Original Article Pol J Public Health 2015;125(2): 94-98

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Stress and methods of coping with it among students of the Medical University of Lublin

Abstract

Introduction. Stress is a complex and ubiquitous phenomenon. According to the World Health Organization, it is one of the most common problems of the 21st century. It is no surprise that the majority of people associate stress with something entirely negative. However, there is no life without stress and a certain amount of stress in life is necessary.

Aim. The aim of the study was to assess the occurrence of stress among students of the Medical University from the faculties of Medicine, Pharmacy, Dentistry and Public Health, and evaluate its influence on physiological changes and behavior, and present the ways of coping with it.

Material and methods. The study comprised 240 students from the faculties mentioned above. Stress was measured by means of a questionnaire consisting of 14 fully anonymous questions which concerned factors causing stress, ways of reacting to it and methods of coping with it.

Results. It was found out that stress as an intense emotional reaction to a number of stimuli triggers some physiological and psychological adaptation responses among students.

Conclusions. The findings of this research suggest that pharmacy students are the most exposed to high levels of stress. Oral examination is considered to be the most stressful form of testing students' knowledge. According to survey respondents, the most common symptoms of stress include abdominal pain palpitations, sleep disorders, excessive sweating, hand shaking. The majority of respondents listed the following activities to beat stress: sports, sleeping or listening to music, as most effective in reducing stress. Some of the respondents also turned to substances, such as tobacco or alcohol. The respondents admitted that they have also used drugs.

Keywords: stress, stressor, reaction to stress, symptoms of stress.

DOI: 10.1515/pjph-2015-0032

INTRODUCTION

The psychological definition of stress sees the phenomenon as a dynamic, adaptive reaction of an individual to the requirements of a given event or situation (a stressor), mainly characterized by a lack of balance. The behavior aimed at overcoming stress is an attempt to regain balance. However, there is no life without stress, as Hans Seyle claimed. The author popularized the notion in the world of science, describing stress as a nonspecific reaction of the human body to a given demand. He assumes the hypothesis that a certain amount of stress in life is necessary. He made a distinction between a positive (eustress) and negative (distress) level of stress influencing human lives [1,2].

Eustress is a state of physical and psychological well-being in which the mind and the body achieve their full potential. This notion also describes delayed positive effects of a negative stress, e.g. initial examination stress that disappears after receiving a positive grade. Distress is a result of excessive stress caused by too strong or insufficient number of stimuli, for example too high requirements of a boss or lack of contacts with close family and friends [2].

In medical terminology, the word stress means a disturbance of homeostasis caused by psychological factors. Stimuli causing stress can have a mental, physiological and anatomical basis. The concentration of adrenaline in the blood increases rapidly, concentration of sugar rises with blood pressure elevated as well, sometimes to a significant extent. It goes without saying that this is a fully physiological reaction, expressing "a response of the body to a stressful situation", and the stimuli causing stress are called stressors. Stressors are such elements of a situation which strain the system of psychological regulation of a person, causing disturbances in balance between an individual

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and their surroundings, which leads to homeostatic disorder. The simplest stressors are stimuli which put a burden on the person's sensory organs [3,4].

Reactions to the same experience differ among various people. Those differences are caused by an individual's psychological susceptibility. Many a time, even a slightest stimulus can evoke a stressful reaction. Thus, we can say that it is not the strength of a stimulus which determines whether something is stressful for us, but its importance for a particular person. Whenever people lose control over events, this is a destructive stress [4,5].

As students understand it, stress refers most often to experiencing emotions, like fear or psychophysical, vegetative-somatic and behavioral reactions. The majority are aware of negative consequences of nervous disturbances for health. They confirm that stressful situations can restrict or even block efficacy of psychosocially desired reactions of a person. So they make it difficult or impossible to fulfill an intended task. Long-term consequences may lead to psychosomatic diseases and establishing of negative patterns of behavior [1,2,4].

AIM

The aim of the study was to assess the occurrence of stress among students of the Medical University from the faculties of Medicine, Pharmacy, Dentistry and Public Health, and evaluate its influence on physiological changes and behavior, and present the ways of coping with it.

MATERIAL AND METHODS

The study comprised 240 students from the faculties mentioned above and most of them were female. Stress levels were measured using a questionnaire consisting of 14 fully anonymous questions which concerned stress-causing factors, ways of reacting to it and methods of coping with it. Sixty persons were picked from every faculty. Medicine Faculty group included 48 women and 12 men, Pharmacy 53 women and 7 men, Public Health 25 women and 7 men and Dentistry 46 women and 14 men with the average age of 21 years.

RESULTS

When the authors of the study inquired about subjective evaluations of stress, it was found out that the stress patterns were similar in students of all four faculties. The ratio of people affected by stress and those unaffected was similar as well. It needs emphasizing, however, that the highest percentage of people who declare themselves to be stressed were pharmacy students – with the ratio of 61%. In the group of students of Public Health the result is significantly lower, with the value of 45%, and 34% are not stressed at all. The findings are shown in figures 1 to 4, showing the comparison of individual assessment declared by students.

Students openly admit that they often lack adequate knowledge of a given subject. In fact, exams remain a significant cause of stress for nearly every member of the students' community. Although psychological discomfort before and during an exam is a completely natural phenomenon, the intensity of stress is largely dependent on the form of the exam.

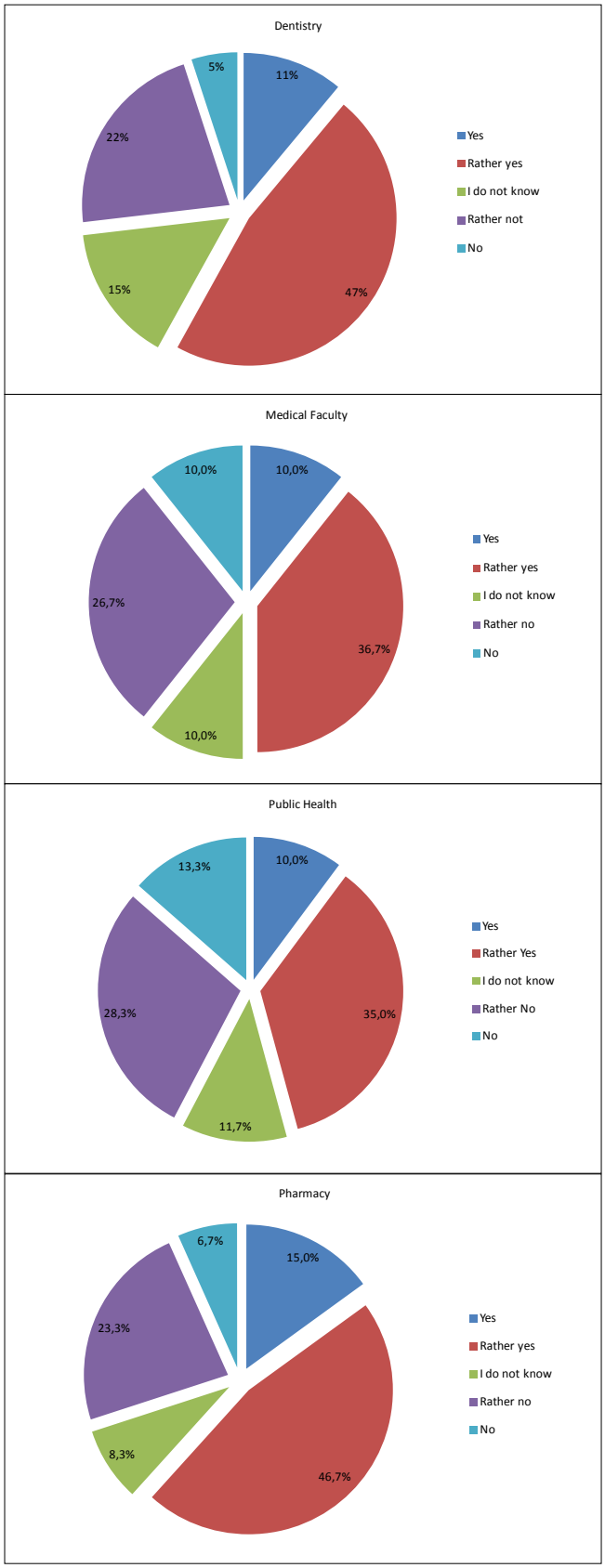

FIGURE 1-4. How many students consider themselves as a stressed person.

It was found that the respondents, regardless of the faculty they had chosen, unanimously claimed that the oral form of verifying their knowledge is more stressful than written exams.

Using the results of that study, we obtained information about factors regarded as stressogenic by the students' community. No matter what their faculty is, students feel stressed before exams. Whenever stress appears, some activity of the central nervous system occurs, which means faster reactions as well as improvements in the processes of gaining knowledge and information processing. If stress lasts longer, it can be felt a month before the exam. The time when students are focused is then followed by a phase of exhaustion. Panic can be observed and every task seems to be difficult to solve.

There is an interesting relationship between the faculty of Public Health and Pharmacy. Students of the latter faculty fare two times worse than Public Health students whenever they have to give a speech during a class.

Students who completed questionnaires consider stress as positive phenomenon for them. The prevailing majority of the respondents think that stress which appears shortly before an exam or test motivates them. It encourages students to learn more, boosting their ambitions. Moreover, a vision of going through a given stressful situation once again motivates students to avoid it. Students admit that they are often unable to focus on gaining knowledge. When they feel the pressure though, they study faster and more effectively. They are able to learn larger parts of difficult material in a short time. Students think that stress plays a positive role – it mobilizes the body for an effort. When emotional tension accompanying stress is relieved, they feel relaxed again.

Students experiencing stress over a prolonged period of time claim that they can feel its negative influence. It decreases their ability to concentrate and remember, and at the same time makes it impossible to study effectively. It makes them feel tired and discouraged. Once the day of the examination comes, causing stress to become more intense turning students to be unable to think logically. They start to experience difficulties recalling their knowledge and feel uncertain, whilst their academic performance becomes lowes, rarely reflecting their true knowledge.

The students who filled out the questionnaires admit that staying in stressful situations for a long time and not knowing how to deal with it, feel that their body begins to react to increased tension. First, they experience mood swings – from irritation to apathy. In turn, this leads to appearance of fear, sleeping or concentration disorders, as well as slight depression symptoms. Other disturbances affect the circulatory and digestive systems. Palpitations and an increase in arterial blood pressure are observed. Students who live under constant stress complain about headaches and abdominal pains. Other stress symptoms are presented in Table 1.

Negative symptoms of stress cause numerous health problems. Sometimes they require medical or psychological advice. Fourteen people from the study group (5.8% of respondents) confirm that they have already sought medical help. Students usually go to a family doctor although occasionally they seek a specialist advice, e.g. cardiologist's or psychiatrist's.

TABLE 1. The most frequently occurring symptoms of stress.

Symptoms	Medicine (%)	Pharmacy (%)	Dentistry (%)	Public Health (%)
Abdominal pain	11.37	12.2	12	40.7
Headache	5.2	2.3	6	11.7
Trembling of hands	10	10.15	11	51.7
Feeling hot	6.6	4.6	4	40
Diarrhea	2.4	3	7	6.7
Vomiting	1	1.5	0.5	1.7
Nausea	5.2	9.1	4	5
Excessive sweating	9.5	5.6	8	36.7
Palpitations	10	9.6	13	41.7
Frequent diuresis	2.8	4	0.5	6.7
Sleep disturbances	10	12.7	12	21.7
Appetite loss	8	9.1	6	8.3
Increased appetite	2.8	3	2.6	13.4
Xerostomia	6.2	3	3.6	5
Feeling of squeezing in the throat	6.6	5.6	6.7	10
Aggression	1.9	2.5	3	3.3
No somatic symptoms	0	1.5	0.5	13.3

Unable to deal with stress in a different way, students turn to pharmacological agents. These are usually nonprescription drugs and dietary supplements. The students also like taking substances derived from plants. They commonly give melissa as an example, claiming that it alleviates mildly intense stress. The examined students also admit taking preparations containing hydroxyzine.

Anything could happen in life. However, taking control over problems, everyone can greatly reduce stress. The effectiveness of such methods depends on various situational determinants (e.g. immediacy of danger, the degree of risk involved, lack of clarity of the situation) and personality determinants (e.g. emotional maturity, the level of intelligence, the feeling of self-effectiveness, personal experience). A combination of situational and personal factors exerts influence over people's choices of either constructive (e.g. focusing on the problem) or non-constructive (e.g. using intoxicating agents, narcotics or alcohol) strategies in stressful situations.

The presented data suggests that, regardless of a student's faculty, listening to music is the main way of coping with stress among students of the Medical University. Sleeping is another common method. The students are least likely to be reducing stress by: eating too much, going to concerts and spending their time on a hobby. Music alleviates tension and stress. Listening to music selected appropriately for one's needs at the moment can help enter a state of relaxation. The results are presented in Figure 5.

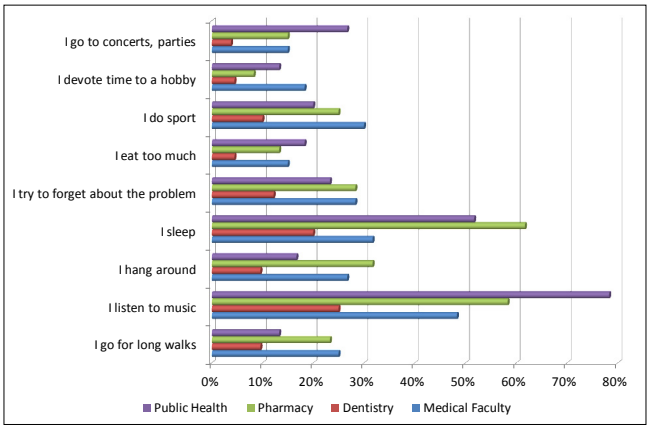

FIGURE 5. Ways of dealing with stressful situations.

Stress is a strong factor affecting our lives and not everyone can deal with its symptoms in a natural way. Listening to music, doing sport or relaxation of sleep are not enough for everyone. Some people reduce stress by using stronger stimuli, like those provided by addictive substances. The answers of those who completed the questionnaires show that Pharmacy students are most likely to use addictive substances (with the rate being 47%), whilst the students from the Medical, Dental and Public Health Faculties turn to addictive substances less often, i.e. 34%.

Addictive substances enable students to escape quickly and effectively from their problems. Alcohol or recreational drugs eliminate stress fast. Thus, stress becomes a factor stimulating dependence and its driving force. Addictive substances mask symptoms which should motivate students to fight them.

Basing on the respondents' answers we know that most often students use alcohol, coffee and cigarettes. Pharmacy students also turn to designer drugs. The results are presented in the figure below.

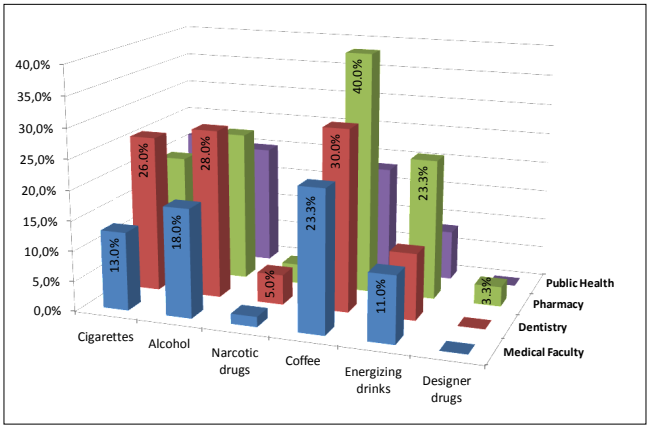

FIGURE 6. Types of addictive substances.

Many people think that cigarette smoking helps them survive stressful situations. It seems that tobacco exerts some calming influence, restrains nerves and tremor. In fact, using it produces an opposite effect, because cigarette smoking accelerates the heart rate, causing an increase in blood pressure, which in turn intensifies stress.

Caffeine remains to be the most important substance responsible for the effects of coffee. It stimulates the activity of the cerebral cortex and the whole central nervous system. Depending on the kind of coffee, one cup contains approximately 70-140 mg of caffeine. After drinking coffee, its increased concentration remains in the blood for two to four hours. Removal of caffeine from the organism is quick. After 10 years of experiments Americans concluded that drinking coffee protects from suicidal thoughts and reduces stress.

The majority of people cope with stress by trying to solve difficulties situations in a constructive way. They use their own resources while seeking help from immediate family and friends. Some of them, however, not possessing the ability to alleviate tension caused by stress, frequently turn to alcohol. This is due to the fact that alcohol conjures up pleasant memories and brings certain short-term benefits. It has a calming effect that works similarly to antidepressants and it can cheer one up. People tend to drink alcohol to reduce the effects of depression or just to improve their mood. Alcohol abuse is harmful for health and most often leads to dependence.

Caffeine is not always effective, thus people looking for ways of increasing the level of physical and intellectual ability turn to psychoactive substances. Some recreational drugs can exert stimulating influence over the body. The reaction after its ingestion is similar to a defensive response to an acute stress: an accelerated pulse and respiration, more effective functioning of the brain, general psychomotor agitation. Sensitivity to pain, hunger and fatigue is decreased.

In stressful situations, the students of the above mentioned faculties usually receive support from their families and friends.

DISCUSION

Members of the young student population have always been vulnerable to stressful life conditions, particularly when pursuing higher professional education in a highly competitive environment [1,3]. The symptoms of the bouts of stress, low moods, inability to concentrate, short temper, changed sleep patterns and loneliness were more frequently cited, as compared to others, such as fatigue, headaches and stomachaches. While cross tabulations of the results in different categories of students considering sex, year of study and lieu of residence, no considerable variation in the results was observed. The most common reasons highlighted were exams and academics, followed by relationship problems in the college or family and homesickness [6-8].

Medical students were satisfied with their individual coping mechanisms. Most frequently, they mentioned sleeping, listening to music, practicing sports and spending time in isolation [7]. Youngsters often consider it a shame to admit, that they lose control over stress which is often a cause of their vulnerability to depression and other mental disorders. The results show that the risk of physical and somatic dependence of toxic substances increases if they are used to reduce the stress. Alcohol abuse constitutes a major danger among young people. We should also pay attention to student's consumption of coffee which contains caffeine. One should be aware of the fact, that caffeine intake in excessive amounts may lead to a number of side effects. The main adverse effects of caffeine abuse are physical hyperactivity, arrhythmia, high blood pressure, insomnia, headaches, gastrointestinal disorders. In addition it can be concluded,

that caffeine often interacts with numerous medications both stimulating and inhibiting. The influence of caffeine on other drugs seem to be often underestimated and neglected by doctors and society.

CONCLUSIONS

The research revealed that pharmacy students are most exposed to stress, whilst Public Health students are those who are least affected. Plus to that, students consider oral exams to be the most stressful form of checking their knowledge. The symptoms that most frequently occur during stress are: abdominal pain, palpitations, trembling of hands, sleep disturbances and excessive sweating. The students who completed the questionnaires admitted that in some cases they sought help of a psychologist, psychiatrist or a family doctor. The results revealed that taking dietary supplements or synthetic drugs on prescription is one of the methods of dealing with stress. The majority of the examined students, however, try to overcome stress themselves by listening to music, doing sports and sleeping, but it also occurs that they turn to addictive substances. They are most likely choose coffee, tobacco and alcohol, and approximately 5% of them use recreational drugs. The conducted study shows that in stressful situations students seek support of their friends and families.

It was found that stress as an intense emotional reaction to a number of stimuli significantly elicits a physiological and psychological adaptation response among students of Medical University in Lublin. If stress exceeds the ability of response, a given person becomes susceptible to somatic and psychosomatic complaints as well as risky behavior, such as the use of addictive substances.

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