ±20.6
III.	148.29 ±52.5
IV.	201.38 ±34.6

In the first year there is an average deficit of 3 credits, which is made up in the second year. In the third year there is also a minimal credit deficit, which increases in the fourth year.

In the breakdown of credits achieved by program *(Table 3)*, it is clear that students in the Health Tourism Management and Public Health Nursing programs are making the most progress according to the model curricula.

Table 3

Average credit completion by year and major

Year (credit completion in curriculum)	Health visitor	Physiotherapist	Nurse	Medical diagnostic analist	Health tourist manager
I. (30cr)	30 ±0.7	26.4 ±4.2	29.0 ±3.7	26.5 ±2.4	30.0 ±0.0
II. (90cr)	–	87.5 ±17.9	–	93.2 ±9.5	96.4 ±34
III. (150cr)	166 ±106.1	143.1 ±29.5	156.6 ±5.7	141.6 ±42.0	150.0 ±48
IV. (210cr)	192 ±40.4	215.5 ±9.7	–	210.1 ±12.1	165.0 ±91

The physiotherapy students fall the farthest behind in meeting the credit requirements set forth in the standard curriculum, followed by radiography students. The health tourism organizer program is 7 semesters long. The students who indicated that they are in their 4th semester are the most likely to complete the program.

4.3. Self-esteem

A maximum of 40 points can be achieved on the four-point Likert scale, which means that a higher total score reflects a more positive self-esteem. The average total score of the students is 28.1 points, which indicates good self-esteem.

A significant correlation is observed in relation to gender ($p = 0.02$): Boys have better self-esteem than girls (see *Table 4*).

Table 4

Self-esteem in relation to gender

Gender	Self-esteem average point
Male	30.24
Female	27.80

The chi-square test shows that the financial situation of the family ($p = 0.018$) has a significant influence on self-esteem, with young people who live in larger cities and have good financial conditions having better self-esteem.

There is no significant difference ($p > 0.05$) in self-esteem between students of different majors, but nursing students have the highest self-esteem *(Table 5)*, while health visitor students have the lowest.

Table 5
Self-esteem in relation to major

Major	Self-esteem average point
Health visitor	26.96
Physiotherapist	28.40
Nurse	30.31
Medical diagnostic analyst	28.23
Health tourism manager	27.82

4.4. Mental state

We measured the students' mental state using the DASS-21 scale, which measures levels of depression, anxiety and stress. The majority of students had good mental health *(Table 6)*.

Table 6
Mental state of students according to DASS-21

Areas	Depression (%)	Anxiety (%)	Stress (%)
Normal	68.9	59	76.2
Mild	18.7	11.4	16.1
Moderate	11.7	15.8	7.7
Severe	0.7	11.4	–
Extremely severe	–	2.6	–

The majority of students have good mental health, but it is notable that 31.1% have some level of depression, 38.5% have some level of anxiety, and 23.8% have symptoms of stress. The mental health of students shows a significant correlation with gender ($p < 0.001$), residence ($p = 0.015$), and family financial situation ($p = 0.002$). We observed poorer mental health among female students, those living in dormitories or with relatives, and those from poorer financial backgrounds.

While there were no significant differences observed when comparing individual majors ($p > 0.5$), the mental health of physiotherapy students appears to be worse compared to other majors. When examining the study programs on the basis of subscales, it can be seen that students on the Health Tourism Management study program exhibit depression more frequently, while anxiety and stress symptoms are significantly higher among physiotherapy students *(Table 7)*.

Table 7

The mental state of students by majors based on the DASS-21 subscale scores

Major	Depression average point	Anxiety average point	Stress average point	DASS-21 percentil average
Health visitor	6.78	6.78	9.51	23.07
Physiotherapist	7.61	7.95	11.05	26.60
Nurse	7.06	6.75	10.00	23.81
Medical diagnostic analyst	6.97	6.85	9.21	23.03
Health tourism manager	8.12	7.50	9.19	24.81

A significant correlation ($p = 0.037$) between mental health and years of study was found using the chi-square test. The mental state of students in the first year of study is significantly worse compared to the other years of study.

There is a moderate, negative correlation between mental health and self-esteem for all subscales of mental health (depression $r = –0.60$; anxiety $r = –0.49$; stress $r = –0.48$).

4.5. Perceived stress

The Perceived Stress Scale assesses the stress-inducing events that the respondent has perceived in the past month. The questionnaire focuses on individual, subjective perceptions of the difficulty of events experienced in the past month. Higher scores indicate a higher level of perceived stress.

The average score on the perceived stress scale for the students was 20.2 ±2.7. The maximum score achieved by the students was 28 points. The median score was 20 points, with 44% of students scoring above the median (from 21 points).

With regard to the degree programs, it can be seen that the nursing students experienced the most stressful examination phases, followed by the radiography students *(Table 8)*.

Table 8

Perceived strees between students in different majors

Majors	PSS averages
Health visitor	20.18 ±2,6
Physiotherapist	20.17 ±2,6
Nurse	20.81 ±2,8
Medical diagnostic analyst	20.37 ±3,1
Health tourism manager	19.60 ±2,8

The perceived stress investigated with Anova showed a significant correlation with self-esteem ($p < 0.01$), depression ($p < 0.05$), anxiety ($p < 0.05$) and age ($p < 0.001$) *(Table 9)*.

Table 9

The averages of perceived stress in relation to age

Age sections	PSS average values
under 19	23.15 ±2,5
20–21 years	19.99 ±3,0
22–23 years	19.92 ±2,4
24–25 years	20.63 ±2,7
over 25 years	18.5 ±2,2

Stress is particularly high among students under the age of 19, i.e. first-year students. An increased level of stress was also found in students aged 24–25.

There is no significant correlation at the 0.05 significance level between stress level and motivation. However, we found a higher level of stress in students who were unsure about their further education intentions (did not know where to apply) (PSS: 20.7) and in students who were not admitted anywhere (PSS: 20.5).

There is no significant correlation at the 0.05 level of significance, but the lowest stress index is observed among young people whose both parents have a higher education (PSS: 19.9). Higher values are observed among those who work alongside their studies (PSS: 20.3) and live in average or above-average financial circumstances (PSS: 20.4). Similarly, no significant correlation is observed ($p > 0.8$), but young people who sleep less than 5 hours have higher stress indexes (PSS: over 21). Conversely, those who exercise more than 7 hours per week have the lowest stress (PSS: 19.7).

4.6. Student burnout

Student burnout is a condition that can result from long-term stress, excessive workload and emotional exhaustion in university or college students. This condition often occurs due to excessive academic demands, deadline pressure, social expectations and other stressors. Student burnout often manifests itself in the form of anxiety, depression, sleep disturbances, a feeling of decreased efficiency and academic performance. One of the most common causes is the feeling of not being able to meet expectations. Individuals can feel overly tired, frustrated and demotivated, which can have a long-term impact on health and well-being.

A total score of 48 was achieved on the burnout questionnaire. In this study, the students had an average score of 21.5 ±8.5 points. The scores showed high variability, with some students scoring at or near the maximum score. The exhaustion subscale of the burnout questionnaire had the highest scores *(Table 10)*.

Burnout showed a moderate, negative correlation with self-esteem at the 0.05 level of significance (r = –0.52). When examining the subscales, the strongest correlation was observed with inefficiency (r = –0.55), followed by cynicism (r = –0.43) and emotional exhaustion (r = –0.36). The inefficiency subscale showed a significant correlation with the change of study subject (p = 0.044).

Burnout and each mental state subscale showed significant correlations (p < 0,001). The girls' scale score (21,8 ±8,9) is not significantly (p > 0.05), but it is higher than that of the boys (19.3 ±6.9).

When examining the subscales, it can be seen that students specializing in the organization of health tourism have the highest burnout. This is followed by students studying medical diagnostic analytics *(Table 9)*. Based on the results of the subscales, emotional exhaustion is most pronounced among physiotherapy students, followed by medical diagnostic analyst students.

Table 10

Average subscale scores of student burnout questionnaire by fields of study

Major	Student burnout total averagepoint (max. 48)	Emotional exhaustion averagepoint (max. 18)	Cinizm averagepoint (max. 18)	Inefficiency averagepoint (max. 12)
Health visitor	18.9 ±8.4	8.0 ±3.3	5.6 ±3.5	5.3 ±2.6
Physiotherapist	21.8 ±8.4	9.7 ±3.5	6.4 ±3.9	5.6 ±2.6
Nurse	20.1 ±7.9	8.5 ±3.8	6.3 ±2.7	5.3 ±2.6
Medical diagnostics analytics	22.5 ±9.9	9.2 ±4.2	7.0 ±4.0	6.2 ±2.9
Healt tourism manager	22.8 ±8.4	7.5 ±3.2	9.1 ±4.4	6.1 ±2.5
ALL	21.52 ±8.7	9.10 ±3.6	6.71 ±3.9	5.69 ±2.6

When examining the cynicism subscale by year of study, a significant correlation (p < 0.01) is found, which indicates that students in higher years of study perceive their studies as less meaningful. Burnout shows a significant correlation (p = 0.002) with year of enrollment, suggesting that students who enrolled earlier experience more pronounced burnout.

Support has a significant effect on student burnout: those who receive support from their family (p < 0.01) or their lecturers (p < 0.01) cope significantly better with obstacles.

The burnout of working students (22.2 ±8.8) and those living in dormitories (24.4 ±9.2) is more pronounced, although not statistically significant (p > 0.05).

There is a significant association (p < 0.01) between the time spent commuting to university and burnout, with students who commute more than 180 minutes per journey daily (we encountered students who commute up to 300 minutes daily)

exhibiting significantly more pronounced burnout symptoms compared to those who live closer.

The correlation is not significant ($p > 0.05$), but the majority of students with high burnout scores sleep less than 5 hours per night (30.5 ±12.7), smoke more, typically a half to a full pack of cigarettes (24 ±8.7), and self-report consuming alcohol 5-6 times per week (26 ±11.9). Students who exercise regularly have lower scores on the burnout scale (20.3 ±9.0).

Only 6.3% of students know that there are psychological/mental health services at the university.

5. DISCUSSION AND CONCLUSIONS

Students studying at the Faculty of Health Sciences envision their professional development and future in various fields of health sciences. Within the university environment, their education is characterized by strict adherence to curricula, which implies a rigorous expectation for the completion of each semester. In recent years, striking trends have been observed not only at the faculty level, but also at the level of the institution as a whole, in terms of student performance, dropout rates, rates and directions of change of major, and specific life situations. These phenomena clearly point to the need to investigate and understand their possible causes.

Young people with higher self-esteem find it easier to fulfill high expectations. Residents from the surrounding small towns and villages choose our university as a place to study. Although the proportion of students from Budapest is high, not so many young people choose our university, and this fact has a great influence on self-esteem.

Based on our results, the characteristics of students' mental health can be considered adequate. This is particularly favorable because we found a significant relationship between mental health and student burnout, which can result from long-term stress. However, first-year students have significantly poorer mental health than students in higher years, and they also have significantly higher stress indices. These factors may contribute to their higher risk of dropping out and changing courses. A third of our students live in halls of residence and we consider the poorer mental health measured among them to be unfavorable. Improving the facilities within the institution, such as double-bed apartments, larger living spaces and communal areas, could partially remedy this.

From our results it can be concluded that bad choice of carrier leads to a change of subject. In such cases, our students clearly opt for the shortest program offered by our faculty. This choice is probably more about completing the degree in the shortest time possible rather than staying in the field they are interested in.

We believe that the results of achieving 30 credits are above expectations. Any shortfalls at the year level are quickly made up. However, this pattern does not hold true when analyzed by individual degree program. Physiotherapy students consistently lag behind, achieving adequate credits particularly in the final year of study. In contrast, Health Tourism Management students consistently achieve an

adequate number of credits throughout their program. These program-specific differences warrant further analysis and likely require discipline-specific strategies and interventions to achieve a more even graduation rate.

In the case of the Physiotherapy program, where credit completion is slow, we observed the most unfavorable psychological characteristics among students, particularly high levels of anxiety and stress. The program has a high number of students in all years of study. The mentoring program, which is currently being intensively implemented as part of the degree program, could potentially uncover the specific background factors of the field, the understanding and analysis of which could mitigate these characteristics.

In the top-performing Health Tourism Manager program, students reported the least difficulties during the exam period prior to the research phase; however, we measured high levels of depression among them. Our results suggest a significant correlation between perceived stress and depression. Specific factors related to the course of study could exacerbate the unfavorable factors observed in the students, which warrants further analysis.

When examining students' self-esteem, psychological well-being, and burnout characteristics, it became clear that these characteristics significantly influence students' health behaviors and health status. Our study emphasized the important role of regular physical activity in promoting positive effects.

Student burnout is a condition that is particularly prevalent in higher education, where academic expectations, exam preparation and a balanced personal life can contribute to its development. This condition often leads to students giving up their studies. Burnout and dropout are complex problems that result from a combination of factors. Early recognition and appropriate support are crucial to ensure student wellbeing and success. Educational institutions play an important role in this process by establishing and maintaining support systems that help students manage stress and achieve academic success.

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