ORIGINAL ARTICLE

Academic Performance as A Function of Psychological Profile and Personality Type

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ABSTRACT
Objective: This study aimed to evaluate the association and psychological profile, including depression, anxiety, stress, and personality type (Type A and Type B), with the academic performance of the medical students.
Methodology: It was a cross-sectional study conducted at different medical colleges in Peshawar. The data was collected from the final year students of MBBS. A total of 325 students participated in the study. Informed consent was taken from the participants. The academic performance (Success and failure) was documented through the annual result sheets of the students. Jenkin's Personality Survey Questionnaire evaluated personality types, and Depression Anxiety Stress Scale-21 (DASS-21) was used to assess stress, anxiety, and depression. The data was entered and analyzed on SPSS 26.
Results: Out of 325 students, 199 were male, and 126 were female. Type A personality students (88.8%) had a high success percentage of academic performance as compared to Type B personality (70.7%). There was an association between Depression, Anxiety, and stress with students' academic performance. The medical students with low intensity of depression (84.4%), anxiety (84.4%), and stress (83.8%) had more success in academic performance.
Conclusion: There is an association between the personality types (Type A and Type B) and psychological profile with the academic performance of the medical students.
Keywords: Academic Performance (MeSH), Students (MeSH), Medical (MeSH), Personality (MeSH), Depression (MeSH)

INTRODUCTION

Worldwide concepts of medical education's basic and clinical curriculum are comprehensive, exaggerated, and challenging for the students and faculty.[1] The student's academic performance can be affected by multiple factors such as academic stress, personality traits, motivation, dedication, and physical health.[2] Similarly, another study showed that academic styles, social elements and behavioral patterns could influence the academic performance of medical students.[3] Different elements are associated with students' success and failure. Academic emotion can influence learning and performance, which is directly connected to various academic outcomes.[4] The Pekruns' control-value[5] offers an extensive design for studying the influence of various emotions experienced by students in academic settings. Some scholars believe positive emotions could increase the students' intrinsic and extrinsic motivation. At the same time, negative emotions are suggested to reduce motivation uniformly. Specifically, negative emotions such as anxiety can predetermine intrinsic motivation but can influence strong extrinsic motivation to evade failure. Students' motivation enhances the academic outcomes which they experience in educational settings.[6] It is difficult to recognize a learner who has a problem and identify the striving ones.[7]

Medical students are vulnerable to a high level of stress. High stress is associated with mental and physical health, reduces students' self-esteem, and eventually affects their academic performance. A study conducted in the US and Canada[8] reported that medical students perceive more stress than non-medical students. Depression and psychological distress are more among medical students, reducing in early professional life.[9] Medical curriculum may contribute to the high prevalence of psychological distress among medical students. Medical students' stressful environment needs to develop strong time management and prioritization skills to adapt.[9]

Type-A and Type-B personality is the essential factor affecting the medical students' academic performance.[10] According to the American Psychological Association (APA)[11], personality is defined as individual characteristics or patterns of intellectual thinking, feeling, and acting. The desire to be excellent coupled with a competitive learning environment engages "Type A" personalities. The learning behavior of Type A personality may be detrimental to psychological health.[12] Type A behavior pattern is defined by Lohse et al.[13] as an action–emotion complex, with individuals characterized by ambition, highly competitive attitudes toward achievement, and feeling compelled to "work harder than Type B individuals to accomplish tasks, regardless of external stressors". They have an exaggerated sense of urgency about time, preferring to spend it on things they deem as priorities and possibly becoming aggressive, hostile, or impatient in frustrating situations. This study aims to determine the factors that affect the academic performances among medical students and to reduce failure in the medical profession. The rationale of this study was to find out the association of Type A and Type B personalities and psychological profiles with the student's academic performance. This study will help the students and faculty adopt and modify the learning environment following psychological profile and personality types. The objective was to evaluate the association of psychological profiles, including depression, anxiety, stress, and personality type (Type A and Type B), with the academic performance of the medical students.

METHODOLOGY

It was a cross-sectional descriptive study carried out on 325 final year professionals of MBBS students. The sample was selected through the clustered sampling technique. MBBS students from the final year were selected to participate in this study. The data was collected from the different medical colleges in Peshawar from January 2020 to April 2020. The academic record was taken from the college's administration for research purposes. The students who left the college during the session or did not attend college for six months were excluded from the study. The ethical approval was taken from the ethical review board of Gandhara University, Peshawar. Data was collected using a structured interview; a pre-validated scale, DASS-21 (depression, anxiety, and stress scale), was used. The reliability of Cronbach's alpha values for the subscales of depression, anxiety and stress, respectively, were 0.81, 0.89 and 0.78.[14]. Students were asked to score every item on a scale from 0 (which did not apply to me at all) to 3 (applied to me very much). Mild (>6 depression, >5 anxiety, >9 Stress), moderate (7-10 depression, 6-7 anxiety, 10-12 stress) and severe (<13 depression, <8 anxiety, <13 stress) scores were reported respectively.[15] Jenkin activity survey (JAS) was used to assess

Type A and B Personalities whose low scores indicate Type B personality, and high scores imply Type A personality. The scale comprised of 20 items with reliability of 0.86.[16] Chi-square test was used to find the association of levels of stress, anxiety, depression, and personality types among medical students. A p-value of 0.05 or less was considered significant. SPSS- 23 was used for recording and analyzing the data.

RESULTS

The study comprised 325 medical students of final year students. 199 were male, and 126 were female. Two hundred fifty-four medical students passed their exam on the first attempt. The academic performance (success and failure) was evaluated with the factors; of stress, anxiety, depression, and personality types (Type A and Type B). The association of gender with success and failure was not statistically significant, with a p-value >0.05. Personality type was found to be significantly associated with the success and failure of the students.

Table I: Cross-tabulation of gender with academic performance

Gender	Academic Performance		Total	Chi-square	P-value
	Success	Failure			
Male	156(78.4%)	43(21.6%)	199		
Female	98(77.8%)	28(22.2%)	126	0.01	0.89

Table II: Cross-tabulation of personality with academic performance

		Academic Performance		Total	Chi-square	P-value
		Success	Failure			
Personality	Type A	119 (88.8%)	15(11.2%)	134 (100%)		
	Type B	135(70.7%)	56(29.3%)	191 (100%)	15.15	0.001

Table III: Cross-tabulation of psychological profile with academic performance

		Academic Performance		Chi-Square value	P-Value
		Success	Failure		
Depression	low	168 (84.4%)	31 (15.6%)		
	moderate	43 (65.2%)	23 (34.8%)	12.59	0.002
	high	43 (71.7%)	17 (28.3%)		
Anxiety	low	152 (84.4%)	28 (15.6%)		
	moderate	94 (72.3%)	36 (27.7%)		
	high	08 (53.3%)	07 (46.7%)	12.18	0.002
Stress	low	150 (83.8%)	29 (16.2%)		
	moderate	66 (70.2%)	28 (29.8%)		
	high	38 (73.1%)	14 (26.9%)	7.59	0.02

DISCUSSION

This study shows a relationship between the academic performance with the personality types (Type A and Type B) and psychological profile (depression, anxiety, and stress) of the medical students. The academic performance results across the gender were insignificant, as shown in Table I. The Type, A personality students, had more success in academic performance along with a reduced level of stress, anxiety, and depression. Most of the studies were conducted to identify the factors that affect student performance. Identifying those factors and the correlation between them is a complex process.

Personality traits and academic performance have a strong relationship. A study showed a statistically meaningful association between personality traits and cognitive performance.[17] Another study showed that the prevalence of Personality Disorders (PDs) is highest among subjects with only a high school education.[18] Our study revealed a significant difference with a p-value of 0.048 for Type-A and Type-B personalities in success and failure. The levels of stress, anxiety, and depression among students only affect their health but also their academic achievement**s**. Several studies have reported stress among undergraduate medical students. Egypt[19], Sudan[20], Lebanon [21], and Saudi Arabia[22] showed high-stress levels among medical students. In the studies conducted in three universities in Britain, the prevalence of stress was 31.2%, whereas, in a Malaysian medical student, 41.9% and a Thai medical undergraduate's stress level was 61.4%.[23] our study concluded that the students who had minimal stress levels were more successful than a high level of stress. According to Swedish study results, 12.9 per cent of the medical students had a high prevalence of depressive symptoms, whereas 2.7 per cent of students made suicidal attempts.[24] In this study, the low level of depression among students, were more successful than students who had a high level of depression. A recent review showed that the prevalence of anxiety among preclinical students varied.[25,26] In the future, the researchers should work on the other aspects of the personality traits associated with academic performance. There should be some interventional studies for such students. Therefore, the faculty will be trained to cope with the students having different personality traits and factors affecting their academic performance.

CONCLUSION

It was concluded that personality traits, stress, anxiety, and depression influence the academic performance of medical students. There should be some platforms for the students in medical institutes where they can polish their personality traits and improve their psychological health.

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