

PERSONALITY TRAITS AND ACADEMIC PERFORMANCE OF DENTAL STUDENTS AND INTERNS IN RIYADH, SAUDI ARABIA

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Abstract

Aim: to investigate the possible correlation between personality traits and higher grade point average GPA among dental students at a Saudi dental college. **Materials and methods:** Dental students and interns at College of Dentistry, "King Saud Bin Abdulaziz" University for Health Sciences were asked to participate in the study. Method of assessment: an online 50-question Five Factor Model Test conducted by a specialized company in the field of human resources (www.truity.com), performed using I-Pad devices. The GPA was collected by each student and plotted against each of the five personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism). **Results and discussion:** The final study sample consisted of 159 participants representing all levels in the college of dentistry. The study showed that the most dominant personality trait is agreeableness, while high conscientiousness was the least dominant personality trait found among both males (17.8%) and females (21.1%). When looking into the GPA, most of the females were above 4.5 and only 1.7% of them were below 4. However, among males only 11.1% had a GPA above 4.5, while 46.7% had a GPA below 4. Openness was found as significantly correlated with agreeableness and conscientiousness, whereas agreeableness was found as significantly associated with neuroticism. However, they are inversely related. There was a significant inverse correlation between GPA and agreeable female students. Also, a significant relation between extravert male students and conscientiousness was observed. **Conclusions:** The more open a person is, the more agreeable and conscientious he/ she is. Female students registered higher GPA than male students.

Keywords: *personality traits, GPA, dental students.*

1. INTRODUCTION

The American Psychological Association defines personality as the individual differences in characteristic patterns of thinking, feeling and behaving [1]. The study of personality is essential for understanding individuals, so that

generalizations about people can be made. These generalizations commonly include classifying people by personality traits, which are the distinguishing characteristics of a person, and types that describe a person's overall pattern of interacting, behaving, and thinking [2-4] Many ways of classifying people's characteristics were proposed, such as The Big Five Personality Traits Test, a 50-item test that reveals a person's traits according to 5 different dimensions, namely: Openness (imaginativeness, broad-mindedness and artistic sensibility), Conscientiousness (dependability and will-to-achieve), Extraversion (activity and sociability), Agreeableness (reflecting likeability and cooperativeness), Neuroticism (tendency to experience negative emotions) [5].

Inherent personality traits are among the multiple important factors expected to affect academic performance and career success of individuals, especially in a highly demanding academic environment like dental curriculum [6]. Understanding the effect of personality traits on individual performance may help enhancing the academic environment and modify teaching methods as well as deciding the future specialization field [7].

The main aim of the present study was to investigate the possible correlation between personality traits and higher grade point average GPA among dental students at "King Saud bin Abdulaziz" University for Health Sciences (KSAU-HS). The secondary aims are to find the percentages of personality traits among dental students and also the pattern of personality traits among different years and genders.

2. MATERIALS AND METHODS

The cross-sectional study was conducted in the College of Dentistry at "King Saud bin Abdulaziz" University for Health Sciences, including all accessible university facilities such as: classrooms, labs, clinics, library, lounges, cafeterias and common areas.

Proper application to conduct this study was submitted and approved by the Institutional Review Board (IRB). Signed and written consent forms were obtained before distribution of questionnaires to participants. Approval of each responsible department or authority was obtained before distribution of the study materials.

Dental students and dental interns at KSAU-HS were asked to participate in the study. No one was excluded unless if he/ she decided not to participate.

The potential targets are the 266 students (133 females, 133 males), representing dental students at KSAU-HS, COD, in addition to 15 interns (all males) who just finished dental school before they receive full credentials to become practicing dentists.

Convenient sampling procedures or randomization methods are not applicable in this study, because: simple random sampling is difficult to implement, to track selected participants scattered among different locations is also difficult, additionally, random sampling is not feasible, due to changes of clusters every semester and every year and, finally, systematic random sampling is not feasible, due to lack of large size clusters.

A consent form will be obtained before the personality test is conducted.

Method of assessment: an online 50-question Five Factor Model Test conducted by a specialized company in the field of human resources (www.truity.com), using I-Pad devices.

Each item consists of a short phrase and the participants indicate the extent to which they agree to each phrase using a 5-point Likert scale.

A percentage was obtained of each of the five traits immediately upon finishing the test and stored. This eliminated any subjectivity.

Each student was assigned a number that matches the answers.

The GPA was collected by each student and plotted against each of the five personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism).

Statistical analysis using Statistical Package for Social Sciences (SPSS) software with version 21 was used.

3. RESULTS

The final study sample consisted of 159 participants selected from all levels of the College. One female participant was excluded due to incomplete personality test. Table 1 presents the distribution of participants by personality traits, GPA and gender. Most of the participants were females. Regarding the personality traits, the study shows that the most dominant one is agreeableness. 57% of the females were found to be highly agreeable. On the other hand, 33.3% of males were in the highly agreeable group. High Conscientiousness was the least dominant personality trait found among both males (17.8%) and females (21.1%). When looking into the GPA, most of the females were above 4.5 and only 1.7% were below 4. However, among males, only 11.1% had a GPA above 4.5, while 46.7% had a GPA less than 4.

Table 1. Demographic and behavioral characteristics of participants

Personality traits		Gender			
		female		male	
		N	%	N	%
Openness	high	33	28.9	10	22.2
	moderate	37	32.5	17	37.8
	low	44	38.6	18	40.0
Conscientiousness	high	24	21.1	8	17.8
	moderate	49	43.0	19	42.2
	low	41	36.0	18	40.0
Extraversion	high	36	31.6	10	22.2
	moderate	48	42.1	20	44.4
	low	30	26.3	15	33.3
Agreeableness	high	65	57.0	15	33.3
	moderate	37	32.5	20	44.4
	low	12	10.5	10	22.2

Neuroticism	high	41	36.0	15	33.3
	moderate	44	38.6	17	37.8
	low	29	25.4	13	28.9
GPA	< 4	2	1.7	21	46.7
	4 - 4.24	12	10.4	13	28.9
	4.25 - 4.49	28	24.3	6	13.3
	4.5 - 4.74	53	46.1	2	4.4
	4.75+	20	17.4	3	6.7

Table 2 shows the correlations coefficient of GPA and different personalities. Openness was found as significantly correlated with agreeableness and conscientiousness. The table demonstrates a significant correlation between students with high conscientious score and higher GPA at the 0.01 level (.222**). Moreover, agreeableness was found to be significantly associated with neuroticism. However, they are inversely related.

Table 2. Spearman’s correlation coefficient of GPA and different personalities

	GPA	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
GPA	1					
Openness	0.018	1				
Conscientiousness	.222**	.171*	1			
Extraversion	0.113	.218**	.292**	1		
Agreeableness	0.018	.198*	0.058	0.065	1	
Neuroticism	0.054	0.103	-.253**	-0.06	-.202*	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 3 presents the correlation coefficient in both genders. Spearman’s correlation analysis showed a significant inverse correlation between GPA and agreeable female students. In contrast,

there was no significant relation between personality traits among male students and GPA, yet a significant relation exists between extravert male students and conscientiousness.

Table 3. Spearman’s correlation coefficient analysis of GPA and different personalities in both genders

		GPA	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Female	GPA	1					
	Openness	-0.062	1				
	Conscientiousness	.262**	0.067	1			
	Extraversion	0.153	.311**	.284**	1		
	Agreeableness	-.236*	.233*	-0.016	0.021	1	
	Neuroticism	-0.036	0.117	-0.166	0.004	-.205*	1
Male	GPA	1					
	Openness	0.072	1				
	Conscientiousness	0.114	.438**	1			
	Extraversion	-0.089	-0.051	.330*	1		
	Agreeableness	0.016	0.119	0.23	0.047	1	
	Neuroticism	0.23	0.015	-.503**	-0.279	-0.274	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4. DISCUSSION

Several research papers have been conducted to study the relation between personality types and academic performance and career success. Given the fact that students vary in their personality traits and in the way they interpret information, their understanding and achievements are expected to differ [6-10]. A recent study published in 2019 concluded that conscientiousness was linked to better academic performance, success in higher education and major satisfaction [6]. Furthermore, personality is recognized as a determining factor on how people learn. Many scholars found out that personality traits are significantly associated with a successful job and academic performance [7-13]. The results of a Malaysian study among health science students revealed a correlation between GPA and openness, conscientiousness and extroversion. Furthermore, multiple linear regression analysis showed that openness and conscientiousness were positively associated with academic performance [11]. Another study showed that all personality traits, except extraversion, positively and significantly predicted students' overall grade. Extraversion was positively related but not statistically significant [12]. Also, a positive relationship was found between the type of personality and exam scores, based on Holland theory of career choice [13]. A recent study revealed that 'Conscientious Personality trait' was highly and significantly associated with a high GPA (4.5-5). However, no significant association was observed between other personality types (Openness, Extraversion, Agreeableness and Neuroticism) and GPA [14].

Kirwan *et al.* [15] examined the relationship between learner self-direction and Big Five factor model and narrow personality traits of college students. Their results were in line with previous findings, showing that the Big Five personality traits have a significant positive relationship with autonomous learning [16]. Furthermore, additional studies were conducted to address the influence of personality traits on academic achievement and the factors that influence students' performance [17-19]. Nevertheless, there is a lack of adequate research

addressing the relation between personality traits and academic achievement among dental students. The results of this study show that the strongest personality trait predictor of students' academic performance is conscientiousness. This finding supports the results of previous studies evidencing that conscientiousness appeared to be a very strong predictor of students' academic performance [7,11,14,20]. Such findings illustrate the importance of the Big Five personality factors in predicting academic excellence and autonomous learning, which is in line with the findings of Kirwan *et al.* [15].

The present study shows that high agreeableness is the most dominant personality trait among both genders, while high conscientiousness is the least dominant trait. This contradicts the findings of Al-Naim *et al.* [14], who reported that both male and female participants scored higher in conscientiousness, which might be attributed to their bigger sample size.

In the current study, most of the female participants had a GPA above 4.5, while only 11.1% of male participants had a GPA above 4.5. This can be explained by the fact that conscientiousness was more dominant among female participants and their related academic excellence.

Although the present study agrees with the findings of most previous studies, it has several limitations. The total number of participants is low, which makes us unable to reach generalized conclusions at this point. Further research should be conducted on larger sample sizes, including dental students from all levels and of both genders. Another limitation is that self-reported measures, which are subject to bias, were used, as students may be less forthcoming regarding their GPA. In fact, several students chose not to report their GPA, which made us exclude them from the study. Moreover, due to the lack of literature in the field among dental students, it was difficult to compare our findings with other similar studies. To the best of our knowledge, this is the first study assessing the academic performance among dental students by studying the relationship between their personality traits and GPAs.

5. CONCLUSIONS

Based on this study's results, the following conclusions can be made:

1- Female students achieved higher GPA than males and there was a significant inverse correlation between GPA and agreeable female students.

2- The more open a person is, the more agreeable and conscientious is. Agreeableness was found to be significantly associated with neuroticism. However, they are inversely related.

3- A significant relation between extravert male students and conscientiousness was evidenced.

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