Research Article

Investigate The Relationship Between Personality Types and The PhD Students' Fields of Study

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Abstract

Introduction: Recent years have witnessed major changes in the way students are admitted to different levels of education in the world. In many prestigious medical colleges, students' admission is based on personality traits along with their academic abilities, and on the other hand, the suitability of the participants' personality traits with their future professional goals and organizational responsibilities is also considered a requirement of the universities' admission. This study was conducted to investigate the relationship between personality types and the PhD students' fields of study.

Methods: In this descriptive study, 200 undergraduate residents of Mazandaran University of Medical Sciences were selected through gathering descriptive information such as age, sex, marital status, accepted assistantship major, degree of interest, parental education level and personality type information using the modified Eysenck Personality Questionnaire (EPQ-RS). Data were analyzed using SPSS 22 software.

Results: The correlation coefficients results showed that there was a significant relationship between personality types of students with specialty undergraduate students and the major they were admitted for medical specialty education (r = 0.19). In addition, there was a significant and positive relationship between the students' interest and the major they were admitted for specialization (r = 0.35).

Conclusion: Considering the increasing personality type of anxiety among students with special needs in terms of occupational stressors that threaten mental health, the results of this study expressed it necessary for counseling centers in universities to be more dynamic with early diagnosis and treatment and help improve the assistants' mental health.

Keywords: Personality Type, Major, Medical Specialty, Eysenck Personality Theory

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Introduction:

Choosing a major in any level is one of the most important decisions a person has to make in his or her life. By choosing a major, one has to spend a lot of time and money on education. On the other hand, studies have shown that after graduation it is usually rare and expensive and time consuming to change disciplines, so choosing a major at all levels of study should be done more carefully and thoughtfully (1). Among these, medical disciplines major selection, including those related to human health, should be more carefully conducted since interest in the medical profession is one of the prerequisites for providing quality services to patients. The most important factors that influence the choice of physician's specialty in previous studies in the country can include interest in helping people, scientific content of specialties, diversity in diagnosis and treatment, availability of research, Lack of stress, persuasion of other students / assistants, appropriate earnings, prestige, and the course they are studying in (2). Other factors that appear to have a significant impact on different individuals' major selection are personality traits from different perspectives, one of which is Eysenck. According to Eysenck, individual differences are related to the activity of two neural axes, the cortical-visceral and the visceral-cortex loops. These personality traits also have underlying neurological neurocognitive links that have been addressed in many studies. Such a loop exhibits less activity in extroverted individuals compared to introverts (3).

Since the low level of cortical arousal is mentally pleasing, then it can be inferred that the extroversion attribute is associated with positive emotion. In the Eysenck personality model, the visceral-subcortical loop controls the automatic subjective emotional responses. Eysenck's three personality dimensions are extroversion versus introversion (E) neuroticism versus emotional stability (N) and psychoticism versus impulsive control (P) (4). In addition to the given categories, it is worth noting that in recent years, there have been major changes in the way students are accepted at various levels in the world. It is now widely accepted that admission to medical schools at different levels should not be based solely on scientific criteria, and in many prestigious medical schools, students' acceptance is based on personality traits along with their academic abilities. Meanwhile, the suitability of the traits and participants' personality traits for their professional and organizational responsibilities are also considered as the requirements for entry into the field (5-6).

In a study conducted by Mullola et al. (7), examining personality traits and career choices among practitioners in Finland: employment, patient contact, expertise and change of expertise, it was concluded that private sector practitioners had the most openness and agreement, and have been receptive than the public sector physicians. Surgeons and internal

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physicians reported higher conscientiousness and meticulousness. Psychiatrists and pediatricians showed the most extraversion. Women were higher in conscience and neuroticism than men, but men were more preeminence in openness.

In a cross-sectional study among physicians residing in Oman, Al-Allawi et al. (8) examined the effect of Eysenck's personality traits on the selection of expertise by young Omani physicians using the revised Eysenck Questionnaire. They concluded that surgical specialties among all the respondents had significantly higher scores on the psychotic scale. Orthopedic major students also had a higher mean score in psychoticism and psychiatrists and radiologists scored lower on these scales.

Leidon et al.'s (10) study aiming at examining the impact of personality on the chosen field of specialization showed that there was no personality difference between physicians working in different specialties. Those who were person-focused specialties had significantly higher scores on extraversion ($p < 0.001$) and conscience ($p = 0.001$), and lower scores on neuroticism ($p = 0.01$). In another study, Mahmood et al. (11) found that surgery was the most popular field of specialization among men and women, and men's scores were significantly higher on the scales of impulsivity, neuroticism, aggression, hostility, and sociability. Also, in their study, which investigated the relationship between personality type and medical students' interest in pursuing specialty training, Hojat et al. (12) reported that students interested in surgical specialties had significantly higher scores on impulsivity scale and lower scores on the Anxiety-Neuroticism scale, accordingly Concerning the sociability scale, students interested in hospital-based specialties scored lower and those who were interested in primary care related fields scored higher on this scale. The results also showed that, in general men, had higher scores on impulsive emotion scale and women had higher scores on anxiety-psychoticism scale. All of these studies included other variables besides personality dimensions, and few studies directly examined the relationship between personality types and field of study, many of which were generally conducted regardless of age and gender.

Considering the fact that very few studies have been conducted on the relationship of personality types with the accepted discipline in the specialized field in the country, and given that the general understanding of the factors influencing discipline selection and related factors, on the one hand, can assist students in choosing a course of study tailored to their individual characteristics, and on the other hand, it can help relevant authorities determine appropriate strategies for making the desired changes, therefore, since personality traits are an important factor that affects not only the quality of life but also the quality of job performance, and because no study has been

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conducted in Mazandaran University of Medical Sciences in this regard, the current study is designed to examine the relationship between personality types and the field of study of the accepted medical major students.

Methods:

This study was descriptively conducted. The statistical population of the study comprised 260 assistants in different fields at Mazandaran University of Medical Sciences in 2018. The failure to comply with the criteria of honesty, accountability, and distortion of some of the questionnaires, as well as the unavailability of some assistants, a total of 60 questionnaires were eliminated and were not completed, and finally 200 people who wanted to participate in the study were examined. The ethical considerations of this study was approved by the Ethics and Research Committee of Mazandaran University of Medical Sciences under review number of IR.MAZUMS.IMAMHOSPITAL.REC.1397. 4993. In order to execute the data gathering, the general information on age, sex, marital status, admitted assistantship major, interest and parental education level and personality type information were collected using the revised Eysenck Personality Questionnaire (EPQ-RS). The questionnaire was collected by a senior clinical psychologist and then finalized by a psychiatrist. Regarding the revised Eysenck Personality Questionnaire (EPQ-RS), it is a 57-question (yes-no) self-test questionnaire with a validity of 0.84 - 0.94 and reliability of 0.74 – 0.91. It was used to measure the three dimensions of extroversion personality versus introversion (E) neuroticism versus emotional stability (N) and psychoticism versus impulsive control (P). Each of the three is made up of 12 components. Each person receives one to 12 points on each of the subscales of the questionnaire.

The questionnaire also has a false-measure scale that measures tendency to perform well and includes the following 12 items, a series of questions that are positively or negatively modified to determine whether the respondents responded to the test accurately or inaccurately. Various external studies have reported acceptable reliability coefficients of this questionnaire. The reliability and validity of this test were evaluated by Bakhshipour and Bagherian on the Iranian population in 2006 (8). Their research results showed that the Persian version of the EPQ-RS subscale is highly correlated with its complete form and their four-factor structure has the best structural goodness of fit. Also, in Asgari et al.'s study in 2011, the reliability obtained for "P", "E" and "N" scales were 0.67, 0.89 and 0.90, respectively, and the Cronbach's alpha coefficient for the respective scales of "E", "N" and "P" scales were 0.77, 0.74 and 0.52 (13). Data were analyzed using SPSS software version 22. Data were analyzed using t-test and Pearson correlation coefficient.

Findings:

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The results showed that among the 200 residents under study, 111 were men (.55.5) and 89 were women (.44.5). The average age of 162 participants was in the range of 25-40 (0.81) and 38 were in the age range of 31-55 years (0.19). 133 (66.5%) participants out of 200 were single residents. Among the residents of Mazandaran University of Medical Sciences, the number of admitted assistants in different fields was as follows: 4.5% in orthopedic, 10.5% in anesthesia, 3% in sports medicine, 6% in emergency, 4% in neurosurgery, 7% in cardiovascular, 7% in radiology, 5.5% in pathology, 7% in pediatric, 8% in neurology, 8.5% in psychiatry, 8% in family physician, 10.5% in internal medicine, 4.5% in infectious and 6% in women fields. Therefore, the majority of the subjects under study in this research were in anesthesia and internal medicine fields (21 subjects, 10.5%). The participants' filed of interest in the study were 8% in orthopedic, 6% in anesthesia, 1% in sports medicine, 3% in emergency, 4% in neurosurgery, 14.5% in cardiovascular, 3.5% in cardiology, 4.5% in radiology, 7% in pathology,1.5% in pediatrics, 2.5% in neurology, 13% in psychiatry, 4% in ophthalmology, 0.5% in pharmacy, 4% in surgical ward, 10.5% internal, 4.5% in dermatology, 4% in infectious and 6% in women field. Therefore, the most interesting course of the majority of the subjects studied in this study was cardiovascular field (29 individuals, 14.5%).

Table 1. Frequency distribution table for gender, age and marital status

	Frequency	Percentage	P
Gender			
Male	111	55.5	0.498
Female	89	44.5	
Age			
25-40	162	81	0.393
41-55	38	19	
Marital status			
Single	67	33.5	0.047
Married	133	66.5	
Total	200	100	

The highest frequency of psychoticism was observed in the neurosurgical group with 5 patients (5.88%). And the highest neurosis mild mental disorders (indicating tendency to anxiety and negative emotions such as fear and / or anger) was also observed in 112 patients (97.39%) in the non-surgical group. The majority of the subjects in this study were L

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(lying) (16.67%) and pathology 2 (18.18%). The highest introversion was observed in non-surgical subjects (105 (91.30%)) and the highest extraversion (referring to social, active and positive feelings) was observed in 18 (21.18%) surgical group. Also, 83 (97.65%) were in the L group (honesty) in the surgical group and 6 percent (5.22%) were in the L scale (non-responsiveness) (Table 2).

Table 2. Personality type of the study subjects

Variables	Neuroticism				
	extroversion	introversion	Neurotic (Neurosis)	Psychotic (Psychosis)	Total
Non-surgical	(%8.70)10	105 (%91.30)	112 (%97.39)	(%2.61)3	115
surgical	18(%21.18)	67 (%78.82)	80 (%94.12)	(%5.88)5	85

The results showed that there was a significant relationship between personality types of undergraduate and postgraduate students with their accepted field of study in medical specialty. So, the value of this correlation is 0.198. The calculation of the coefficient of determination ($r^2 = 0.0392$) shows that 6.97% of the accepted students in majors by personality types is predictable (Table 3).

Table 3. The correlation analysis of personality traits of specialized assistant students with accepted majors

Variables	**Personality types**	
	Statistical index	Calculated values
Students in admitted majors	N	200
	R	0.198
	P	0.005

The results of data analysis showed that there was a relationship between interest in the specialty and the major the students were accepted for specialization (Table 4).

Table 4. the correlation analysis of the relationship between interest in the field of study and the field of study the students were accepted for specialization

Variables	Technical field	
	Statistical index	Calculated values
Students in admitted majors	N	200
	r	0.345
	P	0.000

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Discussion:

Personality as a determining factor can affect all human behaviors in personal and social life and sometimes cause problems for the individual and those around him due to maladaptive traits and characteristics. Personality factors are among the most important traits that serve as important factors to focus our attention on. The purpose of this study was to investigate the relationship between personality types and the field of study in medical specialties. The study showed that 8 people were emotionally unstable and psychotic, and 192 were inflicted with neurosis. It should be noted that this questionnaire is not a clinical diagnosis of psychosis and neurosis and actually measures the existence of the traits traces. 28 subjects (14%) were extroverted and 172 were introverted (86%). The findings were consistent with some of the previous findings (11,10,8,7).

In the Mullola study, surgeons and internal medicine physicians reported higher conscientiousness and meticulousness. While psychiatrists and pediatricians showed the most extroversion, women were more conscientious and psychotic than men, but men were more privileged in openness. This study is in line with the present study in terms of variables of conscientiousness and extroversion.

In the Al-Allawi et al.' study (8) among the doctors in Oman who performed the revised Eysenck's questionnaire, it was shown that surgeons in the surgical specialties also scored significantly higher on the psychiatric scale, and the orthopedic majors scored statistically higher on psychosis, and the psychiatrists and radiologists scored lower on the scale. This is consistent with the above study on the scale of psychosis between the fields of psychiatry and radiology.

In Leidon's study (10) among students in basic medical education, those interested in person-focused specialties had significantly higher scores on extroversion ($p < 0.001$) and conscientiousness ($p = 0.001$) and reported lower scores on neuroticism ($p = 0.01$). In Mahud's study, the findings showed that surgery was the most popular field of specialization among men and women, and men's scores were significantly higher on the scales of impulsivity, neuroticism, aggression, hostility, and sociability. The variable of interest was in line with the present study. The Medical Assistant course is an important period experienced by a group of physicians in their professional lives, requiring a high level of mental health investment throughout the world. Residents have to cope with high responsibility, overwork, sleep deprivation, physical exhaustion, and low salaries (17).

At this time, assistants should plan for the best of their time so that they have sufficient technical knowledge and skill to work at higher

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levels and develop empathy and compassion towards patients. Residents often find themselves in situations where quick decisions that are judged carefully are required. During the assistantship, there are frequent situations of exposure to death that can be an important cause of anxiety and low self-esteem (18).

In general, long working hours per week and high volume of professional information - interactions in family and work life - overwhelming emergency situations and limited control over the work have put medical assistants at high risk for sleep problems (19). Medical students are vulnerable to insomnia. Importantly, medical students do not pay much attention to the behavioral and cognitive functions that put their mental health at a disadvantage despite the deleterious effects of sleep disorders (20).

It is therefore likely that due to the sensitivity of medical assistants' work conditions and high levels of anxiety, burnout, and sleep problems, many of them fall into the neurosis group. Some of the limitations of the study included the limited number of residents and the lack of accountability and accurate response of some subjects. The use and selection of this questionnaire was due to the workload and a comprehensive questionnaire can be conducted at various universities across the country.

Further Suggestions:

conducting extensive research and assessment of variables such as economic status, history of delinquency, and hospitalization due to mental disorders of residents and their families can be a step towards helping to improve community mental health. University officials can also help these assistants by treating them during their studies or directing them to pursue other fields of study. University managers can also use new approaches to reduce assistants' stress and anxiety.

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