

THE PSYCHOLOGICAL PROFILE OF THE MEDICAL STUDENT

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Abstract: Being a physician requires a serious amount of cognitive, and emotional effort. A common assumption found in many studies is that a student who is satisfied with his/her life evolution in general, should be more determined in choosing a career and in achieving academic performance, should lead a more complex social life and consequently should reach a higher level in his/her academic achievements. This thesis is to be regarded as a survey of a series of recent international research studies on the dominant traits of personality, based on the Big-Five model but not exclusively, as well as a presentation of a personality profile resulted from a quantity-quality descriptive study conducted on 254 medical students. The purpose of this thesis is to identify the personality profile directly connected with academic performance and indirectly connected with academic achievement in the educational environment of the Romanian higher education system.

INTRODUCTION

Personality plays a major role in the process of human cognition and evolution, as these two elements are directly involved in our choices in life, as well as in our plans and achievements. In the process of academic education students' performance and personality are subject for professional studies.(1,2,3,4,5)

Being a physician requires a serious amount of physical, psychological, and emotional effort, many times generating health problems; therefore a professional training materialized as a constant personal development process is indispensable.

During the process of training future physicians, knowing their personality and training them to manage and preserve their physical and psychological health is no longer optional, nor a desideratum.

As Benjamin and Hollings were stating (1) “The student's satisfaction is a very important variable – result as it appears to be in correlation with a series of variables to which professors grant a great deal of value” and which may be included in the academic performance predictors category.

A common assumption found in many studies is that a student who is satisfied with his/her life evolution in general, should be more determined in choosing a career and in achieving academic performance, should lead a more complex social life and consequently should reach a higher level in his/her academic achievements.(2)

This thesis is to be regarded as a survey of a series of recent international research studies on the dominant features of personality, based on the Big-Five model but not exclusively, as well as a presentation of a personality profile resulted from a quantity-quality descriptive study conducted on 254 medical students from the “Lucian Blaga” University of Sibiu, from the general practice, dentistry, and pharmacology departments.

Personality and the dominant elements of human personality respectively have been a major topic for many international studies.(6-22) The Big-Five model of personality

elements used in defining academic performance has been used both in the Western and in the Eastern academic environment.

In Mohsen Joshanloo (Psychology Department, Chonnam National University, Gwangju, South Korea) and Samaneh Afshari's study (23) from Department of Psychology and Educational Sciences, Allameh Tabataba'i University Iran, the main focus is on the relationship between the personality elements of the Big-Five model, the *self-esteem* and the satisfaction coming from personal life (life satisfaction), and the subjects were 235 students from the University of Teheran. Among the elements of the Big-Five model, Extraversion and Neuroticism have been identified as being the strongest predictors of the “life satisfaction” variable.

Overall, the results have shown that the Big Five personality elements expound a 25% variation for the “life satisfaction” variable numbers, where a major role in obtaining these results has been played by “Neuroticism” and “Extraversion”. The results have shown that the *self-esteem* expressed by the Iranian students represents a strong predictor of the “life satisfaction” variable, but also a strong mediation element in the influence of the Conscientiousness and Agreeableness on the “life satisfaction” variable. The female students scored higher than male students in the “Life satisfaction” dimension, therefore the conclusion for this study group was that gender may qualify the relationship between the Conscientiousness scores and the “Life satisfaction” scores. The results were analyzed based on the cultural and religious differences (the majority of the subjects of the study were Moslems) determined by the welfare and life style in Iran.

Another study conducted on Canadian students has revealed a significant influence relationship between personality elements (agreeableness, conscientiousness, neuroticism) and emotions (anxiety, anger, boredom, pride) on the accommodation with the academic environment using *MetaTutor learning environment*.(5) The results indicate the fact that in order to achieve higher academic performance students must develop a high level of conscientiousness and

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agreeableness along with an emotional display of educators based on adaptive emotions (joy, trust, pride) and with avoiding non-adaptive emotions (boredom, anger).

Personality elements together with our daily mood can have a significant influence on our professional performance and consequently on the academic performance. In the study of Nai Wen Chi, Huo Tsan Chang and Hsien- Lier Huang (24) study the results have shown that besides conscientiousness and agreeableness, a daily positive mood plays a major role in achieving professional performance (daily positive mood).

Another study conducted in China on 1,738 medical students indicated the fact that *self-esteem* is a major mediator in the relationship between amenity, openness, neuroticism, and depressive symptoms.(25)

The instruments used for this study were: *Big Five Inventory*; *the Center for Epidemiologic Studies Depression Scale* (CES-D); *Rosenberg' Self Esteem Scale* (RSES). Positively significant connections were identified between a high level of neuroticism and the level of depression of the Chinese medical students. Elements such as extraversion, amenity, conscientiousness, and openness correlate with depression symptoms in a negative manner, while neuroticism strongly correlates with the level of depression. The authors used the model of multiple regression in order to explain the impact of the independent variables on the depression symptoms (the dependent variable); age and gender of the students were considered when conducting the study.

The analysis revealed the fact that 70.08% of the Chinese medical students presented depression symptoms. While processing the data, the school year and the number of semesters the students had passed have not been taken into consideration. This study also suggests the creation of intervention strategies for medical students who might experience depression, depending on the level of the personality elements mentioned above.

In a study having as subjects a group of medical students, Crumpei I, Dafinoiu I. 2012 (26), identified a higher level of secondary traumatic stress and, at the same time, they recorded some variations in the level of the traumatic stress in terms of each student's motivation in choosing this type of career; these students are training for a career carrying a huge pressure, where exhaustion, fatigue should accumulate in the absence of a thorough risk prevention program.

John Lounsbury, Richard Saudargas, Lucy Gibson and Frederick Leong from the University of Tennessee, USA have conducted a study (3) on 532 students on the relationship between the academic experience (academic satisfaction) as an indicator of life satisfaction in general, and the Big Five elements, where the emphasis was laid on emotional stability, amenity, and conscientiousness. The results indicated that the numbers for the "*Life satisfaction*" variable correlate positively with the numbers for the academic satisfaction ("*College Satisfaction*"), the sense of identity ("*Sense of Identity*"), the career orientation/decision ("*Career Decidedness*"), students' optimism ("*Optimism*"), the work orientation ("*Work Drive*"), and the student's self-education drive ("*Self-Directed Learned*") variables.

PURPOSE

The purpose of this thesis is to identify the personality profile directly connected with academic performance and indirectly connected with academic achievement in the educational environment of the Romanian higher education system for the medical students of "Lucian Blaga" University of Sibiu.

In this study we analyzed the relationship between the

dimensions of personality (the Big Five model) and the academic performance of the medical students, as well as to identify possible predictors of academic performance in terms of these predictors' development level, depending on gender and university year.

Hypothesis

1. We are assuming that there are significant differences between the male and the female students considering the level of conscientiousness expressed by the studied group;
2. We are assuming that there are significant differences between the male and the female students considering the level of Agreeableness displayed by the studied group;
3. We are assuming that the lower level of neuroticism expressed by the subjects, the higher their academic performance should be;
4. We are assuming that agreeableness and conscientiousness are relevant predictors for the academic performance.

MATERIALS AND METHODS

In investigating the personality parameters we have used the NEOPI-R personality inventory and the semi-structured interview technique. The results were correlated with certain dimensions of the JVIS career interest inventory and the academic performance achieved by students who had been subjects for study in different sessions.

For the evaluation of personality features we have used: NEO Psychological Inventory Revised, NEO PI-R – one of the most "trendy" personality questionnaires used in modern psychology, structured on five scales Neuroticism (N), Extraversion (E), Opening (O), Agreeableness (A), Conscientiousness (C); JVIS (Jackson Vocational Interest Survey) is a measurement instrument for vocational interests, designed to assess the vocational interests of both male and female individuals using a common set of dimensions; the questionnaire is a useful technique in the process of vocational counseling and in taking vocational decisions; the questionnaire is structured on 34 scales containing 17 items each.

Academic performance was rendered operational by calculating the average score of each student throughout the entire period of study in the university.

The group study is composed of 254 students who accepted in writing to be part of the survey and who are studying to become general practitioners, 2nd, 3rd, 4th, and 5th year, 205 female subjects and 49 male subjects aged between 20 and 35.

For the testing of the research assumptions we have used several statistical methods processed in SPSS 23. For hypothesis no. 1 and no. 2 we used the variance analysis technique. For hypothesis no.3 the method of correlation was used, the Pearson bi-variance correlation factor respectively. In testing hypothesis no. 4 we have used the multiple regression technique.

A number of 205 female subjects and 49 male subjects have been assessed.

RESULTS

Table no. 1. Levene's test of equality of error variance

Dependent Variable: Conscientiousness

F	df1	df2	Sig.
.170	1	252	.680

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

CLINICAL ASPECTS

As shown in table no. 1, the Levene test came out irrelevant, a result which allows us to continue the quasi-experimental analysis of the statistics regarding the testing of the relationship between the “gender” variable and the “conscientiousness” variable.

Observing table no. 2, we find that hypothesis no.1 invalidates; consequently we cannot assert that there are significant differences in terms of gender as for the level of conscientiousness expressed by the study group.

In table no. 2 we have a non-significant Fisher coefficient ($F = 2,105$; sig. 0.148; $\eta^2 = 0.008$) and a very weak effect.

Consequently, there is no certainty that the female subjects from the studied group do not express a higher level than the male subjects, although the percentage of female subjects is far higher than the male percentage (approx. 82%).

Table no. 2. The relationship between “gender” and “conscientiousness” in quasi-experimental analysis

Tests of Between-Subjects Effects

Dependent Variable: NEOPIR Conscientiousness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	784.317 ^a	1	784.317	2.105	.148	.008
Intercept	2350632.254	1	2350632.254	6308.710	.000	.962
Gender	784.317	1	784.317	2.105	.148	.008
Error	93895.478	252	372.601			
Total	3954192.000	254				
Corrected Total	94679.795	253				

a. R Squared = .008 (Adjusted R Squared = .004)

Table no. 3. The average scores for “agreeableness” depending on the gender

Descriptive Statistics

Dependent Variable: NEOPIR Agreeableness

Gender	Mean	Std. Deviation	N
Female	114.46	16.482	205
Male	108.22	15.555	49
Total	113.26	16.463	254

As table 3 shows, the female subjects have a higher score in “agreeableness” (114.46) compared to the male subjects of the study (108.22). In table 4 the results for the Levene test are insignificant, therefore we should be able to analyze the data under quasi-experimental conditions.

Analyzing table 5, one can notice the fact that hypothesis no.2 is confirmed, therefore we can assert that there are significant differences between the female subjects and the male subjects of the study group in terms of the level of the agreeableness expressed ($F = 5.787$; sig. 0.017; $\eta^2 = 0.02$); although the relationship is significant, the value of the effect expressed through the eta coefficient is a weak one.

Table no. 4. Levene’s Test of Equality of Error Variances^a

Dependent Variable: NEOPIR Agreeableness

F	df1	df2	Sig.
1.007	1	252	.317

Table no. 5. Tests of Between-Subjects Effects Dependent Variable: NEOPIR Agreeableness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1539.344 ^a	1	1539.344	5.787	.017	.022
Intercept	1961143.990	1	1961143.990	7372.776	.000	.967
Gender	1539.344	1	1539.344	5.787	.017	.022
Error	67031.506	252	265.998			
Total	3326830.000	254				
Corrected Total	68570.850	253				

a. R Squared = .022 (Adjusted R Squared = .019)

As far as hypothesis no.3 is concerned, it is not being confirmed; although we have obtained a negative bi-variant correlation which allows us to identify a reversed relationship, this is not significant statistically speaking (Pearson = 0.104; sig. 0.117).

Hypothesis no.4 is confirmed. Both personality factors, agreeableness and conscientiousness, function as significant predictors for academic performance.

Table no. 6. ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.664	2	2.832	5.887	.003 ^a
Residual	108.708	226	.481		
Total	114.372	228			

a. Predictors: (Constant), NEOPIR Conscientiousness, NEOPIR Agreeableness

Table no. 7. Regression Coefficients

Model		Non-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.308	.371		19.694	.000
	NEOPIR Agreeableness	.007	.003	.178	2.561	.011
	NEOPIR Conscientiousness	.003	.003	.085	1.224	.022

a. Dependent Variable: Average score for the previous year

DISCUSSIONS

Being a physician in a large hospital implies an impressive amount of intellectual work, emotional work (especially through *deep-acting*) and physical work.(27)

From the four hypothesis of the study, the results of table 6 and table 7 indicates that hypothesis no. 1, no. 2 and no. 4 were confirmed. Thus, we can assert that for more than 95% of the subjects, basic personality features such as “agreeableness” or “conscientiousness” represent significant predictors for the academic performance materialized today in the shape of exam scores and, subsequently, for the post-graduation professional performance.

Although neuroticism correlates negatively with agreeableness ($r = -.226^{**}$; sig. 0.00), this level of co-variation is low and, in addition, we cannot assert that there is significantly negative correlation between academic performance and students’ level of neuroticism, as a large number of those expressing a high level of neuroticism achieved a satisfactory academic performance.

Also, for this group of medical students, neuroticism correlates negatively with conscientiousness at medium level of co-variation ($r = -.559^{**}$; sig. 0.00). Neuroticism correlates negatively with academic performance ($r = -.104$; sig. 0.117);

hypothesis no 3 is not confirmed in wish we are assuming that the lower level of neuroticism expressed by the subjects, the higher academic performance of the students should be.

CONCLUSIONS

Personality plays a major role in the process of academic performance for medical students.

Consequently, the following theories arise: which are and if we are able to identify the general predictors of neuroticism in a population of medical students? Is it a different form of neuroticism, characterized by a specific series of symptoms (resembling occupational stress) in the case of medical students? Could this theory be about an "emotional training" specific to being a physician where emotional control materialized as emotional effort, emotional dissonance (the ability to display other moods and emotions than the ones felt) have a significant role in the process of creating a physician's professional conduct?

Finally, we have a new psychological profile of the medical student: pleasant but also restless, incessantly preoccupied with his/her personal performance in relation to himself/herself and with his/her professional performance in relation to others.

Most of the students in this study asserted a high sense of responsibility (measured with JVIS scales) in their professional activity; nevertheless, this topic remains an open field for many analysis until the moment of the student's confrontation with the responsibilities of being a physician in the years immediately following graduation.

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