Psychological Well-being of Medical Students

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Abstract

Background : Training in medicine is emotionally demanding. Psychological well being of medical students is a matter of concern. There is lack of Indian studies in this area.

Methods : A total of 105 medical student of one batch were assessed utilizing psychophysiological state inventory, Institute for personality and ability testing (IPAT) anxiety and depression scale, achievement motivation scale, scale for locus of control and 16 PF in three phases at one-year intervals.

Result: Majority of the students had average achievement, motivation and adaptability. Anxiety and depression scores fell within normal limits. In personality profile factor 'B', 'M' and 'Q4₁' had changed significantly. Achievement motivation showed significant decreases and CSS1 and PO1 scores showed significant increase during the years of medical education.

Conclusion : The results demonstrate that over satisfaction and relaxed attitude may have poor academic outcome.

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Key Words : Psychological well-being; Anxiety; Depression; Achievement motivation

Introduction

Medicine is an emotionally demanding training and career [1]. Numerous authors [2,3], have emphasized the role of positive mental health among students for their future growth. The stress of medical training stems from academic pressure, perfectionist standards and demanding nature of medical practice which requires involvement with the most personal or emotionally draining aspects of life (human suffering, death, sexuality and fear). Assessment of anxiety and depression during various phases of medical education revealed that first and fourth years were most stressful. Researchers found higher scores on anxiety and depression in second year of medical education [4-6]. Students who drop out of professional institutions do not lack intellectual ability, but emotional problems and poor motivation lead to the failure [7]. The available literature on psychological distress in health profession has largely ignored the influence of personality traits that might predispose some students to psychological maladjustment during training [8]. Motivation, emotional adjustment, locus of control and other personality factors play a significant part in the success of entrants to professional institutions

Longitudinal studies on psychological morbidity and life events in medical students have been conducted in

the United States, Turkey and United Kingdom [7]. However, longitudinal study in Indian literature is lacking. In view of above the present study was planned.

Material and Methods

All medical students of one batch were included in the present study after obtaining their consent. The psychological assessment was carried in group settings. Students were assessed in IInd, Vth and VIIth term as there are no university exams in these terms. Initially 120 students filled up the questionnaires but in the second phase 15 of them dropped out and were excluded from the study. Hence for the purpose of study, sample comprised of 105 medical students. During the period of study, the cohort appeared for first and second M.B.B.S. exams. Marks of these exams were recorded. Psychophysiological state inventory [9], Institute for personality and ability testing (IPAT) anxiety and depression scale [10], Locus of control [11], Achievement motivation scale [12] and 16 personality factors test [13].

Data was analysed using statistical packages EPI 6 and SPSS. Paired 't' test was applied for longitudinal profile of personality (16PF) and depression scores. Further ANOVA was calculated for the evaluation of personality in relation with academics. Academic performance was grouped in three categories. Those who failed as 1, those who obtained 50-60% of marks as 2 and those who obtained greater than 60% of marks as 3. For the purpose of evaluation of longitudinal performance of the related sample on various parameters Cochran test was applied.

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Result

Majority of the students hail from urban, non-medical and civil background (Table 1). On baseline assessment of neuroticism physiological adjustment is noted in 88.57% of students (Table 2). However over a period of time there is a significant decrease in proportion of physiological adjustment ($p < 0.001$). On psychological adjustment, students having psychological adjustment at baseline are 66.66% (Table 2), and there is no significant change over a period of time ($p > 0.05$). Depression inventory scores fall within normal limits (Table 3). On anxiety parameters 86.7% of students score below the cut-off (Table 4) and there is no significant difference in anxiety on longitudinal assessment ($p > 0.05$).

On achievement motivation scale 17.14% of students scored in the high range of motivation (Table 5). On a longitudinal basis there is a significant decrease in the achievement motivation ($p < 0.01$). On scale of locus of control in individual control and chance control dimensions 66.66% and 67.6% of the students have average scores (Table 6). On longitudinal assessment the difference is not significant ($p > 0.05$). On powerful other, 81.90% of students have scored average, over a period of time and there is a significant increase in this dimension.

Table 1

Socio demographic details

	No.	%
Mean Age	18.46	0.09
Female	25	23.8
Male	80	76.2
Rural	22	21
Urban	83	79
Medical	21	20
Non Medical	84	80
Civil	87	82.9
Military	18	17.1
Monthly Income		
≤5000/-	16	15
5001/- to 15000/-	73	69.6
>15000/-	16	15.4

Table 2

Psychophysiological state inventory for neuroticism

Psycho-physiological state inventory	≥ 4	<4	Q	df	p
Part I Physiological					
Phase I	93 (88.57%)	12 (11.42%)	13.03	2	0.001
Phase II	90 (85.71%)	15 (14.28%)			
Phase III	78 (74.28%)	27 (25.71%)			
Part II Psychological					
Phase I	70 (66.66%)	35 (33.33%)	0.04	2	0.9
Phase II	71 (67.61%)	34 (32.38%)			
Phase III	71 (67.61%)	34 (32.38%)			
Total Score					
Phase I	84 (80%)	21 (20.00%)	82.01	2	0.01
Phase II	84 (80%)	21 (20.00%)			
Phase III	72 (68.57%)	33 (32.00%)			

On 16 PF Questionnaire, Factor B (Dull v/s Bright) has shown significant decrease (Table 7). On factor 'M' (practical v/s imaginative) and on Factor Q1 (conservative v/s experimenting), there is a significant increase ($p < 0.01$). However other factors have not shown significant change on longitudinal profile ($p > 0.05$).

Personality factors analysed against the result of fail and pass (Table 8) and those having scored >60% marks reveal that increase in dimension of high ergic tension (Q4) corresponds with better result in first phase of assessment ($p < 0.05$).

Discussion

The training period of the medical student has been

Table 3

Personal assessment inventory depression

Parameter	Phase I		Phase II		Phase III		t Test (p value between Phase I and III)
	Mean	SD	Mean	SD	Mean	SD	
PAI depression	3.73	1.9	3.9	1.6	3.95	1.5	0.2

Table 4

IPAT anxiety scale

Anxiety scale	≤7	>7	Q	df	p
Phase I	91 (86.66%)	14 (13.33%)	0.96	2	0.6
Phase II	95 (90.47%)	10 (9.52%)			
Phase III	93 (88.57%)	12 (11.42%)			

Table 5

Achievement motivation score

Achievement motivation	≤31	>31	Q	df	p
Phase I	87 (87.85%)	18 (17.14%)	16.3	2	0.003
Phase II	81 (77.14%)	24 (22.85%)			
Phase III	97 (92.38%)	8 (7.61%)			

Table 6

Longitudinal analysis: locus of control

Psychological parameter	≤6	>6	Q	df	p
Powerful other					
Phase I	78 (74.28%)	27 (25.71%)	6.5	2	0.03
Phase II	71 (67.61%)	34 (32.38%)			
Phase III	69 (65.71%)	41 (39.04%)			
Chance control					
Phase I	71 (67.61%)	34 (32.38%)	2.37	2	0.3
Phase II	78 (74.28%)	27 (25.71%)			
Phase III	79 (75.23%)	26 (24.76%)			
Individual control					
Phase I	70 (66.66%)	35 (33.33%)	0.9	2	0.6
Phase II	74 (70.47%)	31 (29.52%)			
Phase III	69 (65.71%)	36 (34.28%)			

Table 7

Longitudinal profile of 16 personality factors

Personality profile	Phase I		Phase II		Phase III		Variance	
	Mean	SD	Mean	SD	Mean	SD	I * II	I * II
Reserved v/s outgoing	5.06	1.6	5.2	1.5	4.9	1.5	.73	.31
Dull v/s bright	5.7	2.1	5.39	2.2	4.8	2.6	.15	.001
Lower v/s higher ego strength	5.66	2.4	5.75	2.3	5.97	2.3	.69	.35
Humble v/s assertive	5.41	1.9	5.55	1.4	5.60	1.5	.44	.3
Desurgency v/s surgency	4.30	1.9	4.3	1.8	4.18	1.7	.8	.5
Expedient v/s conscientious	5.86	1.9	5.7	1.9	5.49	1.9	.5	.08
Shy v/s venture some	5.95	1.8	6	1.8	5.65	1.6	.7	.07
Harria v/s premsia	5.7	1.95	5.22	1.7	5.32	2.1	.05	.2
Trusting v/s suspicious	5.89	1.8	5.76	1.8	5.59	1.7	.5	.12
Practical v/s imagination	5.09	1.68	5.35	1.7	5.49	1.6	.2	.05
Artless v/s shrewd	6.59	1.7	6.47	1.7	6.56	1.48	.5	.08
Complacent v/s worrying	5.43	1.9	5.02	1.8	5.2	2	.5	.07
Conservative v/s experimenting	4.62	1.6	4.84	1.5	5.13	1.6	.2	.01
Group adherence v/s self sufficiency	5.09	1.96	5.31	1.8	5.45	1.7	.2	.09
Low integration v/s high integration	5.81	2.1	5.74	1.96	5.86	1.9	.2	.8
Relaxed v/s tense	4.2	1.8	4.19	1.8	4.07	1.8	.9	.4

Table 8

Personality factors and academic performance in Univ I, Univ II examinations

	1 (Fail)	2 (50-60%)	3 (>=60%)	P
A ₁ R ₁	5.47 (1.95)	4.97 (1.5)	5.04 (1.4)	.5
A ₂ R ₂	5.61 (1.8)	5.15 (1.5)	5.07 (1.4)	.4
B ₁ R ₁	6.07 (2.1)	5.61 (2.1)	5.75 (2.3)	.7
B ₂ R ₂	5.39 (2.2)	5.51 (2.2)	5.14 (2.4)	.7
C ₁ R ₁	5.27 (2.6)	5.93 (2.3)	5.25 (2.5)	.3
C ₂ R ₂	5.84 (2.4)	5.88 (2.3)	5.39 (2.1)	.6
E ₁ R ₁	5.40 (1.7)	5.45 (1.9)	5.32 (1.9)	.9
E ₂ R ₂	5.89 (1.4)	5.51 (1.5)	5.43 (1.2)	.5
F ₁ R ₁	4.26 (2.2)	4.19 (1.9)	4.57 (2.0)	.6
F ₂ R ₂	4.06 (1.6)	4.44 (1.9)	4.29 (1.7)	.7
G ₁ R ₁	5.53 (2.7)	6.02 (1.9)	5.68 (1.5)	.5
G ₂ R ₂	5.56 (2)	5.60 (1.9)	5.93 (1.9)	.7
H ₁ R ₁	5.67 (1.9)	6.06 (1.7)	5.80 (2)	.7
H ₂ R ₂	5.89 (1.3)	6.03 (1.9)	6 (1.9)	.9
I ₁ R ₁	5.33 (1.9)	5.60 (1.97)	5.64 (1.8)	.8
I ₂ R ₂	5.22 (1.8)	5.29 (1.8)	5.07 (1.5)	.8
L ₁ R ₁	5.2 (2)	5.89 (1.7)	6.25 (1.7)	.1
L ₂ R ₂	5.78 (1.5)	5.76 (1.9)	5.75 (1.7)	.5
M ₁ R ₁	4.67 (2.1)	5.32 (1.7)	4.79 (1.6)	.2
M ₂ R ₂	5.94 (2)	5.37 (1.6)	4.93 (1.5)	.4
N ₁ R ₁	6.67 (1.98)	6.52 (1.7)	6.71 (1.4)	.08
N ₂ R ₂	6.39 (1.7)	6.32 (1.7)	6.82 (1.7)	.4
R ₁ O ₁	5.2 (2.1)	5.32 (1.9)	5.79 (1.9)	.5
R ₁ O ₂	4.77 (1.7)	5.05 (1.8)	5.12 (1.7)	.8
R ₁ Q ₁	5.2 (1.8)	4.61 (1.6)	4.32 (1.5)	.2
R ₁ Q ₂	5.44 (1.6)	4.79 (1.5)	4.68 (1.8)	.1
Q ₂ R ₁	5.07 (1.7)	5.21 (2.1)	4.82 (1.8)	.6
Q ₂ R ₂	6.00 (1.97)	5.00 (1.8)	5.10 (1.8)	.2
Q ₃ R ₁	5.93 (2.2)	5.73 (2.1)	5.93 (2.0)	.8
Q ₃ R ₂	5.93 (22)	5.73 (2.1)	5.93 (2.0)	.8
Q ₄ R ₁	3.33 (1.7)	4.16 (1.8)	4.75 (1.8)	.05*
Q ₄ R ₂	4.00 (1.6)	4.20 (1.9)	4.29 (1.7)	.8

described as a constantly changing environment, through which student navigates for 4-5 years, which affects the basic personality make up of the student. Studies have revealed high rates of psychological morbidity in medical students during training [5]. Physiological complaints are reported only by 11.42% of the students. There is a significant rise in the scores with time. This is in agreement with the findings reported earlier.

The percentage of students having evidence of anxiety is less (Table 4). Other studies have found that scores on anxiety rose significantly between first and second year [6], but in the present study, only 13.3% and 9% reported anxiety in first and second phase respectively. Although anxiety has been described as a major distress among medical students, it does vary with the college environment [14]. Financial burden and lack of leisure time are sources of stress for medical students. The previous study done by the authors concurs with these findings [15]. The moot question is whether this is the result of disposition of those entering medicine or it is caused by the medical socialization over the long period of years.

The present study shows relatively lesser score on depression inventory (Table 3). The scores fall within the normal limits and there is no significant increase in IInd or IIIrd phase. The students with good psychological support have less adjustment problems. Student faculty relations are maintained and recreational opportunities are provided which might have helped in emotional adjustment of the students.

On achievement motivation 87.85% of students score in average category. The decline in proportion of high

motivation group deserves exploration (Table 5). The focus on motivation traits has produced assumptions that motives are stable and certain traits are better or more legitimate than other. Iphofen [16] argues that motives can change according to different interpretations and experiences. Findings of the present study can be qualified by the assured job and secure career in the college. Longitudinal assessment on locus of control revealed powerful others having significant difference over the period of time (Table 6). This finding is in agreement with the finding of Vitalliano [14]. The proportion of the students reporting extremes of the score on all dimensions of locus of control is less (Table 6). Extremes of both internal or external control may be maladjusted [17].

Personality profile of medical students is found to be average on ego strength, assertiveness, conformity and outgoing dimensions. The other factors of their personality are trustworthiness and analytical (Table 7). Longitudinal analysis revealed changes in self-reliant dimension of 16 PF. Factor 'I' (Harria v/s Premsia) show significant change between phase I and phase II, but not in phase III. On factor 'B' (Dull v/s Bright), significant difference is noted between phases III and I. On factor 'M' unconventionality is noted to increase from phase I to phase III. Earlier work done by the authors in this area revealed similar personality profile of medical students [15]. It can be inferred that medical students are conforming, self reliant and socially precise. The low score on being conservative and relaxed are noteworthy (factors Q1 and Q4). Over satisfaction may be counter productive (Table 8). Students with low score on 'Q4' have failures in academic performance. Optimum level of anxiety is required for successful performance. The analysis of personality factors vis a vis negative and positive aspects of academic performance reveals that students with conformity and optimum level of anxiety do better in academics. External locus of control leads to conformity and has an adaptation value for medical students. This can be further enhanced for better results.

In conclusion, psychological assessment of future doctors revealed that majority of them fall within normal limits on the parameters of anxiety and depression and there is no significant change over the period of time. However there is a decline in achievement motivation, probably because of a assured job after completion of degree. Psycho-physiological State Inventory revealed covert anxiety. On assessment of locus of control there is a significant increase on 'powerful others' (PO) dimension. Those who join medical profession are conforming relaxed and practical. Personality profile

being high on 'Q4' leads to positive academic outcome. The results demonstrate that over satisfaction and relaxed attitude have poor academic outcome and optimum level of anxiety is required for better outcome.

Conflicts of Interest

None identified

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