

1 **DOI: <https://doi.org/10.47391/JPMA.562>**

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3 **Frequency of emotional disturbances among hostelites and day**
4 **scholars medical students**

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13
14 **Abstract**

15 **Objectives:** This study was aimed to determine and compare the frequency of
16 the emotional disturbances, anxiety and depression among the medical students
17 on Hospital Anxiety Depression scale (HAD) score among the hostelites and
18 day scholars.

19 **Methodology:** This cross sectional study was conducted at private medical
20 college in Faisalabad, Pakistan, from March 2019 to April 2019, comprising of
21 105 male and female students. Validated Hospital Anxiety depression scale
22 (HAD-A and HAD-D) was used to collect data from 1st year and 2nd year MBBS
23 students in order to evaluate anxiety and depression among them. Data was
24 analyzed on SPSS 21. Pearson's Chi-square was applied to compare the
25 percentages of anxious and depressed subjects among the studied group.
26 Independent sample t-test was applied for comparison of mean HAD scores
27 between hostelites and day scholars. P value ≤ 0.05 was taken as significant.

28 **Results:** There were 105 students in the study with a mean age of 19.4 ± 0.68

29 years. Overall, 82.7% students had anxiety, and 52.1% suffered from
30 depression. Average HAD –A and HAD- D scores were 11.2 ± 3.41 and $7.2 \pm$
31 3.37 respectively. Greater number of hostelites was suffering from emotional
32 disturbances as compared to day scholars. HAD –A scores was significantly
33 higher in hostelites than day scholars with P value $0.003^*(11.85 \pm 3.42$ Vs
34 $10.92 \pm 2.56)$. HAD- D scores were also higher in hostilities but difference was
35 insignificant. (7.57 ± 3.42 Vs 6.85 ± 1.58)

36 **Conclusion:** Emotional disturbance including anxiety and depression are found
37 to be highly prevalent among medical students of private medical college in
38 Faisalabad. Hostelites are more prone to anxiety and depression than day
39 scholars.

40 **Keywords:** Depression, Anxiety, HAD-A, HAD-D, Emotional disturbances,
41 Time management.

43 Introduction

44 Emotional disturbances in the form of depression, anxiety and stress are
45 emerging issues among undergraduate medical students that require early
46 intervention worldwide.¹ These problems have a high detrimental effect to
47 individual and society, which could lead to negative outcomes including
48 medical dropouts, relationship problems, impaired cognition and ability to
49 work effectively.² Majority of the young generation instead of facing and
50 combating with difficult situations are becoming rebellious and prone to commit
51 suicide.¹ Prevalence of anxiety in Pakistani medical students has been reported
52 as 44% to 74.2% by various studies.^{2,3,4} This issue should be addressed and
53 intervention taken to adjust the learning environments during different phases of
54 medical education for helping students to cope with stress and make a smooth
55 transition through medical college. Various strategies should be adopted for
56 early diagnosis and management of emotional stress before it goes to the verge
57 of extreme. Stress is defined as the body's non-specific response to demands

58 placed on it due to disturbing events in the environment. It not only destroys
59 mental health but also physical health.⁵ It can be classified as good stress and
60 the bad stress. Good stress is considered which motivate the person to do his
61 best in achieving ever best outcomes and if this good stress is not being handled
62 by the subject to attain his designed goals then it is converted into bad stress. It
63 is manifested with different features and odd behaviors, for example the
64 affected subject might try to avoid and face the situation and feel like as his
65 upcoming life is completely doomed, might lose his decision making power and
66 always upset, not enjoying simple things, becomes touchy and easily irritable.
67 Academic burden, time management and personal factors have been described
68 as the main source of stressors among medical students.¹ Strict environment of
69 medical education, difficult studies, examination fear, and financial pressure are
70 being more recognizable distressing factors and causing medical students to be
71 more inclined to emotional disorders, especially stress and depression, as
72 compared to their non-medical peers.⁶ Medical students are encouraged to spend
73 adequate time on their social and personal lives along with difficult studies and
74 emphasize the importance of health promoting coping strategies, which might
75 be helpful in overcoming stress throughout their medical education. If stress is
76 not timely diagnosed and managed, could even lead to permanent psychological
77 disorders such as anxiety and depression not only affect himself but would also
78 affect the whole community and nation.^{2,6} The day scholars live with their
79 parents, don't come across with issues such as bad food, hostel ragging and
80 homesickness. They share their problems with family members. They perform
81 much better as residential care and encouragement plays a vital role in
82 improving academic performance⁷ because of which they are mentally relaxed
83 and have less stress. On contrary to this, the hostelite (boarders) living in
84 boarding of colleges away from their homes pass through a grief of
85 homesickness and for some students it might prove to be scary to meet a whole
86 bunch of new people.⁸ Hostelite have to learn to manage their own affairs and

87 adjust to new condition of living environment without family support or
88 experience to guide them. They have to face many problems independently
89 without support of their family members. They are more prone to poor eating
90 habits, lack of sleep, or acquisition of new habits, such as smoking or drug
91 abuse. All these factors along with burden of difficult medical studies contribute
92 positively to the development of stress and anxiety and poor healthy lifestyle
93 among these students. Because of the pressure and strict study schedule, large
94 number of medical students suffers from effects of stress like anxiety and
95 suicidal thoughts. Stress leading to suicidal attempts in hostels of medical
96 colleges is continuously increasing in Pakistan, so it is imperative to highlight
97 this issue. That's why we need to evaluate stress among medical students to
98 identify students at risk of depression and anxiety for counseling them to reduce
99 depression and suicidal attacks.

100 It is imperative to address the emotional disorders among students properly
101 because it could lead to disastrous consequences if not properly redressed.
102 Internationally lot of work is being carried out effectively in order to save youth
103 so that they could get a healthy nation. However, limited work is being done
104 here in Pakistan.³ Hence, there is emergent need to explore and address to these
105 emotional disorders in students of Pakistani universities to prevent
106 psychological morbidity with undesirable impacts all through their professions
107 and lives.

108 **Objective**

- 109 • The objectives of the study were to assess the frequency of emotional
110 disturbances, depression and anxiety among medical students using
111 Hospital Anxiety and Depression (HAD) scale and to compare HAD score
112 among hostelites and day scholars.

113 **Methodology**

114 This comparative cross-sectional study was conducted during March 2019 to
115 April 2019 among the medical students of private medical college in Faisalabad.

116 Sample size was calculated by open epi sample size calculator using mean
117 difference (means were taken from previous study) with power 80 and 95%
118 confidence interval (CI).² After taking ethical approval from ethical committee
119 of the institute, 105 students including hostilities and day scholar of age ranged
120 19 to 25 years were recruited through Non probability convenience sampling
121 technique from 1st and 2nd year MBBS students. Hostelites were the students
122 staying in boarding (hostel) of the college away from their homes.⁷ After
123 college hours, they are not allowed to go to their homes or anywhere without
124 permission of administration. Day scholars were students of college who have
125 not opted for hostel facility and live in their home along with their parents with
126 good residential care.⁷ After college hours, day scholars are free to go their
127 homes. All enrolled students were briefed about the importance and objectives
128 of study and were ensured that privacy will be maintained. Unwilling students
129 were not included in the study. A self-administered standardized Hospital
130 Anxiety and Depression scale (HAD) was used to assess the degree of anxiety as
131 well as depression. HADS is a valid and authenticated screening tool that is
132 used to evaluate the emotional state of non-psychiatric subjects in outpatient
133 hospital services. It could help quickly and effectively to identify subjects that
134 show symptoms of depression or anxiety.¹ Hence it is now considered one of
135 the commonly used tools to evaluate the degree of emotional stress and anxiety
136 and is also being translated in different languages. HAD questionnaire has 14 -
137 item scale divided into two subscales, anxiety and depression, (HADS Anxiety
138 and HAD -Depression) each one comprising 7 items (depression for even items
139 and anxiety for odd ones). The items are assessed through a Likert scale,
140 ranging from 0 to 3, with the higher scores indicating more severe anxiety and
141 depression. Score of 0 to 7 indicating, no symptoms; score of 8 to 10, borderline
142 case; and score of 11 to 21 is indicating clear symptoms of depression or
143 anxiety.¹ HAD is considered to assess good psychomotor possessions with
144 Cronbach's alpha 0.83 and 0 .82 for HADS-A and HADS-D respectively.⁹ HAD

145 questionnaire were provided to the students two months prior to their final
146 Professional examinations as this period is most stressful. Students were
147 allowed to fill it by giving them proper time and privacy after taking informed
148 consent and assuring anonymity. HAD scores for anxiety and depression were
149 compared between hostelites and day scholars.

150 Inclusion criteria: Medical students of first year to final year MBBS.

151 Exclusion criteria: Students with diagnosed psychological disorder were
152 excluded.

153 Data was entered and analyzed by using SPSS 21. Pearson's Chi-square test was
154 applied to compare percentages of anxious and depressed subjects among the
155 studied group. Independent sample t-test was applied for comparison of mean
156 scores of anxiety and depression between in hostelites and day scholars. P value
157 ≤ 0.05 was taken as significant.

158

159 **Results**

160 This study comprised of 105 students (hostelites 63, 42 days scholar) with a
161 mean age of 19.4 ± 0.68 years; 21 (20.0%) were male and 84 (80%) were
162 females students. Descriptive of study population is presented in table 1.

163 Overall, 87 (83%) students had anxiety and 60 (57.1%) student had depression.

164 Average HAD -A and HAD- D scores were 11.2 ± 3.41 and 7.2 ± 3.37
165 respectively. (Table1). Table 2 is indicating that out of total anxious students,

166 85.7% were staying in hostels and 78.6% were day-scholars. Similarly Greater
167 number of hostelites was suffering from depression than day scholars (60.3%

168 Vs 52.4%) but difference was not significant. (Table 2) HAD -A scores was
169 significantly higher in hostelites than day scholars with P value 0.003^* ($11.85 \pm$

170 3.42 Vs 10.92 ± 2.56). HAD- D scores were also higher in hostelites but

171 difference was insignificant. (7.57 ± 3.42 Vs 6.85 ± 1.58) (P value 0.49)

172 (Table3). Percentages for depression were also compared among subjects

173 suffering from anxiety and those without anxiety. It was interestingly found that

174 subjects having anxiety were falling towards depressive state (P value= 0.002*)
175 (figure1).

176

177 **Discussion**

178 This study was conducted to address the emotional disturbances like stress,
179 anxiety and depression among medical students. Medical education is
180 considered to be more stressful period during which they have to cope.¹⁰
181 Medical students tend to be high-functioning and highly resilient, but
182 accumulation of many stressors leads to emotional disturbance in them. Time
183 management problems, study pressure, lack of sleep, fear of failing,
184 examinations and grades, feelings of incompetence, clinical rotations,
185 witnessing patient death for the first time were possible stressors that
186 precipitated psychological distress in medical students.^{4,11} Various previous
187 studies from different medical schools showed that being a medical student is
188 not easy, as they are under great deal of anxiety and stress not only because of
189 their massive studies and competitive environment that requires social and
190 personal sacrifice but also expectation of parents, family members and friends
191 from them.^{2,12} This all leaves a medical student with little peace of mind. It adds
192 and even the best coping mechanisms could start to fail in student with low
193 resistance to cope with simple situations.¹¹ Many introverted students did not
194 share their insecurities and anxieties with any one and resulted in disastrous
195 consequences like suicidal attacks.¹ Current study showed that 83% have
196 anxiety and 57.1 % have depression irrespective of being day-scholar or
197 hostelite. This study also revealed that majority of the students whose anxiety
198 level was replenished and saturated, and then depression started to escalate. The
199 rate of depression in this study is close to similar previous study conducted in
200 Karachi, Pakistan that reported it to be 60%, but slightly higher than Islamabad
201 based study, which documented 40% of depression in medical students
202 attending public and private medical colleges.^{13,4} Singh A et al revealed that

203 49.1% Indian medical students attending private universities in India reported
204 depression .¹⁴ Various studies have shown that prevalence of depression in
205 Pakistan as well as India is higher than other countries worldwide. This is
206 supported by our findings of higher rates of depression in our students than
207 reported by Greece and Malaysian studies. Prevalence of 10% in Greece
208 medical students was reported by Yusoff MS et al and 21.7% was documented
209 by Zaid etal among medical students attending public universities in
210 Malaysia.^{15,16} Concerning anxiety, results of the current study was closer to
211 recent past study by Rizvi etal in 2018, which reported 74.2% of anxious
212 medical students attending private and public medical colleges in Islamabad and
213 Rawalpindi, Pakistan. Past literature is showing that various researches
214 conducted in Pakistan during 2003 till 2014 have reported 40 to 47% prevalence
215 of anxiety in Pakistani medical students, this data reflected that the prevalence
216 of anxiety is increasing since 2014 till date at alarming rate and it is expected
217 to be increased in next decades worldwide.^{12, 17,18,19} Prevalence of anxiety is not
218 only increased in Pakistan but it is also increased in Malaysia. Earlier studies
219 conducted in 2004 were showing 49.1% prevalence in Malaysian medical
220 students, which increased to 65.8% till 2018 reported by recent past studies.^{10,}
221 ^{11,20} Most probable causes of increase in emotional disturbance among medical
222 students stated were highly competitive environment of the medical institutes,
223 poor coping strategies and inappropriate counseling.⁴ In comparison to present
224 study, data from many other countries showed lower prevalence of anxiety. It is
225 estimated to be 38.5% in turkey, 31.2% in British universities, 56% in India,
226 61.4% in Thailand and 65.5% reported from Greece.^{2,4,14, 20} This study also
227 revealed that enrolled participants were more hostelites than of day-scholars. In
228 current study, anxiety and depression (HAD- A and HAD–D) scores were
229 significantly higher in hostelites as compared to day-scholars. These results are
230 inconsistent with the study of Rehmani N and his colleagues.² This might be
231 explained that hostelites, living away from their families along with heavily

232 loaded curriculum, are facing multiple factors in their routine life such as social
233 relationships, peer pressure, adjusting at new place, mess issues, quality of food,
234 home sickness, problems with dealing and sharing rooms with co-workers,
235 missing family members for expressing their daily stressors, thereby lacking
236 social support that make them more vulnerable to emotional disturbances such
237 as stress, anxiety and depression posing threat to life.^{2, 14} Deficiency in both
238 mentor-mentee and health education programs have been identified as further
239 contributing factors towards emotional disturbances, which are indicators of
240 mental health.^{10, 21} Inability to detect and address these psychological disorders
241 negatively affects student's life and academic performance.²¹ As our finding is
242 very much prominent with regards to anxiety and depression in medical
243 students, therefore, as per recommendation of many authors, we also
244 recommend timely student support and counseling. In addition to this, mental
245 health based programmed must be inculcated in our culture at every level of
246 education so that sufferers could be identified in time and seek help in time
247 before committing unexpected action like suicide.

248 Study is limited to the students of one medical college and cannot be
249 generalized. It is cross sectional study, therefore, we cannot infer causal
250 association. HAD is not a diagnostic tool and is only useful for screening
251 purposes.

252

253 **Conclusion**

254 Emotional disturbance including anxiety and depression are found to be highly
255 prevalent among students of medical college in Faisalabad. Hostelites were
256 more prone for anxiety and depression than day scholars. Awareness, early
257 identification, counseling and timely management might reduce emotional
258 disturbances among the students and improve their academic performance and
259 quality of life.

260

261 **Disclaimer:** None to declare.

262 **Funding:** None to declare.

263 **Conflict of interest:** None to declare.

264

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Table 1: Demographic characteristics of Study population

N=105	Mean± SD
Age (years)	19.4± 0.687
Weight(kg)	49.8 ± 13.1
Height (m)	1.56± 0.1
Depression	7.2 ± 3.37
Anxiety	11.2±3.41
BMI	20.0± 4.42

336 SD=Standard deviation, BMI=Body mass index

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Table 2: Anxiety and Depression among Hostelites and Day-scholars

Study groups	Anxiety		Depression	
	YES N (%)	NO N (%)	YES N (%)	NO N (%)
N= 105				
Hostelites (63)	54 (85.7)	9 (14.3)	38 (60.3)	25(39.7)

Day Scholars(42)	33(78.6)	9 (21.4)	22(52.4)	19(45.2)
P value	0.34		0.37	

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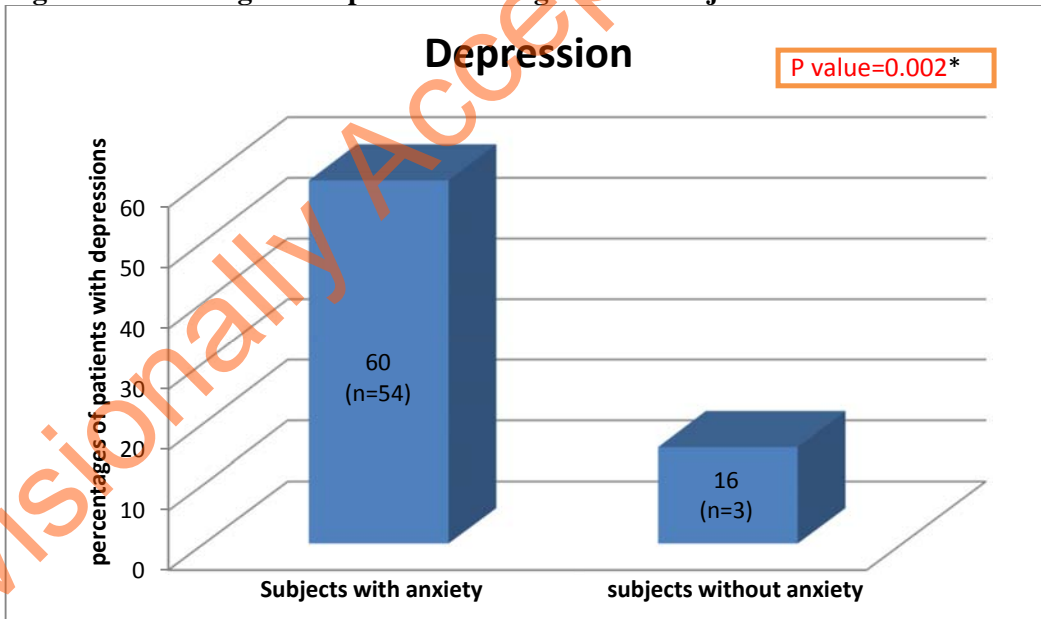
Table 3: HAD scores of anxiety and depression

Study Groups	HAD-A	HAD- D
N= 105	Mean ±SD	Mean ±SD
Hostilities (63)	11.85 ± 3.50	7.57 ± 3.42
Day-scholar (42)	10.42± 2.56	6.85± 1.59
P value	0.03*	0.49

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HAD- A=Hospital Anxiety Depression Scale for Anxiety
 HAD-D=Hospital Anxiety Depression Scale for depression.
 SD=standard deviation,
 P value ≤ 0.05 as considered significant

Figure1: Percentages of depression among anxious subjects.



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