

## Relation Between Personality Traits and Academic Performance Among University Students of RAKMHSU, UAE-Using a Big Five Model

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<https://dx.doi.org/10.13005/bpj/2309>

(Received: 08 September 2021; accepted: 08 December 2021)

Students from diverse health care professions, their personality traits have a positive influence on their academic performance. This is viewed as an indicator of collaborative education and practice for efficient patient care. The health-care professional sciences graduates who join health sciences program should be highly motivated and determined to perform academically well to accomplish their goals. The personality trait assessment gives a holistic approach to know how efficiently students use their cognitive, psychomotor and affective domains for learning which improves patient-doctor relations and ultimately results in patient satisfaction. The objective of the study was to assess the preferred personality trait and to know its relation to their academic performance. The study design adopted was a prospective, cross sectional using a stratified randomized sampling. First year students enrolled for medical, dental, nursing and pharmacy programs at RAKMHSU were included in the study. The Big five model questionnaire was administered to study participants during their self-study hours and data collected were analyzed in SPSS version 18. The most common personality trait was openness 43% followed by agreeable 21%. The analysis of their GPA (Grade point average) found that agreeableness had high GPA and Neuroticism had the lowest GPA among all traits. The study also found that high unsuccessful students were seen with Neuroticism (31.5%), Extraversion (26.3%) followed by other traits. Conscientiousness also had positive and significant correlation with AP ( $p < 0.001$ ) along with agreeableness. In conclusion, each student is unique, and their personality trait can be used as an aptitude test tool during their admission process for health care professions related courses.

**Keywords:** Academic Performance; Affective Domains; Cognitive; Health Care Professions, Personality Trait; Motivation; Psychomotor.

Health care professional students should have the attributes of being trustworthy, responsible, committed to learning, good communication skills, empathy, good interpersonal relations, and willing to work collaboratively as a team. The students who are motivated should be admitted in the health

sciences professional courses to achieve the high ethical standards of patient- physician relations for providing optimum health care resulting in patient safety and in the process healthy a community. To determine such candidates in medical education program admission plays a pivotal role and

selection of students using personality traits gives an edge.

A personality trait is as an attribute of a person, on how they think, feel and react to an issue on a regular basis. Health care professional education should have in their curricula to train medical students the professional code of conduct like empathy, compassion, cooperativeness, honesty, and self-control all belong to affective domain of blooms taxonomy. In the present scenarios, high assessment scores depict the academic achievement. Personality traits have an important role in their academic achievement. A combination of these traits is essential for health care students to interact with their patients during practicing their profession.<sup>1, 4, 5, 6, 7</sup>

Health care professions education should have an aptitude test as admission policy to select students with right cognitive and affective abilities to pursue their professional journey which involves high stakes on emotional and economic costs.<sup>8</sup>

The various researchers used different approaches to measure the personality trait and one of such is the big five-factor model (defined by the five broad dimensions of Extraversion vs. Introversion, Agreeableness vs. Antagonism, Conscientiousness vs. Irresponsibility, Neuroticism vs. Emotional Stability, and Openness to New Experience vs. Closed-mindedness) is increasingly gaining acceptance for assessing personality.<sup>9</sup>

In an educational context, numerous studies explored the relation between the Big Five personality factors and academic performance (AP). Conscientiousness is mostly identified as a strong predictor of AP. Most scholars believe neuroticism to have a negative impact on AP.<sup>4</sup>

Literature reports students with extraversion traits are positive with high levels of enthusiasm and inclination to learn. This attribute explains the good performance in exams. The other side of the spectrum, as they are very sociable and extrovert may prefer to participate in extracurricular activities which would compromise their study.<sup>10</sup> This explains the association between extraversion and exam success a more complex process.

Agreeableness had predictive validity for AP. This suggests that students who are cooperative and trusting are more likely to learn by collaborative tasks like community-based field

and in class group assignments. Openness is often associated with scholarly creative performance and facilitate the use of innovative learning strategies which affects academic success.

Conscientiousness personality trait was reported in the literature often associated with academic performance in school, undergraduate and postgraduate education.<sup>11, 12, 13, 14, 15</sup>

Biochemically, low levels of serotonin have been linked to anxiety, depression, aggression and poor impulse control that are treated with drugs increasing the function of serotonin thus making it possible to expect that it should be positively associated with agreeableness, conscientiousness and negatively to neuroticism.<sup>16</sup> Whereas, openness and extraversion form which has been linked to dopamine.

The aim was to study the relationship between personality traits of undergraduate medical and allied sciences students at RAKMHSU and their academic achievement.

#### **The objectives of this study was**

- To assess the preferred personality trait
- To assess the relationship between personality trait and academic performance.

Based on these facts the study used the Big five model which allowed us to investigate which personality trait is typically seen in health care students and its impact on their academic performance.

## **MATERIALS AND METHODS**

The study design adopted was a prospective, cross sectional using a-stratified randomized sampling. First year students enrolled for medical, dental, nursing and pharmacy programs at RAKMHSU were included in the study. The Big five model questionnaire was administered to ask study participants during their self-study hours and data collected were analyzed in SPSS version 18.

Sample size calculation was performed using the Raosoft sample size calculator. With total population size of 300 indicating a sample size of 169 at a 95% confidence level and 5% margin of error.

Presuming some dropouts 1-2% excess 5 students were enrolled, however there were no dropouts hence the sample size was 174.

Using stratified random sampling technique 174 RAKMHSU health care students were selected from the four constituent health sciences colleges. Each college was represented with 44 students involving both genders. This study has the confidence level of 95% and margin of error 5% power of study was 80%.

Ethical approval was received from the Institutional research and ethics committee of the RAKMHSU. Written consent was obtained from the students decided to participate. They were assured that the data would be treated with confidentiality and anonymity. The investigators approached the study participants during their Self-study hours with prior permissions, administered the big five model questionnaire having 44 items along with demographic details. The items ask study participants to indicate their level of agreement on a 5-point Likert scale. Score 1 being Strongly agree and 5 Strongly disagree. The filled questionnaire collected and data was analyzed comparing the mean of personality traits and GPA (Grade point average) of the study participants using Pearson's correlation factor at a p value < 0.05 in SPSS 18 software.

## RESULTS

A total of 174 students were included in the study with 106 female and 68 male students. The most common personality trait found in our study was Openness (43%) followed by Agreeable (21%) as shown in the diagram 1.

The study also noted that in terms of grade point average (GPA), the traits with agreeable and Conscientiousness had higher GPA of 3.15 and 3.09 respectively as shown in Diagram 2. Statistically these two showed the high significance as shown in table 1.

The study also noted that the personality traits of Neuroticism (31.50%), Extraversion (26.3%) and conscientiousness (24%) has higher failure rate in exams when compare to other traits as shown in the diagram 3.

## DISCUSSION

Our study found that prevalent personality trait at among students of RAKMHSU was "openness trait". The characteristics of these students are, being creative, Imaginative, have excellent ideas and quick to understand things. These characters are essential for health care professionals to make them critical thinkers and problem solvers.

Openness has been positively associated with final grades and the characteristics of these students were, being creative, imaginative, have excellent ideas, quick to understand things and spend time reflecting on things

The creative and imaginative nature of open individuals may sometimes be a disadvantage in academic settings, particularly when individuals are required to reproduce curricular content rather than produce analytical or problem solving.



**Diagram 1.** Prevalence of personality traits in study with subjects

This also supported by study which showed that openness to experience has been found to be significantly correlated with academic achievement.<sup>17,26</sup>

This study also showed a significant difference between academic performance and personality.

In our study we found that agreeableness is identified as a strong predictor of academic performance (AP) followed by Conscientiousness in RAKMHSU. The characteristics of these students were, good natured, co-operative, trusting, and likely to learn by group activities. These attributes are essential for the students to work in teams and develop good communication skills and interpersonal relations which facilitate collaborative work useful for collaborative practice.

Conscientiousness also had positive and significant correlation with AP ( $p < 0.001$ ) along with agreeableness. It was in accordance with study which stated that conscientiousness is a significant predictor of success in medical schools<sup>22,23</sup> and apart from conscientiousness, agreeableness also had been associated with students' grades.<sup>24</sup>

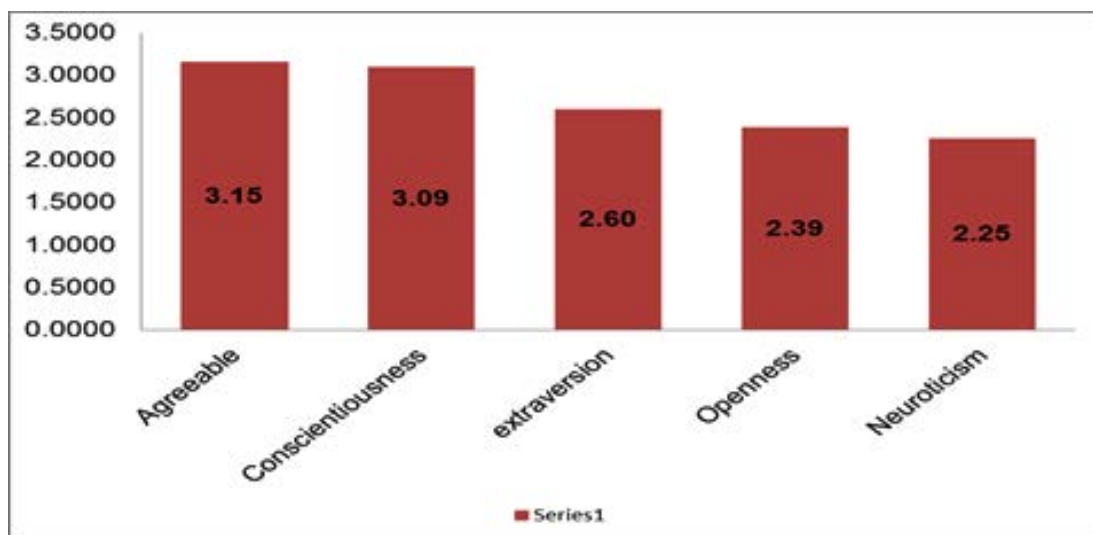
The current research findings are consistent with the various research studies that showed academic achievement has significant and positive correlation with agreeableness, and conscientiousness and negative correlation with Neuroticism.<sup>17,18,19</sup>

However, the pattern of personality will be unique to each student with respect to their courses, type of curriculum and assessment methods.

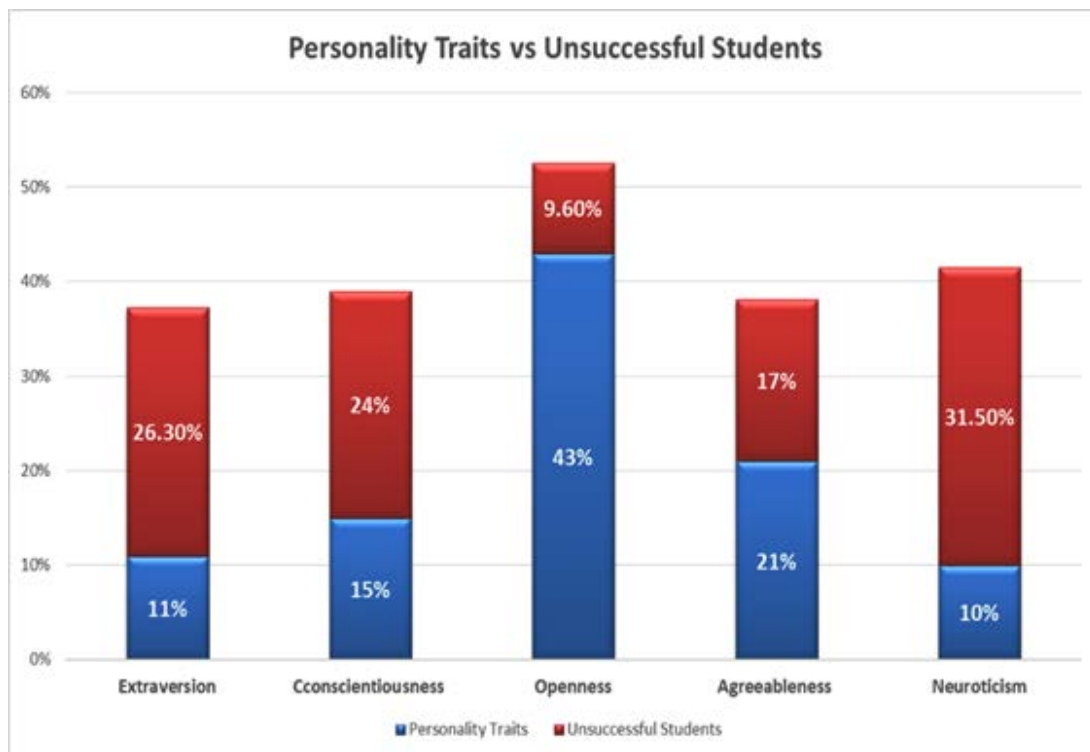
The studies have shown that higher scores of agreeableness and extraversion might be beneficial for doctors in the future practice.<sup>20, 21</sup>

**Table 1.** Mean values of personality traits score and GPA with significance

S. No	Personality	Mean Personality score	Mean GPA	Significance Level
1	Agreeableness	32.79	3.15	<0.001
2	Conscientiousness	33.96	3.09	<0.01
3	Extraversion	33.1	2.61	0.55
4	Openness	35.79	2.39	0.42
5	Neuroticism	33.75	2.25	<0.01



**Diagram 2.** Correlation of personality trait and GPA



**Diagram 3.** Showing the details of personality traits in unsuccessful as students

The study noted that extraversion has weak positive correlation associated with final grades and the characteristics of these students are, assertive, outgoing, talkative, open, reflects positive affect, enthusiasm, and motivational surplus.

This was in contrary to study showed that individuals with high score in extraversion enjoy being with people, energetic, and often experience positive emotions as well as tend to be enthusiastic and action-oriented.<sup>2,25</sup> These traits are considered as desirable traits of health care professionals who enjoy their careers and will be able to deliver the highest standard of patient care resulting in healthier communities.

This advantage may improve performance in exams; on the other hand, as they are very sociable and seek excitement, extravert students may prefer more to participate in non-academic activities rather to academic.

Neuroticism has negative significant correlation with academic performance due to emotional instability anxiety, stressed out,

depressed, moody and impulsiveness. It was in accordance with study by Premuzic and Furnham (2003) found a negative correlation between neuroticism and academic achievement.<sup>27</sup> These traits tend to procrastinate things like studies and becomes stressful because they cannot complete their tasks.

## CONCLUSION

The present study revealed the relationship between personality traits of undergraduate medical and allied sciences students with academic performance in a specific learning environment. The assessment of personality has been recognized as an important aspect in the selection of individuals both for undergraduate and postgraduate training programs. Cognitive (e.g. intellectual abilities) as well as non-cognitive (e.g. personality) factors contribute to academic and professional performances. Personality traits with low performers can be used as a guide to motivate them and provide academic support. These results will be contributing to the existing literature.

### Recommendations

These scores can significantly assess the motivational level, communication skills and interpersonal relations as also predict final scores in each year of health sciences profession. These tests can be used as an:

- Aptitude test at the time of admission,
- Check on the rate of dropouts,
- Student counselling and guidance.

### Limitations and Future Research

Results should be generalized with caution. Further, concerning the small population of the study and sampling of the participants, only those students willing to take part in the study, which affect the diversity of the sample, thus limiting the ecological validity of the study. Segregation of the study participants into college wise was not done. Hence with larger sample size and preferably all the RAKMHSU student population need to participate in the study for better correlation with the present study findings.

### ACKNOWLEDGMENTS

The authors would like to sincerely thank all the students of first year medical, dental, nursing and pharmacy programs of RAK College of Medical and Health Sciences (RAKMHSU), for their cooperation and support throughout the study. We are thankful to Prof. Kannan, Former Dean of RAKCOMS for his continuous support and motivation for conducting this study. We are also thankful to Mrs. Sheela Haridas M.Sc., for her assistance in conducting of this study.

### Conflict of Interest

Authors have declared no conflict of interest in this work exists.

### Funding source

No funding was received to support this research.

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