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Research Article

A study of the effect of personality on the moods of young adult learners

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ABSTRACT

Background: Medical education is inherently stressful and can be a source of anxiety and depression if a student fails to cope with the vast syllabus. The personality of the learner, if apt, will help him perform better as a student and doctor. It would also act as a stabilizing influence on the moods of the learners while facing academic challenges. This study was done to analyse the effects of personality on the moods, namely stress, anxiety and depression levels.
Methods: The study was done using validated tools, the big 5 personality and the depression, anxiety and stress scale questionnaire (DASS). The study sample consisted of 200 first and second year medical students in an Indian medical college. ANOVA and Pearson's correlation tests were used.
Results: The results show that personality traits have a highly positive influence on development of stress, anxiety and depression and no influence of gender noted.
Conclusions: In addition to academic scores, personality testing may be advised before the student gains entry into the medical profession.

Keywords: Neuroticism, DASS scale, Big 5, Medical students, Depression, Anxiety traits

INTRODUCTION

An inability to deal with external demands is often perceived as stress. Medical students whether in India or elsewhere have a higher risk of physical and mental health problems as a byproduct of stress when compared to students from other professions.[1]

Failure of coping mechanisms to deal with the pressures of the medical profession results in the birth of anxiety and depression which is higher in prevalence than that of the general population.[2] A stressed out, anxious and depressed medical professional undoubtedly suffers from negative cognitive function and thereby his learning ability declines, making him an ineffective doctor eventually. A good score in premed ensures admission into the medical stream. While this is a cognitive method of choosing students into the profession, the non-cognitive methods like the psychometric tests to look into the applicants' intangible skills and personality is often ignored.[3]

A student, if he has the wrong personality to become a doctor, irrespective of his grades becomes a misfit. It becomes almost impossible to nurture this young individual to become a skilled professional. Just the grades of the students cannot act a predictor of his skills in the medical profession. With the placement of a wrong individual in a wrong profession, the generation of stress, anxiety and depression is inevitable.

There is a range of evidence supporting the predictive value of personality traits in non-medical occupational setting with regards to job satisfaction, success in career,

academic performance, mental health and wellbeing. Researchers have demonstrated the effect of personality traits on academic performance in the west, while in India there remains a paucity of information in this regard.[4] A student happy in his career choice will have stable moods and thereby good academic performance.

In this study, we aim to look into the relationship of personality traits on the moods of the students of medicine and thereby extrapolate their future in the medical field.

METHODS

This cross sectional study was done in I and II year medical students of IQ City medical college in Durgapur, India. 143 I year and 57 II year students gave the consent and became participants in this study.

The institutional ethics clearance was also obtained. The test was conducted during college hours after clear instructions were given.

It took the students approximately 40 minutes to fill the two questionnaires on mood (DASS) and personality (BIG 5). The results so obtained were tabulated and analysed using SPSS version 22 software. Chi square tests, Pearson's correlation tests were the statistical tools used.

Personality questionnaire: IPIP Big five factor markers

This validated questionnaire consists of 50 items graded on a 5 point Likert scale from 1 (disagree) to 5 (agree). The big five factors of personality are extroversion, agreeableness, conscientiousness, openness and neuroticism. The scores are added and the personality trait determined. While all individuals have all the five personality traits in them, one trait predominates. This trait is used to identify the participant as having a particular type of personality.[5]

- *Extroversion* is the tendency to be positive, energetic and friendly.
- *Neuroticism* tendency to be anxious, tensed, impulsive and have low self-esteem.
- *Openness* a person who is curious, flexible and wise
- *Agreeableness* the ability to adjust one's behaviour to suit others.
- *Conscientiousness* a person who is organised, efficient, reliable and hard working.[5]

Depression, anxiety and stress scale (DASS)

This validated tool has 42 items comprising of 14 questions in each category which help to identify depression, anxiety and stress. The questions are graded on a Likert scale from 0 (does not apply to me at all) to 3 (applies to me most of the time).

Based on the responses, the score in each category of the student is tabulated and classified as normal, mild, moderate, severe or extremely severe categories. A student may me normal, anxious, stressed out or depressed or a combination of these [6].

RESULTS

This study involved 200 participants of the first and second year of medicine of which 104 were female students.

Table 1: Stress levels in various personalities.

			Stress - MOOD					Total	p
			No stress	Mild	Moderate	Severe	Extremely severe		
Personality	A	Count	71	15	9	3	2	100	0.0001***
		% within personality	71.0%	15.0%	9.0%	3.0%	2.0%	100.0%	
	C	Count	24	5	5	2	0	36	
		% within personality	66.7%	13.9%	13.9%	5.6%	0.0%	100.0%	
	E	Count	7	0	2	1	0	10	
		% within personality	70.0%	0.0%	20.0%	10.0%	0.0%	100.0%	
	N	Count	8	4	4	9	2	27	
		% within personality	29.6%	14.8%	14.8%	33.3%	7.4%	100.0%	
	O	Count	15	1	7	1	0	24	
		% within personality	62.5%	4.2%	29.2%	4.2%	0.0%	100.0%	
Total		Count	125	25	27	16	4	197	
		% within personality	63.5%	12.7%	13.7%	8.1%	2.0%	100.0%	

*** highly significant (p<0.001);A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openness; Pearson chi square – 0.0001***; Pearson'R- 0.0001***

Table 2: Gender wise distribution of stress in various personalities.

Gender			Stress - Mood					Total	P
			No stress	Mild	Moderate	Severe	Extremely severe		
F	**Personality**	A	36	8	8	3	1	56	0.06
		C	14	3	1	1	0	19	
		E	2	0	0	1	0	3	
		N	3	3	3	5	0	14	
		O	9	0	3	0	0	12	
	Total		64	14	15	10	1	104	
M	**Personality**	A	35	7	1	0	1	44	0.001***
		C	10	2	4	1	0	17	
		E	5	0	2	0	0	7	
		N	5	1	1	4	2	13	
		O	6	1	4	1	0	12	
	Total		61	11	12	6	3	93	

*** highly significant p(<0.001); A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openness.

Table 3: Depression levels in various personalities.

			Depression - Mood					Total	
			No depression	Mild	Moderate	Severe	Extremely severe		p
Personality	A	Count	67	17	11	3	2	100	0.012*
		% within personality	67.0%	17.0%	11.0%	3.0%	2.0%	100.0%	
	C	Count	26	2	5	2	1	36	
		% within personality	72.2%	5.6%	13.9%	5.6%	2.8%	100.0%	
	E	Count	7	2	0	1	0	10	
		% within personality	70.0%	20.0%	0.0%	10.0%	0.0%	100.0%	
	N	Count	8	6	5	5	3	27	
		% within personality	29.6%	22.2%	18.5%	18.5%	11.1%	100.0%	
	O	Count	13	8	2	1	0	24	
		% within personality	54.2%	33.3%	8.3%	4.2%	0.0%	100.0%	
Total		Count	121	35	23	12	6	197	
		% within personality	61.4%	17.8%	11.7%	6.1%	3.0%	100.0%	

significant (p<0.05); A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openness; Pearson chi square- 0.012; Pearson's R- 0.011 * (highly significant p<0.05).

Table 4: Gender wise distribution of depression in various personalities.

Gender			Depression - MOOD					Total	P value
			No depression	Extremely severe	Mild	Moderate	Severe		
F	**Personality**	**A**	33	2	12	7	2	56	0.063
		C	17	0	0	1	1	19	
		E	2	0	0	0	1	3	
		N	4	1	4	3	2	14	
		O	7	0	5	0	0	12	
	Total		63	3	21	11	6	104	
M	**Personality**	**A**	34	0	5	4	1	44	0.067
		C	9	1	2	4	1	17	
		E	5	0	2	0	0	7	
		N	4	2	2	2	3	13	
		O	6	0	3	2	1	12	
	Total		58	3	14	12	6	93	

A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openness

Table 5: Anxiety levels in various personalities.

		Anxiety - Mood					Total	P
		No anxiety	Extremely severe	Mild	Moderate	Severe		
Personality	A	50	7	10	29	4	100	0.008**
	C	20	1	5	6	4	36	
	E	4	1	4	1	0	10	
	N	8	7	3	5	4	27	
	O	9	0	4	8	3	24	
Total		91	16	26	49	15	197	

P=0.008** (p- highly significant at <0.01); A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openness; Pearson chi square- 0.008**; Pearson's R-0.05 * (significant ;p<0.05)

Table 6: Gender wise distribution of anxiety in various personalities.

Gender			Anxiety - Mood					Total	P
			No anxiety	Extremely severe	Mild	Moderate	Severe		
F	Personality	A	21	6	6	19	4	56	0.194
		C	11	1	3	4	0	19	
		E	2	0	1	0	0	3	
		N	3	3	3	2	3	14	
		O	8	0	1	3	0	12	
	Total		45	10	14	28	7	104	
M	Personality	A	29	1	4	10	0	44	0.001***
		C	9	0	2	2	4	17	
		E	2	1	3	1	0	7	
		N	5	4	0	3	1	13	
		O	1	0	3	5	3	12	
	Total		46	6	12	21	8	93	

***highly significant (p<0.001);A – agreeable, C- conscientiousness, E- extroversion, N- neuroticism, O- openess

DISCUSSION

Changes in mood, whether it is the elevation of stress levels or development of anxiety and depression can have far reaching consequences on the life of a medical student, both in terms of his academic performance and his career as a doctor. A student if he has the correct personality for his profession would be at an advantage in handling the day to day demands of his career.[7]

The research in the science of personality in the medical student domain has been dismal and thereby, its effects on the moods of the learners poor. In India, in particular, no thought is given to the personality of a student when he makes a career choice; only his academic merit is held of consequence. Hence there is a constant threat of including misfits in the medical profession who do not have the right blend of characteristics to perform exemplarily in their professions.

With this thought at the forefront, a study was designed to evaluate the effect of personality on the stress, anxiety and depression levels of the first and second year medical students. On analysis of Table 1, the following most obvious points come to light. Out of the 200 students who participated in this study, 197 provided complete data. 50% of the students belong to the agreeable type of personality while extroverts (3.5%) formed the least.

It was heartening to note that almost 64% of the students had no form of stress. Only 4 students (2%) had extremely severe stress of which 2 students were of the neurotic personality. Furthermore, on studying the distribution of individuals suffering from stress, 33% were neurotic which is statistically significant.

Hence it is safe to conclude that people with neuroticism traits have higher stress levels which may require intervention. The extrovert students appear to have least amounts of stresses. Unfortunately, very few of our students are extroverts. On performing the Pearson's correlation test, we see that the type of personality would act as a strong predictor of stress development.

In a study done by Abdulghani et al, stress levels in his study group of medical students was higher than our group and the levels of extremely severe stress was also much higher. He also quotes that mental health worsens after students begin medical school and continues to be poor throughout the course.[8]

Long term follow up studies to investigate this statement would be highly recommended. In Botswana, studies done in the non-medical stream conveyed some alarming findings. There occurred presence of high levels of anxiety and stress which manifested in the physical forms like nervousness, indigestion and vague aches and pains.[9]

A study done in Malaysia has results similar to ours wherein neuroticism had the strongest association with psychological health of medical students.[3] In this study, the data was collected from the students within the first month of the commencement of the course and hence a higher level of anxiety and stress may be expected. It will however be interesting to observe how the students with various personalities adapt and adjust to overcome the stresses faced in medicine and if the student may be able to mould or change his personality traits to meet the demands of this intensive study arena.

Table 2 shows a sex wise variation of stress levels among the different personalities. 104 female and 93 male students were studied. The distribution of stresses among the various personalities among the sexes is almost equal. Only 4 boys and 5 girls had severe stress. The prevalence of stress in males was seen to be highly significant. Girls had more of mild and moderate stress levels. Care must be taken to prevent its progression to higher stress states. In a study done in India, most of the females were neurotic with higher levels of stress, anxiety and depression.[10]

Another point to ponder about is that medical health professionals have significantly higher amounts of stress, anxiety and depression which is a genuine cause for concern since the mood of the health care givers affects the treatment outcome given to patients.[11] In yet another study, researchers found evidence of higher neuroticism levels among female high achievers which is in not the case in this study.[12]

One plausible explanation which puts neurotic individuals at risk maybe due to a link mediating their high reactive responses to daily stressors and high negative affect while people who are more conscientious who form the second highest personality trait in our study population are protected from stress by means of their personality.[13] Since most of our learners are agreeable (both male and female), a special mention here becomes necessary to emphasise the importance of such a personality trait since they tend to have positive appraisal of events and may also be protected from stresses.[14]

It is evident from table 3 that personality traits have an effect on the depression levels of the learners. 6 and 12 students respectively of the 197 participants were extremely severely and severely depressed. While it is encouraging to note that more than 60% of our participants had a sense of wellbeing and showed absence of depressive symptoms, the remaining had significant depressive moods. Equally noteworthy is that there is a positive correlation between developments of depression based on the individual personalities. Of the personalities studied, neurotic individuals are at a higher risk of developing depression (70% in this study) and conscientious people develop the least amounts of depression. Karsten et al noted that neurotics are maximally affected by depressive state as is seen in this study followed by extroverted individuals, an observation not made in this study.[14]

People with personalities of conscientiousness; agreeableness and openness were found to be stable during depressive episodes.[15] The explanation for this may lie in understanding the physiology of personality itself. Ultimately it is the personality that determines who we are and makes us unique. A conscientious individual has features of thoughtfulness, impulse control, goal orientation and is said to be extremely organised which makes him less susceptible to depressive moods.[16] In the past, thinking inclined towards personality being fixed and biological in origin.

But present day literature leans towards modifiability and mouldability of personality. A gradual change in personality is possible over time.[17] With this information in the background, a detailed analysis of personality maybe recommended before a career choice is made and interventional strategies thereafter to ensure suitability to the profession chosen. Having put the claim to rest that personality does have a correlation with the development of depressive states, we were now interested in looking at the gender variation of the same.

However, it was observed that there was no significant contribution of gender to the development of depression as seen in table 4 and the prevalence and distribution of depressive symptoms among both the sexes across various personalities appear to be similar. Some studies have quoted that female students often consulted psychiatrists and psychologists more and that the presence of depression and anxiety symptoms were more in females.[18,19] This was not the case in this study group.

We call to attention the findings of table 5 where we note that 46% of the study population are free from anxiety when the test was taken. Only 7-8% of the students suffered from severe to extremely severe anxiety levels of which most were neurotic. This goes hand in hand with the other findings of this study. Neurotics have the highest levels of anxiety, depression and stress in this study.

70% of neurotics are anxious followed by openness trait (62%), extroversion (60%), agreeableness (50%) and the least, conscientiousness (44%). Personality also has a positive correlation with the development of anxiety traits. Anxiety may be conceptualised as a mismatch of one's appraisal of the rate of progress made towards a desirable outcome or even as away from an undesirable outcome.[20] It is as simply as an interactive state between

affect, cognition and set goals. Depression and anxiety often co-exist though it is not necessary for both the traits to be simultaneously manifest in an individual.[16] A point worth emphasising on is the low levels of depression and anxiety seen in conscientious people a fact also noted by other researchers.[16,17] That being the fact, most of our study group belong to the agreeable personality and delving further into this arena would help in further contribution to the existing research in the field of personality. An extrapolation of this fact maybe that higher level of conscientiousness must be cultivated to perform well in medical studies.

Table 6 looks into the dimensions of personality and anxiety based on the gender variations and quite interestingly we note the existence of high significance of the presence of anxiety in male students. This is in contradiction to studies done by Merciline et al and Peterlini et al.[10,18]. Further exploration in this aspect is required. One of the possible explanations offered maybe that higher levels of expectations from the parents and society on men to perform well in the medical field coupled with the fear of the unknown future with respect to post graduate admissions and jobs makes the male students more anxious.[9] The use of personality testing measures maybe the key to reducing anxiety levels irrespective of the sexes.[21]

CONCLUSION

A blend of a person's cognition, behaviour, motivation and desires is what makes up his personality. Personality influences an individual's moods (stress, anxiety and depression). In a career as inherently stressful as medicine, choosing the right candidate by means of personality testing may help him cope with the academic overload while maintaining a fairly stable mood in order to blossom into an effective and competent doctor.

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