

PSYCHOSOCIAL DISTRESS IN EMERGING ADULTHOOD

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Abstract. The paper analyses and comprehensively identifies the biological and social factors that promote and constrain the development of young adults. According to the study, as many as 35% of medical and health science students are at high risk of exposure to psychosocial stress due to high academic workload and financial burden. Students cope with high levels of stress by smoking more cigarettes and taking anti-stress medication. Targeted social support in the Republic of Lithuania should be aimed at medical and health science students, especially women, who may not be able to manage psychological distress.

Keywords: psychosocial risk, psychological distress, emerging adulthood, health, students

INTRODUCTION

In the last decade, a new stage has been identified at the age of 18-29 years, known as emerging adulthood or the young adult developmental stage of emerging adulthood (Arnett et al., 2000, 2014, 2015; Matud et al., 2020). Emerging adulthood is considered to be a critical, most unstable period in life (Arnett et al., 2014; Saikkonen et al., 2018), correlating with changes in lifestyle, relationships, learning and employment (Arnett, 2000; Bonnie et al., 2015). Changes in relationships, employment at work, school, and residence during emerging adulthood have been implicated as psychosocial stressors that can negatively affect quality of life and mental and physical health outcomes in later life (Almeida, 2005, Arnett, 2014, Bell & Lee, 2008, Howland et al., 2017, Lane, 2014, Lane et al., 2017, Renna et al., 2020).

Medical and health sciences students are a population group with higher levels of psychosocial stress. Among other things, medical and health sciences degree programmes are among the most demanding due to increased academic requirements (Wolf, 1994), and students need more time and emotional effort to obtain the necessary professional qualifications.

Students' persistent psychosocial stress can negatively affect their psychological well-being (Mosley, 1994), leading to increased symptoms of depression and anxiety (Aktėkin et al., 2001). This has been supported by research evidence showing that 30% of medical and health science students in Europe who were exposed to elevated psychosocial stress experienced anxiety and depressive symptoms (Andrews & Slade, 2001, Haldorsen et al., 2014, Moutinho et al., 2017). Symptoms of specific mental health disorders were also higher among students experiencing high financial burdens (Shao et al., 2020).

In contrast to the international level, there is a lack of scientific data at the national level describing psychosocial stress in a cohort of young adults. In Lithuania, it is important to conduct research to comprehensively identify the biological and social factors that promote and constrain the development of young adults enrolled in medical and health sciences programmes and that may affect their mental health, with an additional focus on the links between psychological distress and physical health status of students. **The aim of the research** is to investigate and comprehensively assess the biological and social factors that promote and limit sustainable mental health and quality of life in young adults.

To achieve the aim of the study, the following **objectives** were set:

1. To identify and assess the expression, causes, determinants and coping methods of psychological distress experienced by medical and health sciences students.
2. To assess the relationship between psychological distress experienced by medical and health science students and quality of life.

ORGANISATION AND METHODOLOGY OF THE SURVEY

A cross-sectional, single-item survey was carried out between February and June 2021 using a questionnaire survey method. The target population consisted of bachelor and full-time students of Vilnius University Faculty of Medicine (N = 2194). A total of 483 students aged 20.7 ± 1.9 years from five study programmes (medicine, physiotherapy, pharmacy, dentistry, public health) in the field of medicine and health sciences were recruited and examined. More detailed characteristics of the respondents are presented in Table 1. The survey questionnaire consisted of open-ended and closed-ended questions about the severity, causes, coping methods and consequences of psychosocial stress. The level of psychological distress experienced by the subjects was determined using the Reeder Stress Rating Scale (Metcalf et al., 2003). Based on the scores, the respondents were classified as high (7 to 14), medium (15 to 21) and low (22 to 28) psychosocial stressors. The SF-36 (Medical Outcomes Study 36-item Short Form) questionnaire was used to assess

quality of life (Staniūtė, 2007). The SF-36 was used to score eight quality of life domains (from 0 to 100 points), which were then combined into two categories describing physical and mental health.

Table 1

Sociodemographic data of respondents		
Indicators		Average ± SD or % (n)
Age, year		20,7 ± 1,9
Biological gender	Male	19,0 (92)
	Female	81,0 (391)
Study programme	Physiotherapy	17,0 (82)
	Medicine	52,4 (253)
	Public health	16,8 (81)
	Pharmacy	4,6 (22)
	Dentistry	9,3 (45)
	Course	I (first)
	II (second)	33,5 (162)
	III (third)	20,5 (99)
	IV (fourth)	17,4 (84)
	V (fifth)	0,8 (4)
	VI (sixth)	0,4 (2)
Place of residence	Dormitories	23,6 (114)
	Apartment for rent	27,1 (131)
	With relatives	1,0 (5)
	Own accommodation	7,0 (34)
	With friends	1,4 (7)
	With parents	39,8 (192)

Statistical analysis of the data was carried out using SPSS (Statistical Package for Social Sciences) v.25.0. Arithmetic means, standard deviations (SDs) and 95% confidence intervals (CIs) were calculated for the analysis of some of the data. The significance of the differences between the attributes analysed was determined using the Student's t-test and the Phi (ϕ) coefficient was used to determine the strength and reliability of the relationship. The level of statistical significance was set at $\alpha = 0.05$. Linear and logistic regression analyses were performed to assess the association between the attributes analysed.

RESULTS

THE CAUSES, CONSEQUENCES AND COPING METHODS OF PSYCHOSOCIAL STRESS

According to the study, low levels of psychosocial stress were found among 8.9%, medium levels among 56.3% and high levels among 34.8% of medical and health science students. High levels of stress were more common in women than in men (38.9 vs. 17.4%, $p < 0.0001$) (Figure 1).

The main causes of psychosocial stress among health science students were heavy study load (77.2%), rushing to lectures and work (41.4%), disagreements with friends and family (35.2%), financial problems (21.5%), and combining work and studies (16.8%). Respondents identified the impact of stress on health (88.2%), mood changes (68.9%), the development of headaches (50.7%) and the quality of communication (40%). In addition, 36.2% to 50.7% of the students coped with Psychological distress, regardless of its severity, by getting extra sleep, eating more, exercising more, and doing their favourite activities. Unhealthy ways of coping with psychosocial stress, such as increased smoking, alcohol consumption and use of anti-stress medication, were used by 17.2%, 13.9% and 14.1% of the subjects respectively. An analysis of the causes, effects and consequences of psychosocial stress according to the biological sex of the students revealed that, unlike men, women's stress was caused to a greater extent ($p < 0.05$) by a high academic workload, rushing to lectures and work.

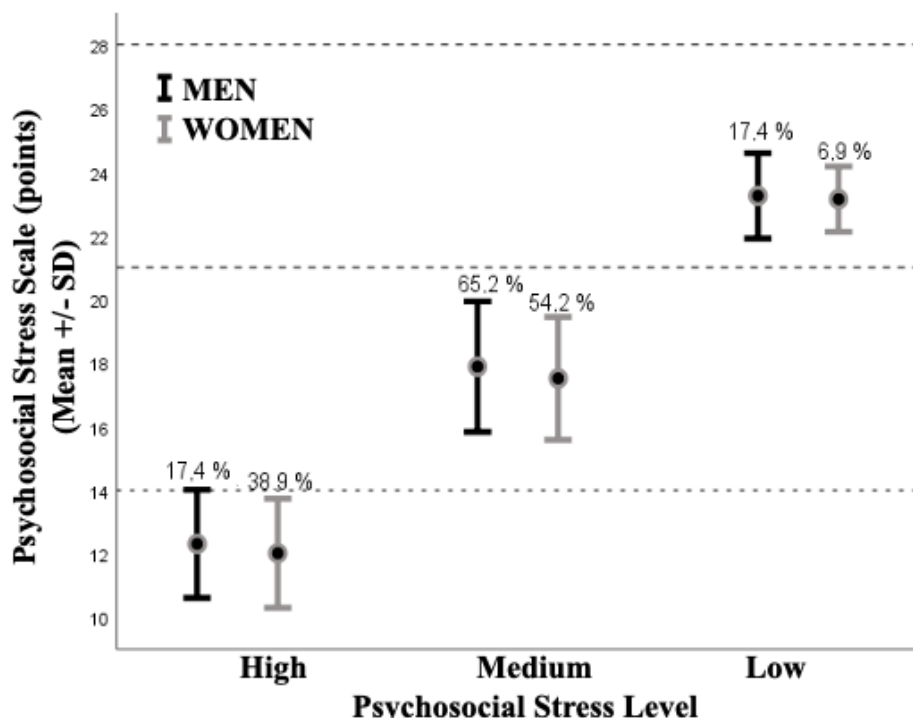


Figure 1. Distribution of students according to psychosocial stress (by mean ± SD and frequency (%) of Reeder scale scores)

Women were more likely than men to experience mood swings, headaches, conflicts and communication problems as a result of stress. Female students coped with stress more often by sleeping and eating. Meanwhile, male students were more likely to choose psychological coping methods such as exercising and smoking cigarettes more often (Table 2).

Table 2

Distribution of students according to the causes, impact and coping methods of psychosocial stress

Variables		Men, % (n)	Women %, (n)	φ	p
Reasons	High learning load	60,9 (56)	81,1 (317)	0,19	< 0,001
	Rushing to lectures and work	28,3 (28,3)	44,5 (174)	0,13	< 0,01
Impact	Spoiling the mood	54,3 (50)	72,4 (283)	0,15	< 0,001
	Poorer quality of communication	25 (23)	43,5 (193)	0,15	< 0,001
	Conflicts	23,9 (22)	45,8 (201)	0,17	< 0,001
	Headaches	25 (23)	56,8 (245)	0,25	< 0,001
Ways of overcoming	Sleep	39,1 (36)	60,1 (235)	0,17	< 0,001
	Eating more often	26,1 (24)	38,6 (151)	0,1	0,02
	Smoking	23,9 (22)	15,6 (83)	- 0,87	0,05
	Playing sports	56,5 (52)	41,2 (161)	- 0,12	< 0,01

An assessment of the causes of psychosocial stress using multinomial logistic regression revealed that, irrespective of biological sex, students were between 2.6 and 3.9 times more likely to be experiencing a high level of stress (on the Reeder scale: 7 to 14), only because of a high study load (OR /odds ratios = 3.9, 95% CI/confidence intervals: 1.8 to 8.2) and because they were suffering financially from a high level of financial problems (OR = 2.6, 95% CI: 1.0 to 6.8) (Table 3).

Table 3

Factors contributing to psychosocial stress

High stress level (7 - 14 points) ^a	β	SP	The Wald criterion	p	OR (95 % CI)
High learning load	1,4	0,4	12,7	< 0,001	3,9 (1,8 – 8,2)
Financial problems	0,9	0,5	3,9	0,05	2,6 (1,0 – 6,8)
Rushing to lectures and work	0,4	0,4	1,4	0,24	1,5 (0,8 – 3,2)
Constanta	- 2,4	1	5,9	0,02	0

Note: ^a is the reference category of low levels of psychosocial stress (22-28 points); β is the estimated coefficient with standard error (S.E.E.) (< 5); Criteria for assessing the goodness of fit of the model are: $\chi^2 = 57.2$, $p < 0.001$; Nagelkerke's R-square (R-squared) = 0.2; and the regression model was fitted by controlling for students' biological gender.

When assessing the effects of Psychological distress according to the predictive logistic regression model constructed in this study (Table 4), it was found that high levels of stress experienced by students were associated with headache (OR= 7.2, 95% CI: 2.7 - 18.8), poorer quality of communication (OR = 3.2, 95% CI: 1.2 - 8.7), negative self-assessment of one's own health (OR = 3.1, 95% CI: 1.0 - 9.4), the occurrence of conflicts (OR = 3.6, 95% CI: 1.3 - 9.8), and insomnia (OR = 3.0, 95% CI: 1.1 - 8.7).

Table 4

Effects of psychosocial stress					
High stress level (7 - 14 points) ^a	β	SP	The Wald criterion	p	OR (95 % CI)
Communication problems	1,2	0,5	5,2	0,02	3,2 (1,2 – 8,7)
Conflicts	1,3	0,5	6,3	0,01	3,6 (1,3 – 9,8)
Health effects	1,1	0,6	4,1	0,04	3,1 (1,0 – 9,4)
Headaches	2	0,5	16,1	< 0,001	7,2 (2,7 – 18,8)
Insomnia	1,1	0,5	4,3	0,04	3,0 (1,1 – 8,7)
Constanta	- 8,4	1,3	39,8	< 0,001	0

Note: ^a is the reference category of low levels of psychosocial distress (22-28 points); β is the estimated coefficient with standard error (S.E.E.) (< 5); Criteria for assessing the goodness of fit of the model are: $\chi^2 = 142.9$, $p < 0.001$; Nagelkerke's R-square (R-squared) = 0.3; and the regression model was fitted by controlling for students' biological gender.

A more detailed assessment of the association of the severity of psychological distress with coping methods showed a 4.6-fold increase in smoking (OR = 4.6, 95% CI: 1.3-7.0) and a 5.5-fold increase in the use of anti-stress medication (OR= 5.5, 95% CI: 1.2-24.5) amongst the students who were exposed to a high level of psychological distress (Table 5).

Table 5

Ways of coping with psychosocial stress					
High stress level (7 - 14 points) ^a	β	SP	The Wald criterion	p	OR (95 % CI)
More frequent smoking	1,5	0,6	5,3	0,02	4,6 (1,3 – 17)
Alcohol consumption	0,5	0,6	0,7	0,42	1,6 (0,5 – 4,7)
Taking anti-stress medication	1,7	0,8	5,1	0,02	5,5 (1,2 – 24,5)
Constanta	- 2,4	1,2	4,2	0,04	0

Note: ^a is the reference category of low levels of psychosocial distress (22-28 points); β is the estimated coefficient with standard error (S.E.E.) (< 5); Criteria for assessing the goodness of fit of the model are: $\chi^2 = 55.4$, $p < 0.001$; Nagelkerke's R-square (R-squared) = 0.2; and the regression model was fitted by controlling for students' biological gender.

THE RELATIONSHIP BETWEEN PSYCHOSOCIAL STRESS AND QUALITY OF LIFE

According to the survey, health science students scored best on the physical activity, pain, activity limitation due to physical problems, and social relationships scales, and worst on the vigour and vitality, activity limitation due to emotional state, and emotional state scales (Table 6). Respondents rated their physical health better than their mental health (77.3 ± 14.5 vs. 58.1 ± 18.2 , $p < 0.0001$).

Female students, in contrast to male students, rated their physical (75.7 ± 14 vs. 84 ± 11.7 , $p = 0.01$) and mental (55.7 ± 18 vs. 68.7 ± 15.4 , $p < 0.001$) health lower. More specifically, respondents scored statistically significantly ($p < 0.05$) worse on physical activity, pain, general health assessment, social relationships, emotional state, vigour and vitality scales (Table 6).

Table 6

Results of the students' SF-36 quality of life domains according to biological gender				
SF-36 quality of life domains	Total (n = 483)	Biological gender		Error
		Men (n = 92)	Women (n = 391)	
Mean ± SN (points)				
<i>Areas of physical health</i>	$77,3 \pm 14,5$	$84 \pm 11,7$	$75,7 \pm 14,6$	0,01
Physical activity	$94,5 \pm 9,2$	$97,9 \pm 3,7$	$93,8 \pm 9,9$	0,03
Pain	$78,4 \pm 21,1$	$87,2 \pm 16,5$	$76,4 \pm 21,5$	0,01
Activity limitation due to physical problems	$71,7 \pm 32$	$79,3 \pm 25,9$	$69,9 \pm 33,1$	0,16
<i>General health assessment</i>	$64,6 \pm 19,1$	$71,6 \pm 17,4$	$63 \pm 19,1$	0,03
Mental health domains	$58,1 \pm 18,2$	$68,7 \pm 15,4$	$55,7 \pm 18$	< 0,001
Social relationships	$69,6 \pm 22,1$	$83,1 \pm 15,4$	$66,5 \pm 22,2$	< 0,001
Emotional state	$56,4 \pm 17,2$	$68,0 \pm 15,2$	$53,8 \pm 16,6$	< 0,001
Energy and vitality	$52,5 \pm 15,5$	$59,3 \pm 16,4$	$50,9 \pm 14,9$	0,01
Activity limitation due to emotional state	$54,6 \pm 37,6$	$64,4 \pm 29,5$	$52,3 \pm 38,9$	0,12

A more detailed analysis of the data confirmed that the high levels of psychosocial stress experienced depended on the students' biological gender. A linear regression analysis revealed that high levels of psychosocial stress experienced by female students were associated with poorer emotional well-being ($\beta = 0.14$; 95% CI: 0.1 - 0.2) and activity limitation due to physical problems ($\beta = 0.02$; 95% CI: 0.01 - 0.04) (Table 7).

Table 7

The impact of psychosocial stress experienced by female students on different domains of quality of life

Psychosocial stress level (points)		β	95 % CI	error
SF-36 quality of life measurement domains	Emotional state	0,14	(0,1 – 0,2)	< 0,0001
	Restriction of activity due to physical problems	0,02	(0,01 – 0,04)	< 0,01

Note: $F(2,481) = 81,1$, error < 0,001, $R^2 = 0,39$.

Meanwhile, high levels of psychological distress experienced by male students were only associated with activity limitation due to emotional state ($\beta = 0.1$; 95% CI: 0.03 - 0.12) (Table 8).

Table 8

The impact of psychosocial stress experienced by male students on different domains of quality of life

Psychosocial stress level (points)		β	95 % CI	error
SF-36 quality of life measurement domains	Restriction of activity due to emotional state	0,1	(0,03 – 0,12)	0,003

Note: $F(1,482) = 10,4$, error = 0,003, $R^2 = 0,28$.

FINDINGS

The developmental stage of emerging adulthood in young adults is a time when people have the opportunity to make changes in their lives (Arnett, 2015, Matud et al., 2020), and the potential negative impact of psychosocial stress on health is a matter of great international concern (Wiklund, 2010). Stressors affecting young adults are major life changes, including different social roles (Bell & Lee, 2008), which significantly increase the risk of developing specific mental health disorders (Arnett, 2014). In our study, experiencing high levels of psychosocial stress was found among 35% of medical and health sciences students. High academic workload and financial problems were key factors in the likelihood of experiencing high levels of stress in the study population, which was between 2.6 and 3.9 times higher. In contrast to male students (17.4%), more than twice as many females (38.9%) were at risk of high levels of psychosocial stress and, as a consequence, were more likely to experience mood swings, headaches, conflicts and communication problems. On the one hand, our findings correlate with findings published by other researchers on the significantly higher psychosocial stress experienced by women (Drapeau et al., 2010, Matud et al., 2015, Matud & Garcia, 2019, Mousteri et al., 2020, Roberts et al., 2012, Weissman et al., 2020). On the other hand, the dynamics and causes of stress cannot be assessed solely on the basis of physical and mental health attributes. The latter need to be considered in combination with the social dimension (Au, 2017, Pearlin & Bierman, 2013). In conclusion, the physical effects of psychosocial stress in health science students that we found were not only consistent with the biological stress model (physiological alertness and exhaustion), but were also assessed from a social perspective. Among other things, gender refers to the socially constructed norms, behaviours, activities, relationships and characteristics that society deems appropriate for women and men, and it is recognised as an important social predictor of health (Manandhar et al., 2018, Fleming & Agnew-Brune, 2015, World Health Organization, 2010). It must also be taken into account that young adults have problems identifying themselves. When young men and women have to explore their future options, gender can play a crucial role in identity development, in relationships with romantic partners, friends and family, and in the consequences of risky behaviours and associated mental health inequalities (Norona et al., 2010). Similarly, in our study, we found that medical and health sciences students had poorer mental health status compared to physical health status. Exceptionally, the physical and mental health status of female students in our study was poorer compared to that of male students. More specifically, female students' higher levels of psychological distress were associated not only with poorer emotional well-being, but also with limitations in daily activities due to physical problems. In contrast, high levels of stress experienced by men were only associated with limitation of daily activities due to poorer emotional state.

Researchers have found that stress can lead to behavioural changes. This most commonly includes 'escape practices' such as alcohol or substance abuse (Au, 2017). More specifically, according to the World Health Organization (WHO) World Mental Health International College Student Project, 31% of students at 19 colleges in Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, and the United States identified at least one anxiety, depression, or substance abuse-related disorder that had occurred in the past 12 months (Auerbach et al., 2018). Similarly, our study found a 4.6-fold higher likelihood of smoking and a 5.5-fold higher likelihood of taking pre-stress medication among medical and health sciences students with high levels of stress. Female students were significantly more likely to cope with high levels of psychosocial stress by sleeping and eating, while male students were more likely to exercise and smoke cigarettes. On the other hand, coping is a multidimensional construct that encompasses the actions (thoughts and behaviours) people use to manage stress (Folkman, 2010). Thus, different ways of coping with stress can promote not only physical and mental health coherence but also social well-being (Folkman & Lazarus, 1980).

CONCLUSIONS

Medical and health sciences students, especially women, experience high levels of psychosocial stress due to high academic workloads and financial burdens. Late adolescents cope with psychological distress by smoking more cigarettes and taking anti-stress medication.

This study found that higher levels of psychological distress are associated with poorer mental and physical health for men and poorer physical and mental health for women.

The empirical findings from our study are useful for planning and implementing psychological distress management measures by targeting emotional and instrumental social support among medical and health science students of high socioeconomic status, especially when the benefits of social support have been demonstrated in Finland and Spain (Au, 2017, Matud et al., 2015, Pearlin & Bierman, 2013, Santini et al., 2015, Saikkonen et al., 2018).

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