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Predictors of Academic Performance among Potential Medical Students: A Cross-Sectional Study from Rawalpindi

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ABSTRACT

Objective: To compare the potential medical students regarding cognitive intelligence, emotional intelligence, social intelligence and academic performance.

Study Design: Cross-Sectional study

Place and Duration of Study: Army Medical College, Rawalpindi Pakistan, in October 2020.

Methodology: The sample of the study comprised 512 male potential Medical students who completed their High School Education and came for the Entry test at Army Medical colleges with an age range of 17-21 years. All participants were assessed through the group administration of an assessment pack comprised of all tests.

Results: Results revealed that among all 512 students, 390 were finally recommended as selected candidates, and the rest, 122 were finally not recommended. A comparison between recommended and not-recommended groups on study variables was drawn. And result revealed significant mean differences in the variables of Cognitive Intelligence (t=-3.592 and p<0.001) and Emotional intelligence (t=-3.969 and p<0.001) and non-significant differences in the variable of social intelligence and academic performance (t=-1.609; p<0.001; t=-0.900; p<0.001).

Conclusion: Hence, academic performance is proven to be associated with emotional intelligence, IQ and personality characteristics. Better emotional regulation enables the students to develop better peer relations and invest energies in demanding academics owing to their cognitive and non-cognitive skills.

Keywords: Academic performance, Cognitive factors, Cognitive intelligence, Emotional intelligence, High school performance, Medical students, Non-cognitive factors, Potential medical students, Social intelligence.

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INTRODUCTION

The transition from high school studies to college education is often experienced as a perplexing time by most pupils which leads to low retention rates and high dropout in the first year compared to the following years of college life.[1,2] For instance, 33% of university students in the Netherlands get dropped out or switch to other colleges after the first year. Similar statistics are reported in the US, Australia and New Zealand. Twenty percent of students in the US, 7% of students in Australia, and 19% of students in New Zealand from higher education institutes do not come to university for their succeeding the second year.[3] Later on, studies were carried out on medical students, and researchers recognised a few aspects which establish the sources of forecasting success during medical school and in c career.[4] Prevailing literature has also revealed that non-cognitive facets, such as students' attitudes towards learning and motivation, are key interpreters of academic achievement.[5,6]

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Cognitive and non-cognitive indicators and performance results are equally important, as reported by many inclusive studies. It also establishes that the students' academic grades and psychosocial features anticipated preclinical exam performance and clinical exam assessments.[7,8] Additionally, the literature supports that EI and social factors are closely related, where the social profile is viewed as a skill to comprehend others' emotions. It is considered a multidimensional idea which comprises both intellectual and emotional fundamentals.[9] Compassion and empathy in the background of health care are defined as: "predominantly a cognitive as opposed to affective of the emotional attribute, that involves understanding of the patient's pain, experiences, concerns and perspectives combined with a capacity to communicate this understanding and an intention to help".[10] Thus, the empathic approach of healthcare specialists is significant in the care of patients to grow the trustful doctor-patient relationships and reduce their concerns.

METHODOLOGY

The cross-sectional study was conducted at Army Medical College during its annual induction schedule.

For initiation and during the study, all possible ethical and practical concerns were taken into account. Before the start of the study, approval from the Ethical Committee was taken.

Inclusion Criteria: Male candidates who were coming for the Entry test at Army Medical College were included in the study.

Exclusion Criteria: Candidates who registered but did not come for the test were omitted.

Data was collected through the group testing method. The place selected for data collection was the testing hall at Army Medical College, Rawalpindi Pakistan. First of all, the Socio-demographic form, which comprised age, education, birth order, family and socioeconomic status, was administered to the sample to get primary data of the sample. After that, to fulfil the objective of the present study, Cognitive, emotional and social intelligence was measured through indigenously developed tests for the induction of potential medical students. These tests are standardised with sound psychometric properties established by researchers of the Psychological Research Wing. At the same time, academic performance was measured by their grades in high school.

Statistical Package for Social Sciences (SPSS) version 26.0 was used for the data analysis. Quantitative variables were expressed as Mean±SD. Independent sample t-test was used to compare the recommended and not-recommended groups on academic performance, emotional intelligence and social intelligence. The *p*-value lower than or up to 0.05 was considered as significant.

RESULTS

The study sample comprised of 512 males with an age range of 17-21 years. Results revealed that among all 512 students, 390 were finally recommended as selected candidates, and the rest, 122, were finally not recommended. The Table indicates the mean differences between recommended and not recommended potential medical students on the variables of cognitive intelligence, emotional intelligence, social intelligence and academic performance. The result revealed a significant mean difference in the variables of

Table: Mean Differences of Recommended and Not-Recommended Potential Medical Students regarding Cognitive Intelligence, Emotional intelligence, Social Intelligence and Academic performance (n=512)

Variables	Recommended (n=390) Mean±SD	Not-Recommended (n=122) Mean±SD	t	*p*	95% CI		Cohen's d
					LL	UL	
IQ	1.52±0.409	1.37±0.388	-3.592	0.000	-0.227	-0.066	0.27
EQ	122.99±12.55	118.40±10.67	-3.969	0.000	-6.873	-2.313	0.34
SQ	114.26±13.51	111.96±13.75	-1.609	0.109	-5.126	-2.313	0.32
AP	807.7±258.29	783.59±257.92	-0.900	0.369	-76.91	28.69	0.22

Note: IQ= Cognitive Intelligence, EQ= Emotional intelligence, SQ= Social Intelligence, AP= Academic performance

Cognitive Intelligence (t=-3.592; $p<0.001$) and Emotional intelligence (t=-3.969; $p<0.001$). This means recommended potential medical students have good IQ and emotional intelligence compared to those not recommended. Whereas there were non-significant differences in the variable of social intelligence and academic performance (t=-1.609; $p<0.001$; t=-0.900; $p<0.001$) depicted that academic grades and social IQ remained the same for both groups.

DISCUSSION

Findings reveal that there are noteworthy mean differences between EQ and IQ. Academic success is significantly correlated with cognitive abilities and IQ.[11,12] The results of various studies in existing literature also showed that EQ and IQ significantly correlate with academic achievement in both exceptional and average students.[13] In addition, there was a substantial relationship between EQ and academic achievement.[14] One more study reveals that Emotional intelligence is more imperative than IQ for self-control, passion, determination and self-motivation.[15]

Additionally, EI is worthy as it is linked directly to success in advanced professional education and a better physician and patient relationship.[16] Our findings also predict the direct influence of it on academic achievement in professional medical education. These discoveries are easy to understand as being emotionally intelligent increases students' ability to solve problems and enhances interpersonal and intrapersonal abilities, which are vital in academic achievement. Few other types of research have proven that EI is linked to academic and professional success.[17] Hence, students with better emotional intelligence demonstrate more positive social functioning and are observed by peers as prosocial and less aggressive. Likewise, emotional intelligence (EI) is the capacity to

distinguish emotions, evaluate and develop emotions to assist thought, recognise emotions and their meanings, and thoughtfully reciprocate and regulate emotions to stimulate better emotional and cognitive development.[18]

EI also leads to managing emotions that qualify an individual to ward off stress and anxiety, which is related to test taking and examination as a vital component to high academic achievement. Furthermore, emotional intelligence raises interpersonal skills desired to pursue academic support from peers and teachers. The present findings are in line with existing studies.[11,19]. Hence, academic performance is associated with emotional intelligence, IQ and personality characteristics. Better emotional regulation enables the students to develop better peer relations and invest energies in demanding academics owing to their cognitive and non-cognitive skills.

CONCLUSION

Hence, academic performance is proven to be associated with emotional intelligence, IQ and personality characteristics. Better emotional regulation enables the students to develop better peer relations and invest energies in demanding academics owing to their cognitive and non-cognitive skills.

Conflict of Interest: None.

Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

NM: Data acquisition, data analysis, critical review, approval of the final version to be published.

KS: Study design, drafting the manuscript, data interpretation, approval of the final version to be published.

SK: Critical review, concept, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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