MOTIVATION, STRESS AND SATISFACTION AMONG MEDICAL STUDENTS

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MOTIVATION, STRESS AND SATISFACTION AMONG MEDICAL STUDENTS (Abstract): The aim of the study was to identify the relationship between the strength of motivation of medical students, the symptoms they experience, the thoughts of dropping out and the satisfaction with the academic results obtained during their last exam session. The relationship between depression and physical symptoms was also explored. Material and methods: A number of 91 students from 4th year of study were included in the survey. Depression and the strength of motivation were measured using Beck Depression Inventory and Strength of Motivation for Medical School. The obtained data have been processed using SPSS 14 statistical software. Results: A positive correlation between the strength of motivation and physical symptoms was identified, meaning that a higher motivation is associated with a higher number of symptoms experienced by students in stressful moments (r=0.33, p=0.01). Also, women present a higher level of the strength of motivation compared to men [t (89) =0.47; p=0.004, p < 0.05]. A statistically significant difference [t (89) =0.98; p=0.009, p < 0.05] between the average strength of motivation in students who thought about dropping out (M=53.03) and in students who never thought about leaving medical school (M=58.45) was also identified. Perceived depression was also found to predict the number of symptoms felt by students during stressful times. Conclusions: Students that are mostly motivated in medical school also get stressed the most because they want to have good results. Keywords: MEDICAL STUDENTS, STRESS, DEPRESSION, MOTIVATION, ACADEMIC SATISFACTION.

The stress experienced by medical students during their academic years was subject of many researches (1, 2, 3). Medical studies doubled by clinical practice and working with human being determine a high level of stress during academic years (4). These factors may affect the psychological and somatic well-being and their academic performance (5, 6).

The strength of motivation could be described as the amount of effort, invested time and sacrifices people would make in order to learn something (7, 8, 9). When battling against stress, the strength of motivation could be an important factor that would help medical students to find a way to cope with it. It has been found that intrinsic motivation leads to better academic performance than extrinsic motivation (10). Luo Lu has also proven in a study that the
interaction between stressors such as work demands and extrinsic motivation could predict physical symptoms and anxiety (11). Not having a high strength of motivation was also shown to be linked to higher levels of stress and a lower academic performance (12, 13). Also, literature states that there is a gender difference regarding the strength of motivation, meaning that women have a higher strength of motivation than men (14).

Due to the increased stress and demands that are placed on medical students, their life satisfaction is affected. It has been found that life satisfaction decreased during medical school, even though students start with the same level of satisfaction in the first year as the students from other universities (15). Another study shows that students of first years were more optimistic regarding their future profession compared to the students from later years of study, thinking that they will work in the medical field (16).

The fact that life satisfaction is decreasing overtime could also be a warning sign for student dropout. Studies show that dropout may be associated with motivation to study medicine, commitment and resilience, besides the institution factors, gender or age (17). In this way, without the incentives of having a high strength of motivation, being resilient in the face of stressors and finding ways to cope with stress, student dropout could increase significantly.

Stress has also many times been linked to depression (1, 18, 19). Depression affects medical students more than it affects the general population (1, 20, 21), possibly because of high demands in medical school, stressors and few coping mechanisms that students find available. The depressive symptoms may have serious consequences on the way students perceive their competencies and their professional future, causing them to dropout or even have suicidal thoughts (1), especially during their 4th year of study (22) or causing somatic problems (23).

The aim of the study is to identify the relationship between the strength of motivation, the symptoms medical students experience during stressful times, the thoughts of dropping out and the satisfaction with the academic results obtained during their last session of exams. Also, we explored the link between depression and physical symptoms, trying to see whether the mental and somatic health is connected during stressful times in medical students. Through observing the relationship between these variables we could begin to have a better understanding of the medical students’ lives and try to find strategies in order to improve their health and well-being.

**MATERIAL AND METHODS**

The lot of participants to our study consists of 91 students from 4th year of study from the University of Medicine and Pharmacy “Grigore T. Popa” Iasi” (74 women and 17 men). The age was 23.16 ±1.157 years (with a minimum of 22 and a maximum of 32 years).

The level of depression was measured using *Beck Depression Inventory* (24) which has 21 questions and the answers are given on a four-point scale. The Cronbach alpha coefficient was 0.93 in college student samples in literature and the Cronbach alpha was 0.87 in our study, showing good internal consistency.

The motivation was evaluated using the *Strength of Motivation for Medical School* (SMMS) (7). The Cronbach alpha in the literature for this scale is 0.79 and, in our study, the internal consistency was 0.83.
Socio-demographic data like age, sex, illness, the type of family of origin, the presence of a chronic disease among the members of the family, the living conditions and academic results (the number of credits obtained during the previous year) were also considered.

To evaluate the physical and psychological symptoms that students feel during stressful times we created a multiple answer question that consists of a list with 35 common symptoms. One of the items referred to the tendency to leave medical school. Contentment with the results obtained in the previous session of finals was also assessed on a five point Likert scale.

The obtained data have been processed using SPSS 14 statistical software.

RESULTS
Socio-demographic and academic data
A number of 19 students come from a rural area, and 72 students come from urban areas. Concerning their current accommodation, 25 students state they are living in the dorm, 31 (34.06%) are living in a rented apartment, 29 (31.86%) are living with their parents and 6 students (6.59%) are living alone. Regarding the relationship between parents, a number of 8 students said that their parents are divorced, the rest of the subjects declaring that their parents are married.

A number of 8 students (8.79%) declared they are chronically ill. Also, concerning the presence of a chronic disease within the family of origin, 30 students (32.96 %) said that they have family members suffering from a chronic disease, while 61 students (77.04%) said they don’t have chronic disease among the members of their families.

Concerning the number of academic credits students had in their previous year of study, 2 (2.19%) scored lower than 400, 26 (28.57%) scored between 400 and 500, 43 (47.25%) scored between 500 and 550 and 9 (9.89%) scored between 550 and 600, while 11 (12.08%) didn’t state the number of credits obtained, leaving the question unanswered.

Correlational statistics
Strength of motivation
The research explored the relationship between the strength of motivation and physical and psychological symptoms in times of stress, thoughts of dropping out and satisfaction with the academic results obtained.

We wanted to see whether the strength of the motivation of medical students is associated with the number of symptoms checked by the students as being present during stressful times. We found that the motivation correlates with the number of symptoms (r=0.33, p=0.01). The correlation coefficient demonstrates a moderate strength of the relationship and the correlation is positive, showing that a higher motivation is associated with a higher number of symptoms experienced by students in stressful moments.

Regarding the relationship between the strength of motivation and the contentment with results obtained during the last finals session, we found that the level of motivation correlates with the satisfaction with results (r=0.22, p < 0.05). The correlation coefficient demonstrates a weak, but significant relationship between the two variables, showing that a higher motivation is associated with a greater satisfaction with results obtained.

Stressors and depression
In the second part of the study we wanted to see whether the perceived depression would be able to predict the number of
symptoms checked by students during stressful times. A significant regression equation was found \[ F (1.89) = 18.75, \ p < 0.01 \], with an R square=0.174.

**Comparative statistics**

We compared the strength of motivation considering the existence of thoughts regarding interrupting or abandoning the medical studies. A statistically significant difference was obtained \[ t(89)=0.98; \ p=0.009, \ p < 0.05 \] between the average strength of motivation in students who thought about dropping out (M 53.03) and in students who never thought about leaving medical school (M=58.45).

The sex difference on the strength of motivation was also measured. We found a statistically significant difference \[ t(89) =0.47; \ p=0.004, \ p < 0.05 \] between the average strength of motivation of men (M=50.47) and of women (M=57.86), meaning that women present a higher strength of motivation compared to men.

**DISCUSSION**

Stress is affecting daily activities and has a great impact on the psychological and physical well-being. It also determines how people are reacting in common situations and is closely linked to the level of performance (1, 25). Researches proved that in some jobs, especially in the medical profession, a high rate of burnout is associated with a high level of depression and suicidal thoughts (22).

We found that the strength of motivation is correlated with the number of physical and psychological symptoms felt, meaning that the higher the students’ motivation, the greater the number of symptoms shown. When the students act without being satisfied about their work, they are more stressed comparing to the colleagues who are more pleased about their academic work. Our results show that students with a high strength of motivation are more stressed because they want to be overachievers, train well for their future profession and, when they feel they aren’t at their best compared to the image they created for themselves, they could feel emotionally and physically exhausted, thus experiencing more symptoms than a student with a lesser motivation, one that isn’t so preoccupied with the studies and with results.

The correlation between motivation and the contentment with results from the previous exam session shows that students with a higher motivation are also the ones that are more satisfied with their results, demonstrating that motivation is connected to greater academic performance, finding that is consistent with other researches (26, 27).

The strength of motivation varied significantly in students who have thought about dropping out and in students who haven’t had such thoughts, meaning that the students that didn’t see quitting medical school as an option had a higher motivation than the others. Literature has stated that one important risk factor for student drop-out is motivation, besides scores obtained in high school and parents’ education (28).

Stress is very high and constant in medical school and, if the motivation of students isn’t strong enough in order to help them efficiently deal with problems, thoughts about dropping out appear.

A difference in the strength of motivation was also found in men and women, showing that women have a significantly higher motivation than men. The fact that female medical students seem to have a higher strength of motivation and motivation quality than men has also been stated in literature (29).

Depression and stress have been linked
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in numerous times in literature (30, 31, 32). We found that the level of depression in medical students was able to predict a higher level of somatic symptoms during stressful times. This is an issue that needs to be addressed in order to contribute to the health and well-being of future doctors, given the fact that the stress in medical school is constant and is followed by stress after graduation, during their entire profession. Also, the medical profession is associated with a higher rate of burnout, especially for professionals working in emergency departments, surgery, obstetrics and gynecology and anesthesiology clinics (33) so students must have strong knowledge about coping strategies.

CONCLUSIONS
Medical students have to get through the university and to endure lots of pressure and stress until they become doctors. Our study proves that depression, the strength of motivation and stressors are affecting the somatic and psychological health and that they also have an impact on academic activity and satisfaction. The results are important for students and for the academic staff. In order to help them prevent or diminish the level of stress experienced during their academic years we need to have lectures in the curricula information about medical psychology and coping strategies.

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