

# The Influence of Personality Factors and Stress on Academic Performance

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**ABSTRACT:** The personality factors exert a proved influence on the way the students learn and evolve throughout their academic period. This study was performed on a representative group of 259 students from the University of Medicine and aimed at analyzing the influence of three personality factors, Neuroticism, Extraversion, Conscientiousness, and of stress on the academic performance. The results revealed that only two of the personality factors have a significant influence and that stress has more of a motivational role.

**Keywords:** personality, stress, academic performance

## Introduction

Over time, the personality studies have answered many questions and provided a detailed image regarding the causal relations between a person's interior world and its manifestation through behaviors in the various situations. In the educational context, the personality traits ensure the development, explain individual choices and describe the degree of involvement in different activities [1], while the Big Five factors (neuroticism, extraversion, openness to experience, agreeability, conscientiousness) have been described as predictors for various aspects involved in the academic evolution. The academic performance and its relation with the personality has been intensely studied, as there is currently a strong agreement only regarding the role of Conscientiousness, while the rest of the factors either lack a sufficiently clear definition, or determine different results depending on the other variables included in the study.

## Material and Method

The study was performed within the Faculty of Medicine from the University of Medicine and Pharmacy from Craiova in the period 2013-2014, with the students' voluntary participation. 259 students from the years III-VI participated at the study, of whom 68 male (26.25%) and 191 female (73.75%), by observing the gender distribution which characterizes the total student population of the Faculty of Medicine.

The aim of this paper is to identify the personality profile associated with the academic performance in the educational context of the Romanian Higher Medical Education System. By analyzing the studies on this topic, one can

draw the conclusion that each personality factor has an important and well-defined role in achieving academic success, so we are more interested in the unique role they combine rather than in their separate influence. We hope that, by becoming more aware of the roles played by the personality factors involved in the academic performance, we would identify ways to optimize these relations, so that the academic preparation to be made self-consciously, responsibly and enduringly.

We have formulated the following hypotheses:

1. The stress triggered by life events will have a negative influence on the academic performance from the last year;
2. The subject's gender will not influence the measured stress level;
3. The Neuroticism personality factor has a negative influence on the academic performance;
4. The Extraversion personality factor has a negative influence on the academic performance;
5. The Conscientiousness personality factor has a strong and positive influence on the academic performance.

In order to obtain the data, the NEO-FFI personality inventory and the Holmes-Rahe life event scale for youth and teenagers were used. The academic performance was measured by means of two indicators:

- the general average grade, calculated based on the results obtained by the students throughout their entire academic period at the faculty
- the average grade from the last exam session (hereinafter called the average grade from last year or last semester) which is calculated by using the grades

obtained by the students at their first examination, excluding re-examination sessions or grade-improving sessions.

The results were divided in three categories:

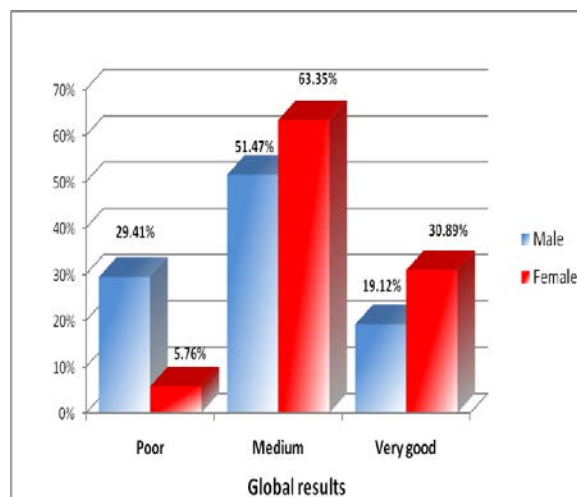
- very good results: average grades comprised between 9.01 and 10.00;
- medium results: average grades comprised between 7.01 and 9.00;
- poor results: average grades comprised between 5.01 și 7.00.

For establishing the categories we have used the levels corresponding to the letter-based scale grading. [2]

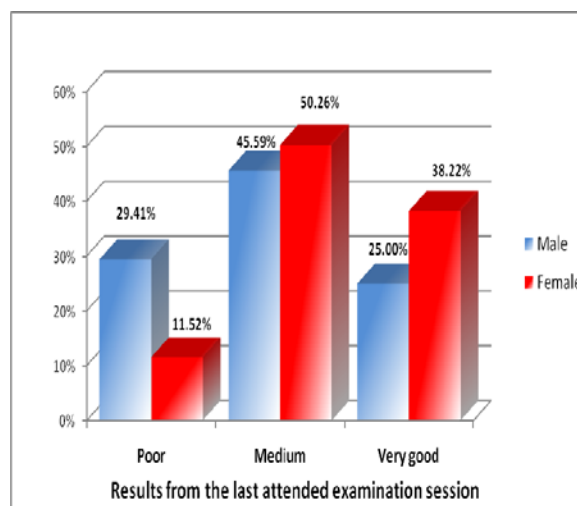
## Results

Although the gender comparison between stress level categories revealed there are no significant differences between male and female subjects, as far as this aspect is concerned ( $p > 0.05$ ), the comparison of the average values of the stress scores revealed the existence of a significant difference ( $p < 0.05$ ), as female subjects present a higher score average than male subjects.

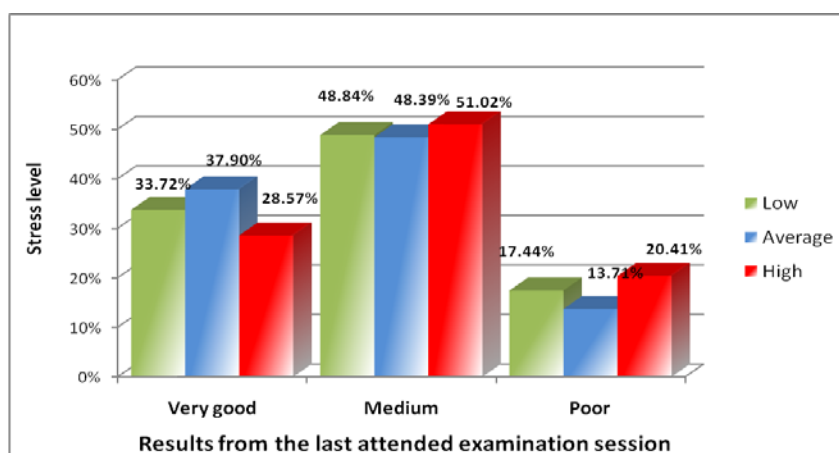
There are highly significant differences between the two gender distributions according to the global academic results ( $p < 0.001$ ), but also significant differences ( $p < 0.005$ ) between the distributions of the two genders according to the academic results from the last attended examination session. The male subjects present in poor results a higher proportion, while the female subjects present medium and very good results in a significantly higher proportion.



**Fig.1. General results (performance) by gender**



**Fig.2. Results from the last examination session by gender**



**Fig.3. Results from the last attended examination session by level of stress**

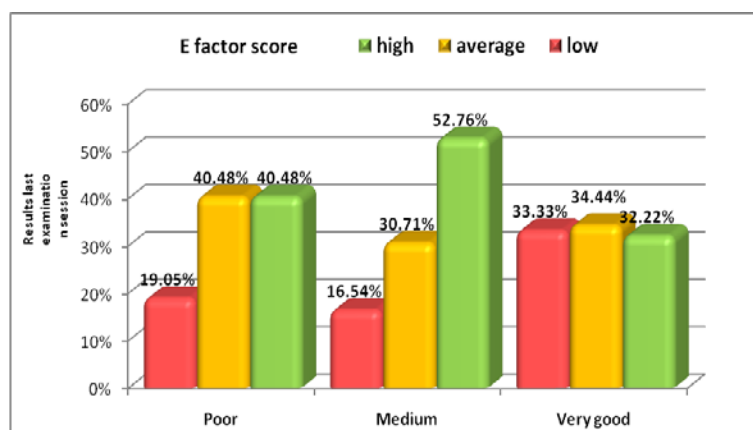
We are interested in ascertaining whether there is a correspondence between the results obtained in the last year and the results from other academic years. In order to verify this hypothesis, we have calculated the value of the Cohen's Kappa quotient for the incidence table which summarizes the connection between the two aforementioned parameters. The value of the Kappa quotient was 0.66 (CI 95%=0.59-0.74), which indicates of strong correspondence between the global academic results and those from the last analyzed semester.

By comparing the results from the last year according to the students' level of stress, we noticed that there is no significant difference between students with different levels of stress ( $p$  Chi square>0.005), hypothesis 1 being thus refuted.

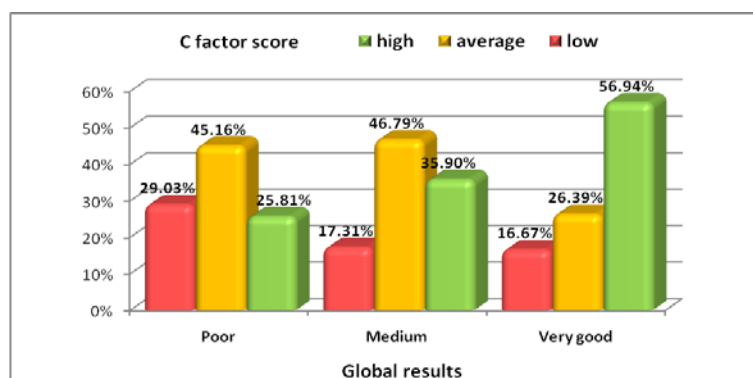
By comparing the general results, from all years, but also those from the last examination

session according to the N personality factor, we noticed that there is no significant difference between the students with various obtained results ( $p$  Chi square>0.005), hypothesis 3 being thus refuted.

By comparing the general results, from all years according to the E personality factor, we noticed there is no significant difference between students with various obtained results ( $p$  Chi square>0.05). However, we noticed significant differences regarding the levels of the E score ( $p$  Chi square<0.05) for the students with different results in the last academic year. The students with good results in the last year tend to record lower E scores than those with medium and poor results. So, up to this point, we could ascertain that hypothesis 4 is partially confirmed.



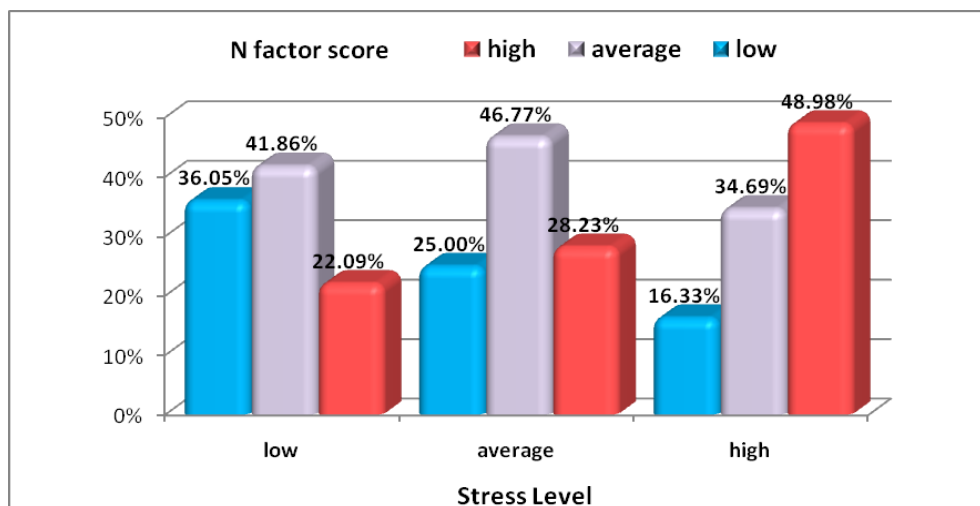
**Fig.4. Results from the last examination session by the E factor score**



**Fig.5. General results by C factor score**

We have identified statistically significant differences ( $p$  Chi square<0.05) regarding the level of the C score for the students with various general results. By analyzing the data, one can observe there is a direct correlation between the level of the C score and the quality of the results, as the students with better results

presenting a high C score in a higher proportion. We did not notice significant differences regarding the level of the C score for the students with various results in the last academic year ( $p$  Chi square<0.05). Thus, at this stage, we can ascertain that hypothesis 5 is partially confirmed.

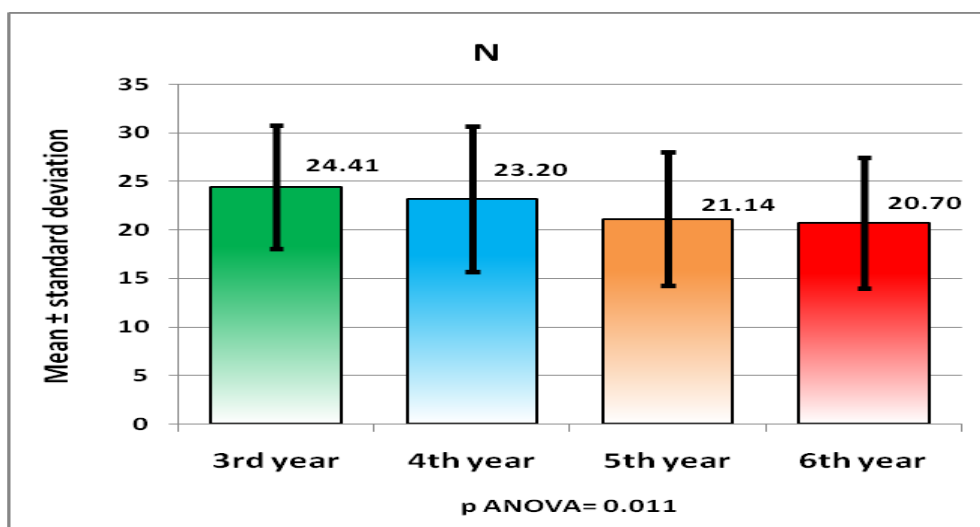


**Fig.6. Level of stress by the N factor score**

One can notice significant differences regarding the level of the N factor score ( $p$  Chi square $<0.05$ ) for the students to whom we have identified various stress levels.

The level of stress seems to be directly correlated with the level of the N score, as students who accuse a high level of stress present higher N scores, respectively students with a lower level of stress present low and average N scores in much higher proportion.

By comparing the average values of the N personality factor depending on the students' current year of study, we noticed the existence of statistically significant differences ( $P$  ANOVA $<0.05$ ). The Fisher LSD test highlighted that there are significant differences between the average value for the 3rd year and the 5th year, between the 3rd year and the 6th year, as well as between the 4th year and the 6th year.



**Fig.7. The average values of N factor scores by year of study**

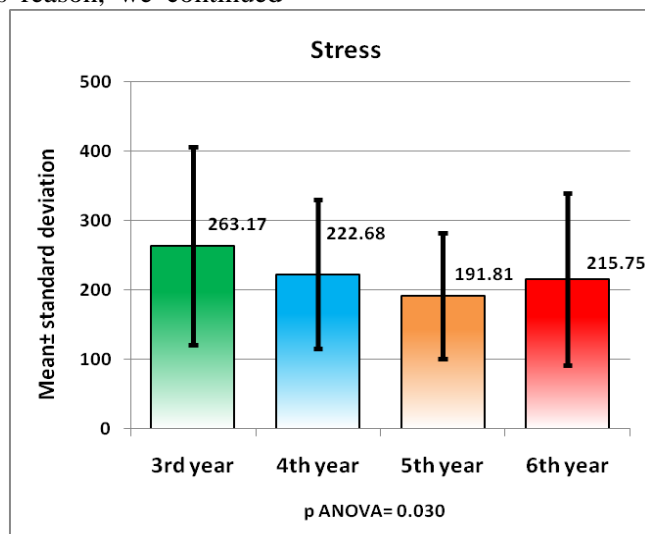
We have also analyzed the differences between the scores obtained at the N factor by the subjects' gender. The result of the t Student test,  $p<0.001$ , shows that there is a highly significant difference between the values of the N factor scores for male and female subjects, as females present higher values.

We did not notice the existence of statistically significant differences between the average values of A personality factor

depending on the students' current academic year ( $p$  ANOVA $>0.05$ ). We have also analyzed the differences between the scores obtained at the A factor depending on the students' gender. The result of the t Student test ( $p<0.05$ ) shows that there is a significant difference between the values of the A factor for male and female subjects, as female subjects present higher values.

We noticed the existence of statistically significant differences between the average values of the compared stress scores depending on the students' current academic year ( $p$  ANOVA $>0.05$ ). For this reason, we continued

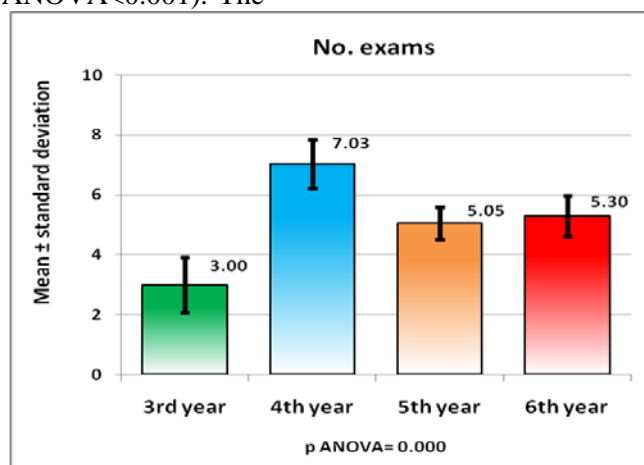
the analysis by means of the Fisher LSD test and ascertained that there significant differences between the average values for the 3rd and 5th years, as well as between the 3rd and 6th year.



**Fig.8. The average values on the stress scale by the subjects' gender**

We noticed the existence of high statistically significant differences between the average values of the number of exams from the last academic semester depending on the students' current academic year ( $P$  ANOVA $<0.001$ ). The

analysis by means of the Fisher LSD test revealed that there are significant differences between all pairs of academic years, except for the difference between the 5th and 6th year.



**Fig.9. Average values of the number of examinations by year of study**

The 3rd year involves the least examinations, while the 4th the most. The differences between the 3rd year and the others and between the 4th year and the others is higher than any other comparison pair that can be formed, whereas, if we analyze the 5th year and the 6th year, we can notice that they are fairly balanced as far as academic challenges are concerned, and the differences between the pair are low.

Further on, we analyzed the differences between academic years regarding the average grade from the last year, meaning the last grades

obtained without re-examination and grade improvement sessions. By comparing the average values of the results recorded in the last year depending on the students' current academic year, we noticed the existence of high statistically significant differences ( $p$  ANOVA $<0.001$ ). The Fisher LSD test highlighted that there are significant differences between the average values for the 5th and 6th years. The 5th year presents the lowest average, while the 6th the highest, even if the previously analyzed number of examinations suggests that

the performed academic effort is the same. There are no significant differences between the other pairs of years, although the 4th year involves the most academic topics and more evaluation requirements that have to be fulfilled.

We then analyzed the differences between academic years as far as general average grade from all academic years is concerned. By comparing the average values of general results depending on the students' current academic year, we did not notice the existence of statistically significant differences ( $p$

ANOVA>0.05). Even if there are significant differences between the average grades obtained in the last examination session, if we are to have an overview image, these differences blur, which suggest once more how important the re-examination and grade improvement sessions are.

Between the analyzed numerical variables we identified the following statically significant correlations, by means of the  $r$  Pearson correlation quotient.

**Table 1. Significant correlations between the personality factors, stress and academic performance**

Variables		r Pearson quotient	Correlation type	
N	E	-0.312	inverse	weak
N	O	-0.169	inverse	very weak
N	C	-0.335	inverse	weak
N	Stress	0.265	direct	weak
E	O	0.287	direct	weak
E	A	0.177	direct	very weak
E	C	0.414	direct	moderate
O	C	0.203	direct	weak
O	Stres	0.229	direct	weak
A	C	0.223	direct	weak
Last semester average	No. exam. last. sem.	0.193	direct	very weak
Last semester average	General average	0.868	direct	very strong
Last semester average	C	0.125	direct	very weak
General average	C	0.145	direct	very weak

One can notice that the stress level is correlated with the values for N and O. The results, both the average grade from the last academic year, and the general average grade significantly depend just on C, without being correlated with the stress.

We performed a multi-variable linear regression in order to estimate the value of stress

depending on the personality traits (N, E, O, A, C), on the number of examinations in the last year and on average grade obtained in the last year. We have thus reached the following calculation formula, whose accuracy is highly significant ( $p < 0.001$ ).

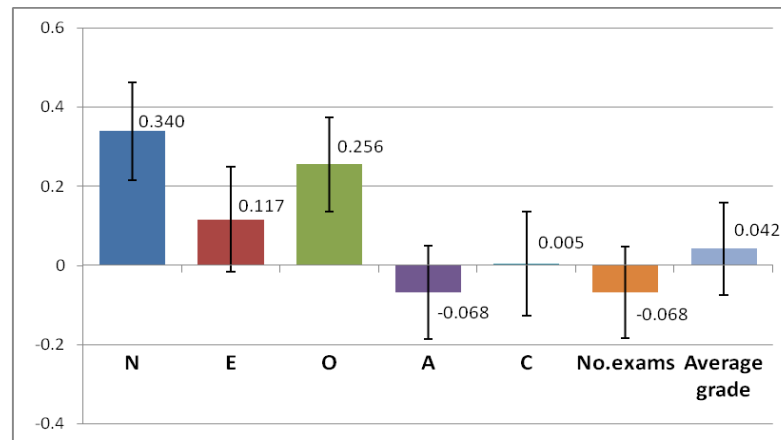
$$\text{STRESS} = -111.29 + 5.79 \cdot N + 2.55 \cdot E + 5.63 \cdot O - 1.40 \cdot A + 0.087 \cdot C - 5.59 \cdot \text{No. exam.} + 4.08 \cdot \text{Average grade}$$

**Table 2. The regression table for estimating the value of strees depending on the personality factors**

Variable	Standardized quotient	Standard error	Superior limit. CI 95%	Inferior limit. CI 95%	p
N	0.340	0.063	0.216	0.464	< 0.0001
E	0.117	0.068	-0.017	0.250	0.086
O	0.256	0.061	0.137	0.376	< 0.0001
A	-0.068	0.060	-0.186	0.050	0.256
C	0.005	0.067	-0.128	0.137	0.946
No. exam.	-0.068	0.059	-0.185	0.049	0.253
Average grade	0.042	0.060	-0.075	0.160	0.479

The resulted model depends from a statistically significant point of view just on the personality factors Neuroticism (N) and Openness to Experience (O), as the other

parameters involved in the calculations do not contribute significantly. Both N, and O influence the stress in a directly proportional way.



**Fig.10. The parameters of the regression equation for estimating the value of the stress**

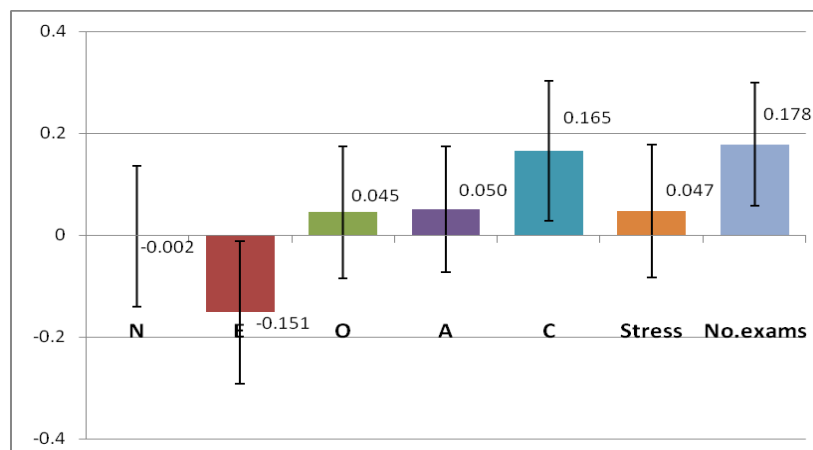
We performed a multi-variable linear regression in order to estimate the value of the average grade obtained in the last semester depending on the personality traits (N, E, O, A, C), on the number of examinations in the last

year and the stress score obtained as result of the testing. We have thus reached the following calculation formula, whose accuracy is highly significant ( $p < 0.05$ ).

$$\text{Average SEM.1} = 6.56 - 0.0004 * N - 0.034 * E + 0.01 * O + 0.011 * A + 0.033 * C + 0.0005 * \text{Stress} + 0.153 * \text{No. SEM.1}$$

**Table 3. The regression table for estimating the average value from the last examination session (academic performance)**

Variable	Standardized quotient	Standard error	Superior limit CI 95%	Inferior limit CI 95%	p
N	-0.002	0.070	-0.141	0.136	0.974
E	-0.151	0.071	-0.292	-0.011	0.035
O	0.045	0.066	-0.086	0.175	0.500
A	0.050	0.063	-0.074	0.175	0.425
C	0.165	0.070	0.027	0.303	0.019
Stress	0.047	0.067	-0.084	0.179	0.479
No.exams	0.178	0.062	0.057	0.300	0.004



**Fig.11. The parameters of the regression equation for estimating average value from the last examination session (academic performance)**



The resulted model significantly depends only on the Extraversion (E) and Conscientiousness (C) personality factors and on the number of examinations.

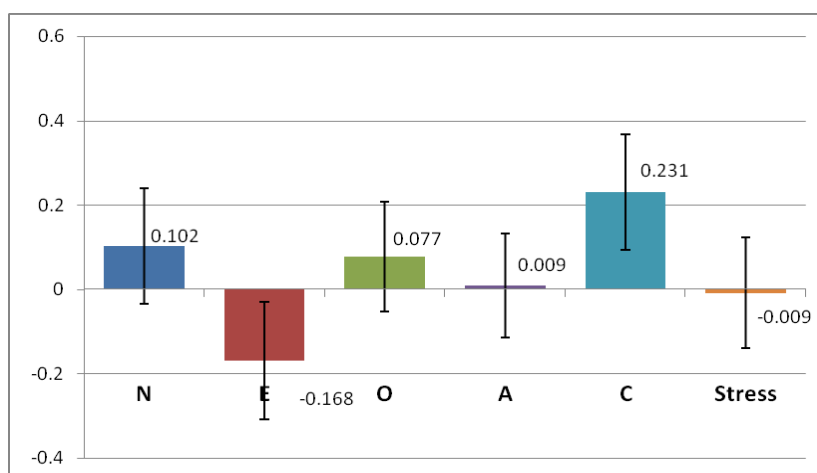
The value of the C factor and the number of examinations from the last academic year has a directly proportional influence on the average grade value from the last year, whereas the value of the E factor has a negative inversely proportional influence.

We performed a multi-variable linear regression in order to estimate the value of the general average grade depending on the personality traits (N, E, O, A, C), on the number of examinations in the last year and the stress score obtained as result of testing. We have thus reached the following calculation formula, whose accuracy is highly significant ( $p < 0.05$ ).

$$\text{Gen. AVERAGE} = 7.131 + 0.014 * N - 0.029 * E + 0.013 * O + 0.0015 * A + 0.036 * C - 0.00007 * \text{Stress}$$

**Table 4. The regression table for estimating the value of the general average grade (academic performance)**

Variable	Standardized quotient	Standard error	Superior limit CI 95%	Inferior limit CI 95%	p
N	0.102	0.070	-0.036	0.241	0.146
E	-0.168	0.071	-0.308	-0.029	0.018
O	0.077	0.066	-0.054	0.208	0.249
A	0.009	0.063	-0.115	0.134	0.884
C	0.231	0.070	0.092	0.369	0.0012
Stress	-0.009	0.067	-0.140	0.123	0.897



**Fig.12. The parameters of the regression equation for estimating the value of the general average grade (academic performance)**

The resulted model depends in a statistically significant way only on the Extraversion (E) and Conscientiousness (C) personality factors.

The C value has a directly proportional influence on the value of the general average grade, whereas the E value has negative inversely proportional influence.

The Chi square test performed on the grade categories did not reveal an influence of the C factor on the average grade from the last session, respectively of the E factor on the general average grade. While the influence of the C factor on the average grade from the last session is weak and there are chances it may not be

detected by means of the Chi square test, if one considers the case of the influence of the E score on the general average grade, one can talk about the Pearson correlation quotient's incapacity to correctly detect a relation that is not linear, in which case the connection between the two parameters is better estimated by means of a polynomial equation.

## Discussion

This paper aimed at studying the influence of the personality factors and of stress on the academic performance. According to our expectations based on prior research performed on this topic, it has been proved that there are



significant differences regarding academic performance depending on the subjects' gender and on influence of the personality factors. Contrary to our expectations, the stress triggered by life events does not influence the academic performance.

The goal of the study has been to establish which of the Big Five personality factors are involved in achieving academic performance, as well as the extent to which the psychological stress triggered by common life events affects this variable. In the same time, we also considered highlighting a possible connection between personality factors and stress, a connection which could affect the academic performance, as reflected in the obtained grades. We established the individuals' personality profiles, we identified stressing events they experienced in the last year and ascertained the connections between them and the grades obtained in the last year, but also from the moment the academic studies began.

For measuring the academic performance, we have used two indicators: the general average grade, calculated based on all grade obtained by the student throughout their evolution, and the average grade from the last semester, calculated based on the grades obtained by the student during the last examination session. We consider them both equally important, as they describe different aspects of the same concept. The general average grade describes the performance achieved through a long term effort, with more situations when it can be improved, while the average grade from the last examination session describes the results as they can be observed at a first contact with the situation of being examined for academic topics, depending on the effort performed by the student throughout that semester. By academic performance we mean not just a measure of the learning capacity, but rather as a vast concept which describes the entire process of adapting to academic environment, as the examination methods are various and evaluate, besides, the individual knowledge and abilities, also the social ones.

The subjects were students in the years III-VI of the Faculty of Medicine, who participate at clinical seminars and have a busier activity than those in the first two years, whose studies are limited to the pre-clinical topics, thus rendering the comparison of their results more difficult. The activity of the students involved in our study involves, besides courses and laboratories within the university, a large hospital practice sessions, interactions with patients and with more university professors for the same topic,

which means teaching, but also evaluation methods that are more complex and less standardized.

The stress triggered by life events from the last year does not seem to influence the grades obtained by the students in the last examination session. However, the female subjects obtained higher score on the stress scale than their male counterparts. This statement is particularly important for the formation process of the future doctors, as there is a known fact that each person handles stress in a different manner, according to their gender. This can lead us to the idea that we can apply the same coping strategies for the academic stress, as for other aspects of life. Moreover, there are significant differences between subjects depending on their year of study, as the 3rd year students recorded higher scores on the stress scale than the others.

If we are to consider only the subjects' gender, we can notice that the female subjects achieve general academic performance and in the last examination session significantly higher than that of the male subjects, not just quantitatively, but also qualitatively, conclusion which has been reached at by other studies [3]. One part of the explanations stem from learning styles, which differ depending on the subjects' gender. The female subjects prefer a superficial approach, based on reproducing contents, positively correlated with Neuroticism and Agreeableness, while the male subjects employ a deep learning approach, based on comprehension, which is positively correlated with Openness to Experience and Extraversion and negatively with Neuroticism [4].

In the same time, the female subjects recorded higher scores on the stress scale. Thus, the female subjects obtained good results, although they experienced a higher stress level, while the male subjects obtained poor results, although they experienced a low stress level. Moreover, as other research has shown, the female subjects obtained higher scores on both the Agreeableness and Neuroticism scales, which means they are seen as reliable persons, with an inclination towards harmony, and as more sensible, with frequent fluctuations of the emotional states, and more predisposed to anxiety, anger and guilt. [5]

The stress is directly correlated with the Neuroticism and Openness to experience personality factors and it is higher for the 3rd year in comparison to the 5th and 6th years. Thus, the emotional instability and the permanent quest for new experiences determine changes in the life of our subjects, affecting the

way their entire lives will take place, for example the relationships with others and the lifestyle, categories included in the life event scale.

**Conscientiousness (C)** directly and strongly influences, along with an inversely proportional negative Extraversion and with number of examination, the average grade from the last examination session, and in combination with negative Extraversion, inversely proportional the general average grade. The introverted, organized individuals, who plan their tasks, both professionally, and personally, who control their impulsiveness, manage their emotions and perseveringly pursue their objectives achieve academic success in all moments of their evolution.

The number of examinations the students have every year and semester influences in a directly proportional way the average grade from the last examination session, but not the general average grade, and only in combination with the C and E personality factors, which means, that the re-examination and grade improvement sessions and the way they are passed are important in the calculation of the general average grade. If we notice there are differences regarding the grades from the last session for the 5th year and the 4th year, although they have the same number of examinations, but not the same general average grades, we could state that they can be attributed to the personality factors, as scores on the stress scale are not different. Although the 3rd year has the least examinations, and the 4th year the most, their average grades do not differ significantly from the others', so we can conclude again that the personality factors bear responsibility for this, especially Neuroticism, to which the 3rd year and the 4th year recorded higher scores, considering the scores on the stress scale did not present significant differences.

The conscientiousness is the personality factor, which, over time, benefitted from the most attention from the researchers, in relation with the academic performance. It is an important psychological resource for the learning and education processes due to the characteristics the individual with high scores have: organization, efficiency, practicality, balance, constancy. Moreover, it has an incontestable behavioral value and an easily noticeable importance for the individual and their social relations. [6]

Of the five personality factors, conscientiousness, also named the desire to

succeed, correlated the strongest with the academic performance [1-4, 7-10], constantly appearing in the results for the most relevant field topics, regardless of the modality it is measured. [11, 12] The performance achieved in different stages of education, regardless of the country the study has been conducted, can be attributed to its multiple facets. Currently, it is regarded as the most important psychological aspect in the given context, especially due to the role it has in shaping the character. The conscientiousness is also a predictor for the performance in a certain assignment, as individuals with high scores are more concentrated on the assignment than on the relation with others. [13]

If we analyze the specialized literature, Conscientiousness appears as responsible for the success in any field, while in the academic field is a predictor, including for the number of education years, along with Openness to experience. Conscientiousness has always been connected to concepts such as aversion to risk, preferences in spending leisure time and time management. [15]

The explanation mention the increased effort the individuals with a high score for the C factor perform and the positive perception they have about their academic abilities and go as far as detailing the involvement modalities for each subscale. For example, of all the Conscientiousness' facets, not the order and organization are those which ensure success, but the self-control capacity, the effort to achieve performance when obstacles occur, the capacity to stay motivated over a long term period and perseverance. It has often been suggested that this factor is closely related to motivation [3, 8], the most often encountered mechanism through which self-effectiveness, which is the individual's belief that he can produce a certain expected level of performance in a certain assignment, leads to success, especially when the extrinsic factors are constant, while the studies have shown that between self-effectiveness and conscientiousness there is a very strong link. The individuals who believe in their ability to successfully fulfill an assignment are more involved in initiating and applying some strategies which would ensure the success. Self-effectiveness is, in some studies [16] the emotional and behavioral expression of the combination between all personality factors, experience and cognitive abilities, while in other, just of C, N and E factors in others [12], and they positively correlated with academic performance [11,17]. Sometimes, the connection

between Conscientiousness and Neuroticism can work against performance. When such a factor as self-effectiveness occurs, and the individual has a high confidence in his possibility to succeed in an examination, those with high levels of emotional stability (low score at the Neuroticism factor) can present over-confidence, which decreases their academic motivation. [18]

Depending on the connection it can form with the other factors, we can have a view over the exact way an individual can achieve performance with the help of the C factor: by conformity, by independence, in relation with the others' goals or their own goals etc.

In the same time, besides motivation, Conscientiousness is connected to the "character strength", and it has been speculated that, in the academic environment, individuals are believed to increase their Conscientiousness, especially the capacity to perform a prolonged effort for achieving the goal, in order to compensate for a relatively low intelligence. [1, 8] Still, the C factor influences the academic performance independently of the intelligence and has a higher predictive value than it. [3, 9]

Those with high score at the C factor have the tendency to procrastinate, to postpone the assignments and the decisions they have to make, and to give up when faced with obstacles [3] and present a twice as high risk to fail. [19]

No differences have been reported between men and women as far as this trait is concerned, but there studies which show than women obtain higher scores on certain subscales, such "sense of duty", but with no significant differences. [5]

The students from the 3rd and 4th years have higher scores at the **Neuroticism (N)** factor, so they are more emotionally unstable than those from the 5th and 6th years, but this aspect has not proved to be a predictor for their academic performance. In the same time, the result analysis revealed that the IIIr year students present a higher level of stress than the others.

The neuroticism has proved to be directly correlated with the stress level, as the students with a high score in the N scale present a high stress level, while those with a low stress level have average and low scores in a higher proportion. It is known that those with low and average scores on the Neuroticism scale are calm persons, who manifest fairly positive emotions, which helps them in normalizing and solving problematic situations, without this affecting their pacing and lifestyle. According to the result analysis, the female subjects have

higher scores than male subjects, so they are more emotionally unstable than them.

Those with high scores at this factor are more anxious, more concentrated on their own feelings, which is supposed to decrease the academic performance. Emotional stability (high score at the N factor) has been associated with self-effectiveness, which is directly correlated with performance, indicating that emotional stability correlates the same. Since the role of this factor is to moderate the impact of aggressor agents, it is understandable why it affects the examination results. However, there is a category of people this correlation does not apply to, that of people with increased intelligence, who have a much higher capacity to manage their own emotions triggered by past situations, where they developed such strategies from. [19]

The anxiety these individuals experience during stressing situations, such as examination session, can decrease motivation and can be a cause for the absenteeism triggered by the physiological consequences of the psychic tension [1, 3].

In the same time, it has been proved that Neuroticism is connected to a negative self-image, a negative evaluation of one's own intelligence, both influencing the type of coping for that situation, but it does not always correlated with academic performance. [1, 6, 8].

On the other hand, there are studies which show that Neuroticism negatively correlates with the academic performance, the explanations revolving around the effects of anxiety and strong negative feelings, which affect memory, attention, uncertainty, confidence in one's own abilities, so the learning capacity. As in the case of the Conscientiousness, in the situations when the subjects have an increased intelligence, the role of the N factor can change and anxiety can have a motivating effect. Negative associations which have been made between academic success and neuroticism are mostly the result of the Anxiety and Impulsiveness subscales, and, regarding the latter, there are not many performed analyses. [1]

But Neuroticism can have positive influences on the academic performance, as it is the case of our study, in certain contexts, such as the one when there is a high level of Conscientiousness and self-effectiveness. The way the two concepts change the relation has already been explained within the paragraphs dedicated to the analysis of the C factor and refer to the differences in motivation appeared between emotionally stable and unstable students, which

are supposedly attributed to the negative consequences of the emotional stability. When students believe in their capacity to pass the examination with a high grade, the emotionally stable ones present an over-confidence which decreases the academic motivation and affects, implicitly, their academic performance. Also, self-effectiveness has not been proved as having a demonstrated effect on academic motivation, which means that the way the neurotic students positively face the fears related to failure, such as increased involvement in preparing the exams during the semester, and by employing strategies which are in their disadvantage, as thought before. [18]

The behaviors which lead to performance are the result of the emotional conflict between the hope of success (associated with the C factor) and the fear of failure (associated with the N factor). [6]

Moreover, emotional stability is a predictor rather for the contextual performance, which refers to behaviors involved in the way to achieve the goal, and the performance in an assignment, which involves its strict realization. [12]

Women usually obtain higher scores than men at the Neuroticism factor and are more preoccupied by feelings than by ideas, difference present in almost all studied cultures and for which there is little explanation. [5]

**Extraversion (E)** is another relevant factor in the academic context and, in our study, they correlate negatively and inversely proportional with the general academic performance, as well as with the results obtained in the last examination session, conclusion supported by other studies. [1, 2, 8, 20] The introverts, who are silent, withdrawn and are comfortable when they are rather isolated from the groups, are more easily distracted, obtain higher grades than extroverts both the first time they have the examinations and during the sessions organized for re-examinations and grade improvement. On the opposite side, the extroverts are talkative, dominant, open to express emotions and assertive and have previous positive experiences that involve successfully managing situations, which leads them to believe in a positive outcome. There are empirical proofs that connect extraversion and a high degree of self-effectiveness. But as result of this profile, the extraverts seem to be more motivated by the group dynamics and by the high position they can have and less by the individual performance in a certain assignment. [1, 12]

The relation between the E factor and the academic performance changes from that one in general school, where it is positive as result of the leisurely social context, in which socialization is encouraged, into the one in university, where it is negative as result of a more formal and competitive social environment. The explanations revolve around the ways of spending time, which for extraverts mean socialization, while for introverts mean individual study. The introverts have positive beliefs about their level of intelligence, but they do not influence the academic performance, so that the failure or success in this field has only been attributed to the personality factors, especially the N, C and E factors, and to the way they combine in that academic context. [8, 20]

In the same time, the extraverts make premature decisions, which involve and increased adjusting effort as they advance in the assignment solving process. [3]

There have been reports showing important correlations between perseverance, on the one hand, and neuroticism and introversion, on the other, thus involving these two factors in the educational context even more. [6]

For this factor, the differences between genders vary from a facet to another, especially depending on the instrument they are measured with. When the NEO PI-R is used, there is a tendency for the female subjects to obtain higher scores for 3 subscales, while male subjects only for two. [5]

**Agreeableness (A)** does not have a direct significant influence on academic performance in our study. It influences neither the grades obtained in the last examination session included in the analysis, nor the average grade, calculated for all years. According to the result analysis, women have a more marked agreeable character than men. By observing the differences between men and women regarding academic performance, both quantitatively, and qualitatively, as the women obtained higher grades than the men, one can draw the conclusion the A factor has an indirect influence on the dependant variable, in combination with other factors and in a certain educational context.

The persons with high scores at the A factor, namely the female subjects in our study, are preoccupied by the harmony in relation with others, by cooperation, are optimistic and willing to make compromises, being perceived as friendly, honest and reliable. According to similar research, such persons will have a

significantly higher academic success than those with low scores. [19, 21]

By way of contrast, the persons with low scores at this scale, namely the male subjects in our study, are egocentric, favor competition, not cooperation, and are suspicious. The extreme are not desirable, as very high scores are associated with dependant personalities, while the low scores are associated with narcissistic, antisocial and paranoid personalities. [22]

Agreeableness is the factor which is focused on interpersonal relations and the way the individuals are engaged in them, without these being qualities, but just characteristics. Tolerance, cooperation, flexibility, warmth, candor, modesty are just a few of the aspects measured by the subscales of this factor. As it is not very well measured, it does not offer very much information about the way the academic success is achieved. But the A and C factors are often mentioned in the specialized literature as being responsible for the moral education. [2, 6]

The significant contribution of the A factor in education, however lower than that of the C factor, has been explained through the positive impact of cooperation, the desire to observe the professor's indications and to remained focused on the assignment. [19] Although it is a predictor for the academic performance, this is not the case as far as academic performance is concerned, which shows that students with a higher score at this factor are more willing to work and learn in groups than individually, spending more time involved in the relation with group assistant professors and with the colleagues. [18, 13]

The women usually obtain significantly higher scores than man at this factor, the explanation being founded on the traits than characterize the former, submissiveness and expressing love. [5]

**The Openness to Experience (O)**, the most controversial and least understood factor [14], also called Intellect in older versions of the inventory, consists of aspects such as esthetical sensibility, intellectual curiosity, active imagination, independence of judgment etc. [22]

Those who obtain high scores at the O factor are curious, interested, unconventional, imaginative and willing to apply new ideas. The students with high scores are the "ideal" students, capable of successfully dealing with academic challenges. [3, 19] It has been suggested that O is the intelligence indicator, its expression and that a traditional approach on education would not be beneficial for them, especially if the requirements involve an

organized, less creative effort. [1, 8, 10] However, the openness to experience has been associated to a certain extent with the academic success [10, 11, 12], but not categorically and significantly, as the other factors have been.

Those with low scores at the O factor are conservative, conventional, with inhibited emotional reactions and restrained areas of interest, without being hostile or aggressive. [22]

The combinations between the factors are also interesting, especially those which bring together the C and O factors, namely the learning style, the behavior in relation with the academic assignment, which can be independent, correlated with the success or conformist. [11]

In our study, the Openness to Experience in combination with Neuroticism directly correlated with the individual's level of stress. The theory shows that from this combination we can have information about the coping style, the individual's capacity to adapt to problematic and tense situations throughout their life. [22]

By relying on the conclusions presented so far, by using the theoretical information, we can outline a profile of the student who easily achieves academic performance in the superior medical education field, but also of the individual who encounters difficulties.

Overall, the women obtain higher grades than men. But this does not mean that there is no performance in the men category or that there is no failure in the women's one. Still, one can wonder on the causality of this phenomenon. Below, we will answer to these questions by using the theoretical information [22-32] which we have related to the actions of the aforementioned personality factors.

The female subjects recorded higher scores at the N and A factors, from the combination of the two resulting the anger control style. The high scores for N and A outline the image described by the "shyness" label. The shy persons are hard to involve in conflicts by manifesting anger. On the one hand, their feelings are easily hurt and they often feel victimized. On the other hand, they are reluctant in expressing anger, as they do not want to hurt the others. Their anger can be directed inwards against themselves.

The men obtained low scores at the N and A factors. What the theory shows us about these individuals is that they often feel offended, but are not overwhelmed by the anger feelings. In the same time, they do not forget and have resentments, expressing their anger when and how they consider fit. Also, this type of person can look for opportunities to have revenge.

The combination of the E and C factors, the two predictors for academic performance, determines the level of psychic energy available for an individual. Low scores for E and high for C have determined the “methodical” type. These persons are organized workers, who concentrate on the current assignment and work slowly and constantly until it is finalized. They have a steady rhythm, both in work, and in leisure time. They cannot be hurried, but one can be sure they will fulfill any assignment one has given them. On the other side, high scores for E and low for C determines the “fun loving” type. These individuals are full of energy and vitality, but they find it hard to channel their energy in a constructive direction. Instead, they prefer to enjoy life through emotions, adventures and noisy parties. They are spontaneous and impulsive, ready to leave work for a chance to have a nice party.

The stress did not have a significant and direct influence on the academic performance, but, despite all, the women, who have better academic results, obtained higher scores on this scale. The level of stress correlates with higher scores for the Neuroticism (N) and Openness to Experience (O) factors and the women have higher scores than men at the N factor. Also, the level of stress is higher at the 3rd year than at the other years, although the number of examinations is lower and the average grade does not differ significantly from the others'. From all these, we can draw the conclusion that, although the stress does not significantly influence the performance, it manifests a subtler contribution in combination with the personality factors, having more of a role to increase motivation. The combination between the N and O factors, which directly correlate with stress, describes the type of coping. High on both scales are specific to persons with increased sensibility. They pay attention to possible dangers and imagine eventual misfortunes in advance. They can seem helpless to others. As they think in unusual and creative ways, they can be troubled by strange and eccentric ideas. A high score on the N scale and low on the O scale is specific to persons who are hard to adapt. These individuals tend to use less efficient defense mechanisms, such as suppression or negation etc. They prefer not think about disturbing ideas and refuse to admit a possible danger (for example, a grave illness). They do not understand the painful emotions they experience and cannot verbalize their feelings. A low score on the N scale and high on the O scale is specific to a person who adapts

easily. Such persons are aware of conflicts, stress and possible threats and use these situations to adapt creatively. They intellectually face their own problems and can react to stress as if it were a source of humor or artistic inspiration. A low score on both scales will characterize persons with decreased sensibility. Faced to stress, they rarely experience strong negative emotions and when they do, they minimize their importance. They rely on their own capacities and don't focus on threats or losses, but on concrete ways of solving problems or on ways to distract themselves from them.

## Conclusions

In conclusion, the personality factors influence the academic performance both directly, and indirectly. More important than identifying the strong and separate influence is to outline the combination of factors which function as a whole, as the individual actually does, beyond theoretical delimitations, aspect which result from considering even those factors which have a weak or indirect action. There are studies which show that the mere knowledge of one's personality profile has a positive effect on one's academic performance, thus, the preparation of medical students should include an personal optimization and development program.

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