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*The origin of stress, its causes, symptoms and frequency  
of appearance among the students of Medical University of Lublin*

The term “stress” has been first introduced into medicine by Hans Seley in 1926 (1, 6). He has described it as a biological reaction, a state caused by an impulse acting on an organism, and beginning with “general reaction of adaptation” running through three phases: the phase of alarm (mobilization), the phase of adaptation (a relative balance), and sometimes exhaustion (after the collapse of the defending mechanisms) (1–6). The phase of alarm and exhaustion might have a crucial influence on the development of various diseases (1–6).

A psychological stress means impulses (difficult situations) and reactions (mechanisms of coping with them and defending mechanisms) taking place in the area of mental activities.

The mechanisms of coping (avoidance, choice of actions) have nature of intentional activities that are perceived (5). The defending mechanisms (for example rationalization, projection) are taking place beyond consciousness (1, 2). Non-rational, not much affecting defending mechanisms might cause mental and somatic disorders (3). So then stress might be defined as a number of mental and somatic changes that are a consequence of a situation that exceeds the abilities of coping with it by a particular person. There is a view in medical literature that stress is a cause of many diseases. We can even find claims that 90% of all diseases are linked to stress (5). Among the symptoms of stress are heart fluttering, excessive sweating, shivering of hands, dispeptic symptoms, sleeping disorders, disorders of menstruation or decrease of libido (1, 2, 4). A stress that is acting too long might cause a new disease or intensify the one that already exists (6). According to medical literature, among the diseases that are caused by stress are chancres, chancric enterocolitis, migraine, Raynold’s disease, allergies, asthma, different kinds of arrhythmia, rheumatoidal arthritis, skin diseases. A number of stress causing factors have been described. Among them are negative factors such as excessive tension in one’s home or workplace, difficult financial condition, winding up in an alien environment, physical violence, death or illness of a close person, an exam (1, 6). Stress might also be caused by positive factors such as: marriage, promotion, birth of a child (2).

So then stress is a state that accompanies us in our daily life, but in certain periods its activity is constant and particularly intensified (1, 3, 5, 6). One of these periods is the time of academic studies (2, 4). Among peculiarities of medical studies is constant verification of student’s knowledge by numerous practical and theoretical tests and exams, being in an environment that is new and at first alien to a student, and often financial problems can be stress-causing factors (2, 6).

This work aims at verification of stress-causing factors acting on students of Medical University of Lublin.

## MATERIAL AND METHODS

Randomly chosen students of Medical University of Lublin took part in the research. One hundred and forty-six students were included (117 females, the average age in the whole group: 23) from all six departments of Medical University of Lublin. The analysis of personal data showed that among the examined population of students 33.99% (38 females, 16 males) were from the medical department (average age – females 23 years, males 23 years), 19.98% were from the department of pharmacy (21 females, average age – 21, 8 males, average age – 22 years) 18.86% were from the department of nursing, among them 27 females (average age – 24 years) and one male at the age of 27.

The examining of places of residence showed that 36% of the researched population, that is 50 people, live in the country environment, 80 people (52%) are from cities, and 16 people (12%) live in the cities that were formerly voivodship's capitals.

The research has been performed by using an authorship questionnaire. Questions used in the survey were either confidential or nonconfidential (open). The questionnaire included 15 questions that have been formulated so as to correctly determine the stress-causing factors acting on students of Medical University of Lublin. A statistical analysis has been conducted according to test  $\chi^2$ . Values degrees of probability  $p < 0.05$  have been acclaimed as statistically vital. The statistical research has been conducted basing on the STATISTICA software.

## RESULTS

During the research the following factors were analyzed: exams, residence away from the family, excessive amount of material to be studied, and difficult financial condition (Table 1).

Statistic analysis:	Sex	Age	Department	Year of studying	Place of residence	Verification of self-immunity to stress
examinations	p=.24422	p=.45921	p=.64523	p=.99671	p=.43102	p=.83751
residence away from family	p=.42653	p=.65240	p=.52263	p=.70354	p=.94804	p=.20329
excessive amount of material to be studied	p=.66021	p=.57081	p=.75801	p=.62215	p=.53856	p=.61034
difficult financial condition	p=.98552	p=.54575	p=.43504	p=.72420	p=.54436	p=.29302
Fight with stress using the help of a specialist	p=.81925	p=.00161	p=.73283	p=.30315	p=.73670	p=.39984
Influence of stress on life activities	p=.01398	p=.00253	p=.01220	p=.30698	p=.34820	p=.15681
Influence of stress on functioning in own environment	p=.62841	p=.89131	p=.70608	p=.04411	p=.00543	p=.07117

Statistic significance for  $p < 0.05$

Among all the examined students only 27 people, that is 18% of the tested population do not feel any sign of stress at all, among them were only 7 females. For 43 out of 119 people (81.5%) it is difficult financial situation, 89 (60%) of them state that in their case it is an excessive amount of materials to be studied which causes the symptoms of stress. 45% (66 people) of the examined students think of themselves as mentally strong and stress immuned.

Among the most common symptoms of stress specified by the students, are: stomach upsets – 42 people (28%), fear, anxiety – 39 people (26%), diarrhea – 15 people (10%), tachycardia (polycardia) – 11 people (7%) and excessive sweating – 8 people, that is 5% of the examined population. The following disorders were also recorded: cry, frequent urination (urinating), concentration difficulties, unability of expression, dryness mychoderma, apathy, drowsiness, appetite disorders (excess or lack). The majority of the researched – 11 people (76%) do not use any remedies for stress. Eight students were using the help of a specialist (psychiatrist, psychologist) to combat their stress. Other ways of fighting stress used by the students are: medicines (benzodiazepines), (anxiolytics) and herbal drugs, e.g. Nervosol – 12 people, social meetings (clubs, house-parties) – 10 people, alcohol – 5 people, cigarettes – 5 people, sport and prayer – 2 persons for each (Fig. 1).

On 61% of the examined population, the stress is acting in a mobilizing way, on 31% the stress is impeding (inhibiting) life activities and on 7% it has no influence.

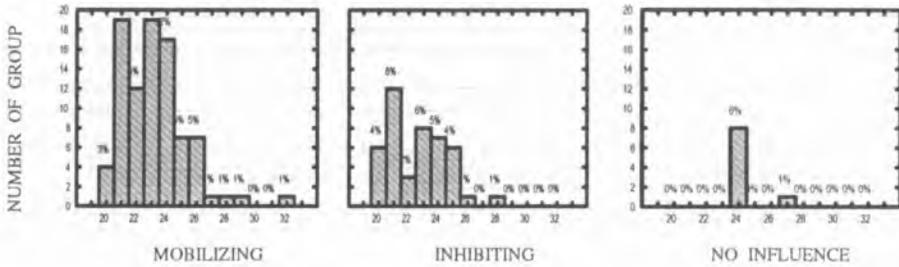


Fig. 1. Dependences between age of the studied population and influence of stress on life activities

A statistically significant difference was determined between the age of the questioned people and the influence of stress on life activities ( $p = 0.00253$ ). In the group of 20-year-olds the stress is acting in a impending manner on 4% of people (the group constitutes 7% of the examined). Students aged 21 are 21% of the population). In this group, the stress mobilizes to action 13% (that is 61.90% of the whole population of 21-year-olds), but impedes 8%, that is 38.09% of the group mentioned above. The group of 22-year-olds constitutes 10% of the population – the stress is acting in a mobilizing manner on 80% of this group. In the group of students aged 23 (19%) the stress is acting on life activities in the following way: mobilizing – on 68.42% but impeding on 31.58%. The influence of stress on life activities in the group of 24-year-olds is very much varied: they constitute 23% of the researched population. The stress mobilizes 52.17% of them, influences negatively 21.73%, and has no influence on 26.08%. 9% of the tested group are student aged 25 years. In this group the stress acts positively on 55.55% and negatively on 44.45%. Among the 26-year-olds (6% of the researched population) stress mobilizes to action 83.33% of them and impedes 16.67%. On 50% of the students aged 27, the stress acts in a mobilizing manner and on the other 50%, has no influence. There is no variation in the activity of stress on the group of 28-year-olds. There the stress acts positively on 50%, and negatively on the other 50%. 100% of students at the age of 32 stress mobilizes to action (Fig. 1).

Stress mobilizes 63% of the examined students. We can observe it specially in the age slot from 21 to 25 years. They constitute 51% of the researched population. Impediment of life activity is observed in the 20-year-old group – 4% (2% of the whole population). The biggest group among these who are stimulated to action by stress are the students of medical department (22% of the population). Also on students of pharmacy and nursing the stress acts positively ( $p = 0.01220$ ) (Fig. 3).

There is also a dependence between the age of people and their using the help of a specialist ( $p = 0.016$ ). 95% of the tested do not use the help of a specialist (Fig. 2). In the group of 20-year-olds, 28.56% combat stress with the help of a specialist. In the group of 21-year-olds, attendance to a specialist is the following: only 4.34% seek the advice of a psychiatrist. Students in the age slot of 22–23 years, 25–25 years and 32, do not go to a specialist. 50% of students in the age slot of 25–27 years do visit psychiatrists.

A statistic validity occurs between the place of residence and the influence of stress on functioning in one's environment ( $p = 0.00543$ ). In 32.69% of residents of cities (this group constitutes 52% of the population) stress handicaps functioning in student's environment. In 48.07% of the group mentioned above the stress handicaps (impedes) functioning during lectures and other academic activities. Impediment of functioning in one's family under the influence of stress occurs in 9.61% of the population, also the stress does not handicap functioning at all in case of 9.61%. Among the residents

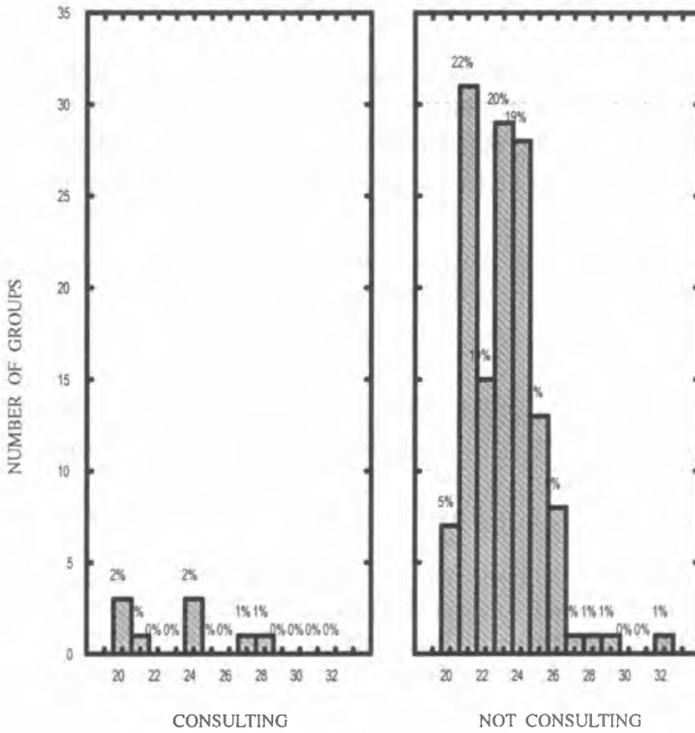


Fig. 2. Dependences between the age of the studied population and the frequency of consulting with the specialist

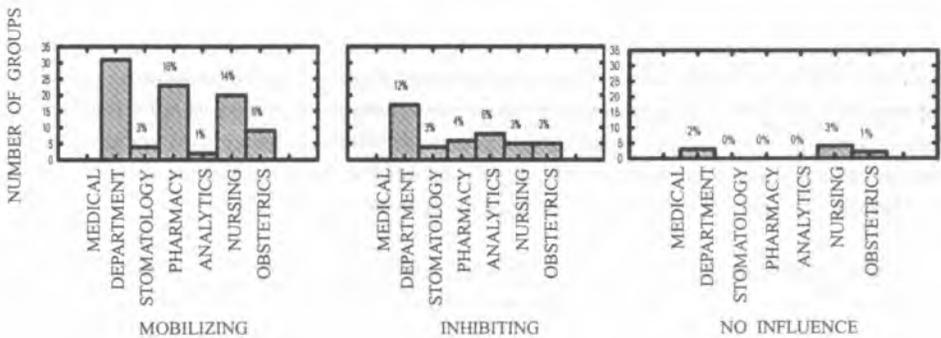


Fig. 3. Dependences between departments and influence of stress on life activities

of rural areas the influence of stress on functioning in the environment is as follows: 21.97% feel insecurity during contacts with their peers. Impediment of functioning during academic activities occurs among 52.77%, and in 25% the stress causes disorders in the functioning of the family. Residents of former voivodship capitals, under the influence of stress feel impediment in student's environment in 8.33%. Among 83.33% of students from former voivodship capitals, functioning disorders occur during academic activities, and 8.33% of students from the examined population, do not function properly in the family under the influence of stress.

## CONCLUSIONS

1. Dependence between stress causing factors and verification of self-immunity to stress has not been determined.
2. In the researched group, stress acts in a mobilizing manner.
3. Influence of stress on functioning in the environment depends on the place of residence.
4. Age is a vital factor when it comes to using the help of a specialist.
5. Males are less vulnerable to stress causing factors.

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## SUMMARY

Students in some determined situations, for example before an examination in a new environment are exposed to many somatic and psychic reactions. Stress can be determined (or shown) as a syndrome of somatic and psychic changes which can be the consequences of difficult situations to overcome. Some symptoms of stress are: tachycardia, excessive perspiration, dyspeptic symptoms, sleep and menstruation disorders. Different types of reactions and their frequency due to stress among the students of Medical University of Lublin were examined by means of a questionnaire.

Uwarunkowania stresu, przyczyn, objawów i częstotliwości występowania wśród studentów Akademii Medycznej w Lublinie

Termin stres został wprowadzony do medycyny przez Hansa Selye'a. Określił go jako reakcję biologiczną, stan wywołany przez bodziec działający na organizm, który zapoczątkowuje ogólną reakcję adaptacyjną, przebiegającą przez fazy: alarmową (mobilizacja), adaptacyjną (względna równowaga), a czasem wyczerpania (po załamaniu mechanizmów obronnych). Stres psychologiczny oznacza bodźce (trudne sytuacje) i reakcje (mechanizmy radzenia sobie i reakcje obronne), rozgrywające się w zakresie zjawisk psychicznych. Zatem stres jest to stan, który towarzyszy nam w życiu codziennym, jednakże w pewnych okresach jego działanie jest stale i szczególnie nasilone. Jednym z takich okresów jest czas studiów, związane jest to szczególnie z licznymi sprawdzianami wiedzy, przebywaniem w nowym, początkowo obcym dla studenta środowisku oraz często z kłopotami finansowymi. Celem pracy jest ocena uwarunkowań czynników stresogennych działających na studentów Akademii Medycznej w

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Lublinie oraz ocena, czy w warunkach nasilonego stresu studenci prowadzą higieniczny tryb życia. Badaniem objęto losowo wybranych studentów Akademii Medycznej w Lublinie. Do badania włączono 146 studentów wszystkich sześciu wydziałów AM w Lublinie. Badanie prowadzono przy użyciu autorskiego kwestionariusza wywiadu. Analizę statystyczną przeprowadzono opierając się na teście  $\chi^2$ . Za istotne statystycznie przyjęto wartości prawdopodobieństwa  $p < 0.05$ . W badaniu statystycznym wykorzystano oprogramowanie Statistica 6.0