

SOURCES OF STRESS AMONG UNIVERSITY STUDENTS AND COPING METHODS

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The current literature confirms high-stress exposure in university students. That is why the aim of this study was to identify university students' self-reported sources of stress, and the most common stress coping methods. A cross-sectional study was performed to collect data on the most frequent sources of stress among university students and coping methods. The study included 309 students of the Faculty of Medicine in Foča (Bosnia and Herzegovina), 118 males and 191 females. The students rated the intensity of certain stressful situations on a scale of 1 to 10 and ranked them on an individual stress scale. The highest-ranked sources of stress were defined, and mostly they derived from non-academic sources of stress. The most common stress-coping methods were also defined. The main conclusions were that specific health promotion and stress management programs should be offered to university students in order to cope with strains during their studies.

Acta Medica Medianae 2023;62(4):55-62.

Key words: *students, stress, health promotion*

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Introduction

Stress and its impact on students' mental health is an important public health issue. The existing literature confirms the high-stress exposure in medical students. More serious stress events can impair students' mental and physical health, quality of life and life satisfaction, their academic performance and affect their capacity to adequately meet patients' needs in their future medical practice (1). Sources of stress are usually related to education and training, including the examination, entry requirements, teachers and staff behavior toward students and the relationship with staff and clients in different institutions. Non-academic stressors are related to the social environment, family members, relationships with persons who are important to them, and environmental problems (2, 3).

The aim of this study was to determine the most common sources of stress in university

students - future medical doctors, as well as stress coping methods they applied in everyday life.

Methods

The study included 309 students of the Faculty of Medicine in Foča, University of East Sarajevo, Republika Srpska (from March to May 2022). There were 191 females (61.8%) and 118 males (38.2%) in the sample.

The original questionnaire was a combination of Youth Stress Scale (YSS-30), i.e. Holmes and Rahe Scale (4), where students rated the intensity of certain stressful situations on a scale of 1 to 10 and ranked them on an individual stress scale, and life events that were cited by students as stressful, and did not adhere to a standard stress scale (4, 5). It also included the demographic characteristics of the surveyed students, and 30 stress events, the most commonly cited in the previous studies, with the possibility for the surveyed students to add three events which represented significant sources of stress for them. Students also answered (in free form) which were their most common stress coping methods (6, 7).

During their lectures, students filled in the above mentioned questionnaire, and it was explained to them what the purpose and importance of the research were. Their participation was voluntary and the anonymity and confidentiality of data was guaranteed. The students' interest in participating in the study was high, so the response rate was 100%. Students

were asked to evaluate each of the potential sources of stress, by their intensity of impacts, on a scale of 1 to 10 and then they ranked them on an individual stress scale. Completing the questionnaire required about 20 minutes.

Statistical analysis was performed using the software package SPSS version 18.0. The main research results are presented in tables and figures. The statistical significance was set at $p < 0.05$. The study procedures were carried out in accordance with the Declaration of Helsinki.

Results

A total of 309 students filled in the questionnaires and all of them completed it in an appropriate way usable for research purposes. The response rate was 100%. In this sample, there were 118 males (38.2%) and 191 females (61.8%).

The ten most frequent sources of stress, as shown in Table 1, were:

Death of a family member, serious illness of a family member, misfortune of the loved one, financial problems, economic crisis, loss of youth (hypothetical), lying and deception by the close ones, unwanted pregnancy, disagreement with parents, big economic loss, and failing the year of study.

The first ranked situations derived from non-academic sources of stress mainly derived from

the family, and from contacts with important persons (partners, friends, relatives).

Average values of perceived intensity of all stress events were higher in females than in males ($p < 0.01$). Significant differences were found in the following situations: serious illness of a family member, the misfortune of the loved one, disagreement with parents, separation from family, worry that "I am not able to meet all demands of study and practice", and feeling that "I am not secure enough in my environment".

In the group of academic sources of stress, failing the year of study was ranked as the highest. There were differences in its ranking according to the gender of respondents. The average intensity values of the majority of stress sources were higher in females than in males. Females trusted in their own work efficiency less than males did. The gender differences in the responses are shown in Figure 1.

The most cited stress coping methods that students practiced were "Conversation with friends", and "Support from family members" (Table 2). Different forms of social support, such as stress coping methods, ranked highest. Support from family members was in the 2nd place in the females, and in the 5th place in males (Figure 1, Table 2). Females used crying for stress problems more often than males did. "I'm crying" in females was in the 4th, in males at 14th place in rank ($p < 0.05$). Males most often use intense physical activity ($p < 0.01$) as stress coping method

Table 1. Perceived intensity of stress reactions in the surveyed students

Stressors/Stress event	Total (N = 309)		Males (N = 118)		Females (N = 191)		Comparison M/F*	
	Rating	Intensity	Rating	Intensity	Rating	Intensity	T	p
Death of a family member	1	9.30 ± 2.00	1	8.67 ± 2.87	1	9.43 ± 1.76	1.62	0.105
Serious illness of a family member	2	8.84 ± 1.95	2	8.22 ± 2.10	2	8.97 ± 1.91	2.39	0.017
Misfortune of my loved one	3	8.39 ± 1.72	4	6.78 ± 2.32	3	8.71 ± 1.38	3.83	0.001
Financial problems, economic crisis	4	7.58 ± 2.25	3	7.06 ± 2.51	4	7.68 ± 2.20	0.90	0.368
Losing of youth (hypothetical)	5	7.28 ± 2.75	5	6.56 ± 2.66	6	7.42 ± 2.76	1.39	0.166
Lies and deception by people who are close to me	6	7.27 ± 2.18	7	6.33 ± 2.64	5	7.45 ± 2.05	1.72	0.085
Unwanted pregnancy	7	6.86 ± 3.09	10	6.00 ± 3.28	8	7.02 ± 3.05	1.37	0.171
Disagreement with parents	8	6.81 ± 2.72	15	5.33 ± 2.89	7	7.10 ± 2.61	2.40	0.016
Big economic loss	9	6.67 ± 2.55	11	6.00 ± 2.89	9	6.80 ± 2.48	1.18	0.240
Failing the year of study	10	6.64 ± 2.89	6	6.56 ± 2.48	13	6.66 ± 2.98	0.44	0.661
Permanent loss of a friend	11	6.63 ± 2.47	12	6.00 ± 2.57	10	6.76 ± 2.44	1.29	0.198

Partner's infidelity	12	6.60 ± 2.97	8	6.28 ± 2.56	12	6.67 ± 3.05	0.89	0.372
Separation from family	13	6.35 ± 2.96	22	4.33 ± 3.14	11	6.75 ± 2.77	2.89	0.004
Separation from a loved one	14	6.27 ± 2.50	13	5.78 ± 2.10	14	6.36 ± 2.57	1.23	0.218
Limited time for recreation and social activities	15	6.05 ± 2.69	14	5.61 ± 2.99	17	6.13 ± 2.63	0.79	0.427
Exams	16	5.97 ± 2.52	17	5.00 ± 2.7	16	6.16 ± 2.45	1.63	0.104
Worry that I am not able to meet all the demands of study and practice	17	5.86 ± 2.49	23	4.33 ± 2.59	15	6.17 ± 2.37	2.82	0.005
Feeling that I am not secure enough in my environment	18	5.69 ± 3.03	28	3.78 ± 2.60	18	6.08 ± 2.97	2.93	0.003
Excessive workload	19	5.61 ± 2.48	26	3.83 ± 2.31	19	5.97 ± 2.37	3.23	0.001
Organization of study and practical work by faculty	20	5.61 ± 2.79	16	5.11 ± 3.22	22	5.70 ± 2.70	0.86	0.391
Inadequate communication and support by staff	21	5.60 ± 2.51	24	4.28 ± 2.72	20	5.86 ± 2.40	2.48	0.013
Administrative jobs at the faculty	22	5.60 ± 3.02	9	6.22 ± 2.78	26	5.47 ± 3.06	0.96	0.339
Request for perfect performance in work with clients	23	5.56 ± 2.40	20	4.50 ± 2.71	21	5.78 ± 2.29	2.13	0.034
Unsupportive environment during practical work	24	5.39 ± 2.40	18	4.72 ± 2.59	25	5.52 ± 2.35	1.33	0.184
Literature availability for exam preparation	25	5.39 ± 2.30	19	4.61 ± 2.48	23	5.55 ± 2.24	1.49	0.135
Fight with someone	26	5.28 ± 2.76	21	4.44 ± 2.66	27	5.44 ± 2.77	1.35	0.177
Belief in own work efficiency	27	5.17 ± 2.64	29	3.33 ± 2.35	24	5.54 ± 2.54	3.18	0.001
Teachers and staff behavior toward students	28	4.82 ± 2.45	27	3.83 ± 2.68	28	5.01 ± 2.37	2.09	0.037
Being overweight	29	4.06 ± 2.96	30	3.28 ± 2.61	29	4.22 ± 3.01	1.19	0.235
Watching the game when my favorite team loses	30	3.60 ± 2.96	25	3.94 ± 3.19	30	3.53 ± 2.93	0.76	0.447
Total		6.23 ± 2.58		5.36 ± 2.67		6.40 ± 2.52	2.93	0.003

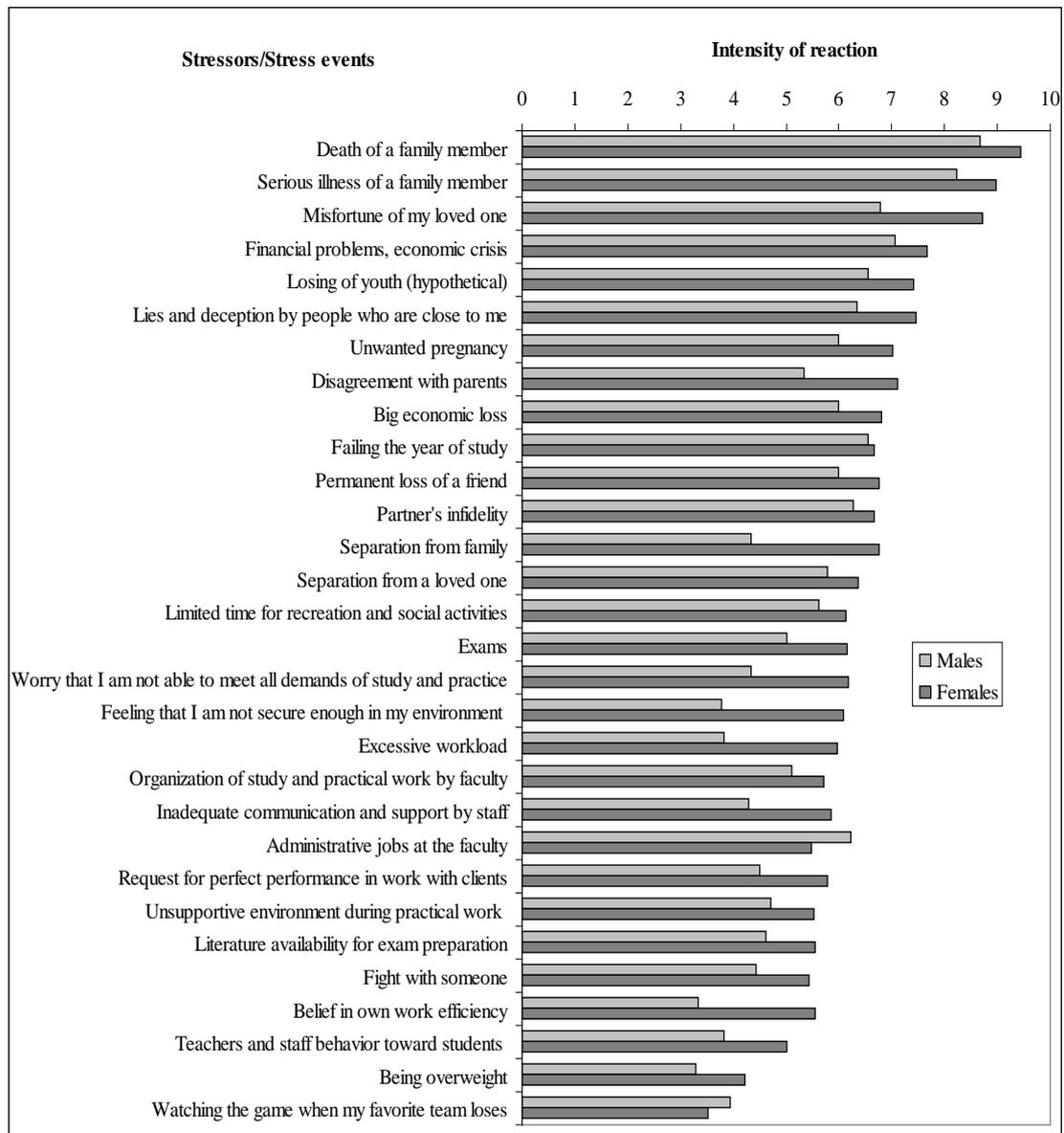


Figure 1. Stress events and perceived intensity of stress reaction in students, both genders

Table 2. Stress coping methods of the surveyed students

Methods	Males+Females (N = 309)		Males (N = 118)		Females (N = 191)		Comparison M/F*	
	Rating	Number	Rating	Number	Rating	Number	Chi square	p
Conversation with friends	1	88 (80.7%)	1	13 (72.2%)	1	75 (82.4%)	1.00	0.316
Support from family members	2	77 (70.6%)	5	9 (50.0%)	2	68 (74.7%)	4.43	0.035
Listening to music	3	74 (67.9%)	4	10 (55.6%)	3	64 (70.3%)	1.50	0.220
Socializing and going out	4	56 (51.4%)	2	11 (61.1%)	6	45 (49.5%)	0.82	0.366
Walks	5	55 (50.5%)	6	9 (50.0%)	5	46 (50.5%)	0.01	0.966
"I'm crying"	6	52 (47.7%)	14	3 (16.7%)	4	49 (53.8%)	8.33	0.004
"I'm sleeping"	7	40 (36.7%)	11	4 (22.2%)	7	36 (39.6%)	1.94	0.163
Prayer	8	36 (33.0%)	12	4 (22.2%)	8	32 (35.2%)	1.40	0.494
Reading books, magazines	9	34 (31.2%)	9	5 (27.8%)	9	29 (31.9%)	0.12	0.732
Internet	10	32 (29.4%)	10	5 (27.8%)	10	27 (29.7%)	0.03	0.872
Intense physical activity	11	31 (28.4%)	3	11 (61.1%)	13	20 (22.0%)	11.31	0.001
Relaxation	12	30 (27.5%)	7	9 (50.0%)	12	21 (23.1%)	5.46	0.019
TV	13	30 (27.5%)	8	6 (33.3%)	11	24 (26.4%)	0.36	0.546
I shout and argue	14	22 (20.2%)	15	3 (16.7%)	14	19 (20.9%)	0.38	0.825
Alcohol	15	21 (19.3%)	13	4 (22.2%)	15	17 (18.7%)	0.12	0.728
Cigarettes	16	15 (13.8%)	18	1 (5.6%)	16	14 (15.4%)	1.22	0.269
Sedatives	17	7 (6.4%)	16	3 (16.7%)	17	4 (4.4%)	3.76	0.052
Drugs	18	3 (2.8%)	17	2 (11.1%)	19	1 (1.1%)	5.63	0.018
Professional help	19	3 (2.8%)	19	1 (5.6%)	18	2 (2.2%)	0.82	0.663

*Pearson Chi-square test

Discussion

Stress events ranked most highly where stemmed by good relationships with family members, partners, friends and social environment. Misfortune of the loved one, financial problems, economic crisis, loss of youth, lies and deception by the close ones, unwanted pregnancy, disagreement with parents and big economic loss did not have any statistical importance. The sources of stress were largely derived from family and social environment, or associated with socioeconomic factors. The surveyed students have chosen to be medical doctors, and that could be a reason why they were more focused on

individual, family and social environment, and therefore reacted more intensely to the sources of stress derived from these issues. They have lived in a country with socioeconomic transition and instability for almost 30 years, and in these situations, especially according to Maslow's hierarchy of needs, the motivation for survival (personal or family) is increased, and incentives for self-actualization through academic training are reduced (8–10).

In the present study, female gender was a significant predictor of higher intensity of reaction to stress. Significant differences depending on the gender of the respondents were found in the following situations: serious illness of a family

member, misfortune of the loved one, disagreement with parents, and separation from family (as it was found in other similar studies). Worry that "I am not able to meet all demands of study and practice", excessive workload, inadequate communication and support by staff, request for perfect performance in work with patients, belief in own work efficiency, and teachers and staff behavior toward students were also emphasized (11). Females considered themselves to be less effective at work than males and, were able to express their feelings more easily (e.g. crying), including those associated with stressful situations. In the literature review on gender differences in terms of self-confidence, it is described that females had lower levels of self-confidence, which could also be one of the reasons why their stress responses were more intense than in male students (12).

Students used various stress coping methods. Support from friends and family members has proven to be very important in stressful situations (ranked in 1st and 2nd place of coping methods), and therefore stressful events related to the family, partners and friends were a significant source of stress for our students. Maslow's revised pyramid of needs also gives the highest priority to partnership and parenting (13, 14).

Different forms of "self-help" methods were used, like venting stress through crying (typical

for females), or intense physical activity, relaxation, socializing and going out (more typical for males), listening to music, prayer, reading books, magazines, internet, TV, alcohol, cigarettes, sedatives and drugs. Similar results were found in available literature (15, 16). Seeking professional help was on the last place in the rank, and that form of help should be organized by their universities (17, 18).

The contribution of the study is that certain non-academic sources of stress were defined by future medical doctors as highly significant stressors. Derived student's scale of stress contained many stress events which are not presented on the standard adult's stress scales. Statistically significant gender differences were found in the perception of certain stress events, as well as differences in the ranking of stress events by female and male students. Coping strategies used by them are wide-ranging and mostly were not appropriate (19, 20).

Conclusion

Specific courses of mentoring programs and stress management should be offered in order to cope with strains during the study of university students. In addition, gender-specific access to programs for cognitive-behavioral stress management should be based on those findings.

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Originalni rad

UDC: 613.86-057.875
doi: 10.5633/amm.2023.0407

IZVORI STRESA MEĐU STUDENTIMA I METODE SUOČAVANJA SA STRESOM

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Dosadašnja literatura potvrđuje visoku izloženost stresu kod studenata. Zbog toga, cilj ove studije bio je da se identifikuju izvori stresa koje su studenti sami prijavili, kao i najčešće metode suočavanja sa stresom. Urađena je studija preseka kako bi se prikupili podaci o najčešćim izvorima stresa među studentima i o metodama suočavanja sa stresom. Istraživanjem je obuhvaćeno 309 studenata (118 studenata muškog pola i 191 student ženskog pola) Medicinskog fakulteta u Foči, u Bosni i Hercegovini. Studenti su ocenjivali intenzitet pojedinih stresnih situacija na skali od jedan do deset i rangirali su ih na individualnoj skali stresa. Definisani su najviše rangirani izvori stresa, i to uglavnom iz neakademske izvora stresa. Takođe, definisane su najčešće metode suočavanja sa stresom. Došlo se do zaključka da studentima treba ponuditi specifične programe promocije zdravlja i upravljanja stresom kako bi se nosili sa naporima tokom studija.

Acta Medica Medianae 2023; 62(4):55-62.

Ključne reči: *studenti, stres, promocija zdravlja*

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