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Personality Types and Emotional Intelligence as Predictors of Academic Achievement in Students at Kashan University of Medical Sciences

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ABSTRACT

Background: Type of personality and emotional intelligence affects a person's mental function and capabilities, which can influence academic achievement.
Objectives: This study was designed to evaluate the relationship between emotional intelligence, type of character and academic achievement.
Materials and Methods: This is a cross-sectional study on students of Kashan University of Medical Sciences in 2012. In total 221 students participated in the study. In addition to demographic information, a Five Factor Personality Questionnaire and Emotional Quotient Inventory were used. Participants completed questionnaires in their classrooms. Data were analyzed using SPSS software version 16. Descriptive statistics were calculated and analysis of variance and regression analysis were used.
Results: Students in the various disciplines were not statistically different in terms of personality. Students with different grade point averages were significantly different in relation to: problem-solving, happiness, self-actualization, optimism, self-respect, flexibility and total emotional quotient (EQ) scores ($P < 0.05$). However, no statistically significant differences were observed between personality types in students with different grade point average. All variables (EQ, agreeableness, extroversion, openness, consciousness) except neuroticism were excluded from the regression model.
Conclusions: Some components of personality types and emotional intelligence are predictors of academic achievement. Therefore, attention to these issues in students is needed to ensure the best achievement gains.

Implication for health policy/practice/research/medical education:
Personality type and emotional quotient should be considered when selecting students for health care disciplines.

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1. Background

Student life is a very important period because of scientific productivity. It has been shown that emotional intelligence (EQ) and the type of personality are important factors affecting human life (1). Many factors may affect scientific productivity and academic achievement in college students. Some of these are emotional intelligence and personality type. The concept of emotional intelligence reflects the ability of a person to distinguish and

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manage his/her and others emotions in inter-personal relationships (1). Emotional intelligence consists of the adaptive understanding of emotions and using them to enhance decision making and to regulate the emotions (2). Some studies have shown that emotional intelligence has a positive relationship with academic achievement and a negative relationship with unstructured behaviors such as; absence or expulsion from the classroom (3). Approximately 90% of very successful individuals have a high degree of emotional intelligence (4). People with high emotional abilities also have better social capabilities, longer relationships and improved competency in solving conflicts (5). The direct relationship between emotional intelligence and a healthy life demonstrates that, using emotional intelligence capabilities can bring success in life (3). However, some researchers have shown that there is no relationship between emotional intelligence, education or social status (4). There are many types of personality traits. Some studies have reported a relationship between the type of personality and academic achievement (4). On the other hand, other studies have indicated that there is no relationship between personality type and academic achievement (5).

2. Objectives

Due to conflicting reports on the relationship between personality or EQ and academic achievement, this study was designed to evaluate the relationship between; EQ, type of personality and academic achievement, in students of Kashan University of Medical Sciences.

3. Materials and Methods

A cross-sectional study was conducted to examine the relationship between emotional intelligence and personality type with academic achievement of Kashan University of Medical Sciences student's in 2012. All students of medicine, nursing and midwifery, health, and para-medicine were considered as the target population. In total 211 students were selected using a stratified sample according to the following formula ($\alpha = 0.95$, $1\text{-}\beta = 0.8$, $r = 0.23$) (3). Unwillingness to participate and being a junior student were considered as exclusion criteria. The required samples were selected from the list of senior students of each faculty. The researchers referred to each selected student, presented explanations about the research objectives and gave them a questionnaire and requested them to return the answered questionnaire to the researchers' office after 24 hours.

3.1. Instruments

The instrument had three parts including; demographic characteristics (including age, academic discipline, Grade Point Average (GPA) as an indicator of academic achievement), a NEO Five-Factor Inventory, and an Emotional Quotient Inventory.

3.2. NEO Five-Factor Inventory (NEO-FFI)

The NEO-FFI (6) is a brief 60-item version of the NEO-PI-R. As with the NEO-PI-R, the NEO-FFI is a measure of the Five Factor Model of personality and yields scores on the following domains; neuroticism, extraversion, openness, agreeableness, and conscientiousness. Each item was scored on a five-point scale (1 = completely disagree to 5 = completely agree). Estimates of internal consistency for this inventory have ranged from 0.68 for agreeableness to 0.86 for neuroticism (6). Scores on the NEO-FFI are highly correlated with those on the NEO-PI-R, with correlation coefficients ranging from 0.87 to 0.92 except for agreeableness (0.77).

3.3. Emotional Quotient Inventory (EQ-i)

The Emotional Quotient Inventory (EQ-i) is a 133-item questionnaire with a 5-point Likert Response Scale. Responses to each item can range from; '1 = very seldom or not true of me' to '5 = very often or true of me' for positively or negatively-keyed items respectively (7). The final item is a self-report on the honesty of the responses and is not included in any scale. The scales and subscales are; intrapersonal intelligence (emotional self-awareness, assertiveness, self-regard, self-actualization, independence), interpersonal intelligence (empathy, interpersonal relationships, and social responsibility), adaptability (problem solving, reality testing, and flexibility), stress management (stress tolerance, impulse control), and general mood (happiness, optimism). Higher scores indicate a higher level of emotional intelligence (7).

3.4. Analysis

All data were analyzed using SPSS software version 16. Students' GPA was classified into three categories including; less than 15.5, 15.5 to 17.5 and above 17.5. Descriptive statistics (means and standard deviation) and analytical tests (ANOVA for comparing EQ components means and regression analysis to predict academic achievement based on personality types) were used.

3.5. Ethical Considerations

The protocol and its ethical considerations were approved by the Health Faculty Research Committee of Kashan University of Medical Sciences. The participants also signed informed consents form and were assured about confidentiality in the study. Data collection was done after permission from the faculties authorities.

4. Results

The age range of the students was from 18 to 32 years, (mean = 22.5, SD = 2). The results of analysis of variance showed that students in various disciplines were not statistically different in terms of personality (Table 1). Table 2 shows that the students with different GPAs were signifi-

Table 1. Means and Standard Deviations of Personality Type Scores Based on Academic Disciplines

Academic Discipline	Neuroticism, Mean ± SD	Extroversion, Mean ± SD	Openness, Mean ± SD	Agreeableness, Mean ± SD	Consciousness, Mean ± SD	Total, Mean ± SD	No.
Medicine	28 ± 8.2	18.4 ± 5.4	21.1 ± 4	17.5 ± 4.5	14 ± 6.7	99.1 ± 11.6	51
Nursing / Midwifery	26.6 ± 5.7	19.1 ± 5.5	21.7 ± 4.2	17.9 ± 4	14.8 ± 7	99.3 ± 11.6	65
Health	25.7 ± 7.3	18.8 ± 4.6	22.2 ± 3.3	19.7 ± 5.2	16.8 ± 7	102.3 ± 11	50
Para-medicine	25.8 ± 8.1	20.1 ± 6.1	21 ± 5.2	20.4 ± 7	17.2 ± 6.5	103.8 ± 12.7	59
P value	0.349	0.652	0.157	0.182	0.365	0.437	

Table 2. Comparison of EQ Component Scores in the Three GPA Groups [a]

EQ Components	GPA Scores less than 15.5, n = 52	GPA Scores 15.5-17.5, n = 135	GPA Scores above 17.5, n = 34	Total, n = 221	P value
Problem-solving	21.7 ± 4.6	22.8 ± 3.7	20.9 ± 3.5	22.2 ± 4	0.028
Happiness	23.3 ± 40.3	23.2 ± 4.1	21 ± 3.8	22.9 ± 4.2	0.019
Independence	19.9 ± 4	20.1 ± 4	18.8 ± 3.5	19.9 ± 4	0.253
Stress tolerance	19.3 ± 4.2	19.2 ± 4.2	18.1 ± 4	19.1 ± 4.2	0.339
Self-actualization	22.1 ± 4.7	22.5 ± 4.2	20 ± 3.6	22 ± 4.3	0.01
Emotional self-awareness	21.3 ± 3.6	21.5 ± 3.6	20 ± 3.7	21.2 ± 3.6	0.103
Realism	18.4 ± 3.8	19 ± 3.8	17.7 ± 4	18.6 ± 4	0.197
Inter-personal relationships	22.9 ± 3.5	23.4 ± 3.3	22.9 ± 3.2	23.3 ± 3.3	0.586
Optimism	22.5 ± 3.7	22.7 ± 3.5	21.3.2	22.4 ± 3.5	0.043
Self-respect	22.9 ± 3.4	22.3 ± 4	20.8 ± 3.1	22.2 ± 3.7	0.04
Impulse control	18.5 ± 4.6	18.5 ± 5	17.5 ± 3.8	18.3 ± 4.7	0.6
Flexibility	19.5 ± 3.2	19.6 ± 3.8	17.7 ± 4.1	19.3 ± 3.7	0.026
Social responsibility	24.1 ± 3	24 ± 3.6	23.2 ± 3.7	23.9 ± 3.4	0.49
Empathy	24.5 ± 2.6	23.8 ± 3	23.7 ± 3.1	23.9 ± 3	0.327
Self-disclosure	18.9 ± 4.2	18.9 ± 3.8	18.5 ± 3.7	18.9 ± 3.8	0.83
EQ (total)	320.5 ± 40.5	322.1 ± 40.5	302.7 ± 31	318.8 ± 39.6	0.035

[a] Variables are Mean ± SD

Table 3. Means and Standard Deviations of Personality Types According to GPA [a]

Types of Personality	GPA Scores less than 15.5, n = 52	GPA Scores 15.5-17.5, n = 135	GPA Scores above 17.5, n = 34	Total, n = 221	P value
Neuroticism	27.7 ± 6.5	26.4 ± 8	23.7 ± 8.3	26.3 ± 7.7	0.063
Extraversion	18.2 ± 5.4	18.6 ± 5.7	18.8 ± 6.2	18.5 ± 5.7	0.86
Openness	21.9 ± 4.2	22.1 ± 4.1	21.6 ± 4.2	21.8 ± 4.8	0.402
Agreement	16.9 ± 3.7	18.6 ± 5.3	18.5 ± 5.1	18.2 ± 5	0.101
Consciousness	14.2 ± 5.8	14.3 ± 7	15 ± 6.7	14.4 ± 6.7	0.84
Total	98.3 ± 8.8	100.2 ± 13	97.5 ± 11.7	99.4 ± 12	0.462

[a] Variables are Mean ± SD

cantly different in terms of; problem-solving, happiness, self-actualization, optimism, self-respect and flexibility and total EQ scores. The average score of neuroticism in students with a GPA less than 15.5 was 27.7 ± 5.6, and in students with a GPA between 15.5 to 17.5 it was 26.4 ± 8, while students with a GPA above 17.5 scored 23.7 ± 8.3 (P = 0.063) (Table 3). However, no statistically significant differences were observed between other personality types in the three groups. Moreover, the regression analysis was used to predict the relationship between all predic-

tive variables (neuroticism, openness, agreement, conscientiousness and emotional intelligence scores) and the GPA. All variables (EQ, agreeableness, extroversion, openness, consciousness) except for neuroticism were excluded from the regression model. Neuroticism showed the highest negative relationship with academic achievement in this study.

5. Discussion

This present study indicated that there were significant differences in the three GPA categories on total scores of EQ and its subscales such as; problem solving, happiness, self-actualization, optimism, self-respect and flexibility. However, correlation between other components of EQ and GPA were not significant. The results of various studies on the relationship between emotional intelligence and academic achievement are inconsistent. For example, some studies showed a significant correlation between EQ and academic achievement (8-13). In addition, Samari and Tahmasebi found that there was a significant relationship between EQ subscales (independency, emotional self-awareness, empathy and self-expression) and academic achievement (13). In another study, flexibility, independency and empathy were predictors of academic achievement (8). The results of another study showed that EQ when compared to IQ is more closely correlated with academic achievement in both gifted and normal students (10, 12). On the other hand, some studies have shown that there was no significant relationship between academic achievement and EQ (14). Emotional intelligence is more important than IQ for self-control, enthusiasm, perseverance and self-motivation (1). Furthermore, emotional intelligence is an effective way to understand self and others, maintain effective relationships, adaptation and coping with the environment (15). The majors we studied, e.g., nursing, need effective relationships with others, especially with patients. In that case, a higher EQ leads to better academic achievement in these students. Flexibility, was one construct we found that was related to academic achievement, and some research has reported that it is a predictor of academic achievement (16). The construct of flexibility is defined as the ability to adjust one's emotions, thoughts and actions to changing circumstances (17). This definition is similar to the EQ definition. Therefore, the students with greater EQ and flexibility may have better academic achievement. Other constructs in our study that are related to academic achievement such as; happiness and optimism are necessary for good performance in majors related to medicine. It has also been reported to be effective in the ability to maintain a positive attitude, even under hardship (17). The present study showed that personality types are not correlated with academic achievement. The results of various studies on the relationship between personality and academic achievement are controversial. Our findings are consistent with studies that showed no relationship between introversion and extraversion with academic achievement (5, 18, 19). It seems that academic achievement is more highly correlated with cognitive abilities and IQ (20). One study showed that introverted people were more intelligent than extroverted people (14). On the other hand, extroverted individuals are more successful in practical tasks. We studied majors such as medicine and nursing, which include both practical and non-practical tasks. It appears that introverts and extroverts in these majors have similar academic achievement due to different intellectual abilities. In our study, neuroticism was the only predictor of academic achievement. This means that the higher the level of neuroticism, the lower the level of academic achievement, and this finding was consistent with some previous reports (5,14). One study showed that extraversion, adaptability, responsibility and openness, had a significant positive relationship with academic performance, while neuroticism had a negative relationship (14). Another study showed neurotic and anxious students had greater test anxiety. It seems that emotionally stable students perform better than neurotic students on academic tasks. Furthermore, in majors such as medicine and nursing, anxiety disturbs important practical skills. Overall, this study showed that there are significant differences between EQ and its subscales such as; problem solving, happiness, self-actualization, optimism, self-respect and flexibility in the three GPA groups. Moreover, among the EQ and personality components, neuroticism was the best predictor of academic achievement. This study had some limitations. We included only students from the Kashan University of Medical Sciences. Thus, generalization of the results to the general population should be done with caution. Further research should be conducted on psychological factors that could influence academic achievement and their mediating factors in different ages and groups. Longitudinal studies to examine the role of emotional intelligence and personality types on educated people are also suggested.

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Authors' Contribution

Abdollah Omidi, Abolfazl Mohammadi, Goodarz Akashe and Fateme Zargar were responsible for study design, literature search, manuscript preparation and editing. Hossein Akbari participated in the study design, and data analysis.

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