ORIGINAL ARTICLE

STRATEGIES ADAPTED TO CURB DEPRESSION IN MEDICAL AND ENGINEERING STUDENTS AND THEIR EFFICACY: A COMPARATIVE STUDY

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Background: The most common and serious psychiatric illness that negatively affects a person's thoughts, and behaviour is depression. This study discusses the strategies that can be adapted to curb the depression between medical and engineering students of different medical and engineering colleges in Karachi, Pakistan. **Methods:** A comparative cross-sectional study was conducted at different medical and engineering colleges of Karachi. Sample size of 362 was calculated using SPSS-22. A close ended, self-administered, modified form of standardized questionnaire was used which comprised of two parts. First part had questions for the assessment of depression and second part was comprised of strategies practiced by students. Hamilton Depression Scale (HAM-D) was used in scoring the depression level in the study subjects. **Results:** In engineering and medical colleges 82.87% and 56.9% students were found depressed repeatedly. The results were significant. Out of all the strategies stated by Medical and Engineering the most effective Strategy adopted by students was listening to music which shows overall, 93 (25.8%) students listen music most of the time, 68 (18.8%) students listen to music often, 78 (21.6%) students listen to music sometime, 66 (18.3%) listen to music rarely and 57 (15.5%) listen to music almost never as a strategy to curb the depression. **Conclusion:** Depression reducing intervention needs to be encouraged in professional program and mentors for the effectual addressing and solving the problems is required in all professional programs.

Keywords: Depression, Hamilton Depression Scale (HAM-D), Student mental health

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INTRODUCTION

Depression is the most prevalent and severe psychiatric disorder that has a detrimental impact on a person's thoughts, feelings, and behaviour. This leads to low self-esteem and a diminished capacity to fully enjoy life.[1] The symptoms of depression are a lack of interest and pleasure in basic life activities (anhedonia), insomnia and even suicidal thoughts which has become a norm now a days, a standard chronic disease in many societies all over the world which can impede ordinary working, cause burdensome and depressive thinking and unfavourably influence the personal satisfaction and the quality of life.[2,3]

The average age at which depression first appears is in the 20s, and depressions are more common in women than in men.[4,5] According to one of the popular research the depression can be of two major types that include anaclitic depression, which can be due to when a person feel he is in loneliness or abandonment and introjective depression, which can be due to when a person feel he is worthless and full of failure.[6,7] According the World Health Organization (WHO) it is estimated that about 300–350 million people on planet earth suffers from depression which is one of the largest contributing markers and factors to the global disability and it is among 11th leading cause of global burden disease.[8,9]

The life of a medical and engineering student is considered among the most stressful and extremely competitive in all over the world as in general it requires a lot of efforts, practice, learning which as a whole impact the both the physical and mental state of a student. Getting through depression for a student is not easy and it can requires a lot of help from different variables.[10] The depression perceived by medical and engineering students not only affect their performance in academics but also effects psychological and physical state which increases their chances of suicides among their respective field of education.[11,12]

Main reason of depression among engineering students can be due to projects, field work and the time they need to put on studies which adds up to their hectic life, and the main reason of depression among medical students includes a burdensome syllabus which they have to cover up in a short period of time which leads up to non-favourable mental and physical health.[13,14] A study found that roughly 56.9% of medical students and 82.87% of engineering students experience recurrent depression. This study also demonstrates that, in Pakistan, depression was more common among first-year medical students and became less so as they advanced to the following year; in contrast, among engineering students, depression was

more common among final-year students relative to prior years.

Since depression is a severe disorder that should not be disregarded, numerous research have been conducted to determine the cause of depression in undergraduate students as well as coping mechanisms that can be used to lessen the likelihood that anything untoward would occur in their lives.[15] Indeed, depression in college students and how to eliminate it from their lives is a topic of considerable interest to researchers. However, as numerous studies have demonstrated, there are no specific solutions that are effective for the majority of students.[16,17]

Finding the best ways to reduce depression among medical and engineering undergraduates, as well as its benefits and drawbacks, and what the relevant authorities can do about it, is our goal. Research indicates that students turned to substances like smoking, drugs, music, and other things in order to find relief from depression. This study aims to explore tactics that medical and engineering students in several medical and engineering colleges in Karachi, Pakistan, might use to combat depression.

METHODOLOGY

After receiving permission from United Medical and Dental College, Karachi, this comparative cross-sectional study was carried out on a random sample of medical and engineering colleges of Karachi. A sample size of 362 individuals was determined using SPSS-22 to investigate the strategies employed to reduce depression. The sample size was split equally between the two groups, with 181 in each.

The study employed a self-administered, closed-ended, modified form of a standardized questionnaire that was divided into two sections: the first part assessed depression, while the second part covered the techniques students used and the results they achieved. The Hamilton Depression Rating Scale (HAM-D) was utilized to measure this goal, and it has been tested and validated in multiple researches. A group of data collectors collected the data. Male and female undergraduate engineering and medical students between the ages of 18 and 30 met the inclusion criteria for this survey. Students with any chronic, life-threatening illness, psychiatric illnesses, histories of psychological disorders in their families, or refusals to provide written consent were among the exclusion criteria for this study.

Data was fed into and analysed using SPSS-22. Chi-square test was applied. Data is presented using descriptive statistic in the form of frequencies and percentage for qualitative variables. All testing was held at 95% confidence level, and $p<0.05$ was considered as significant for the strategies practiced by students.

RESULTS

One hundred eighty-one (181) medical students made up of 65 male and 116 female students, compared to 107 male and 74 female engineering students were included in the study. Among engineering students, 181 were single, compared to 180 students in medicine, and one student was married. Muslims dominated both engineering (181) and medicine (177).

First, second, third, fourth, and final year professional students were 23, 19, 35, 80, and 24 in medical college, respectively. First, second, third, and fourth professional year students were, in order, 60, 37, 38, and 46 in the engineering college. While all 181 engineering students had semester system curriculum, 125 medical students had yearly system curriculum and 56 had semester system curriculum. For medical students, it was 21.81±2.04, while for engineering students, it was 20.40±1.523. In the medical field, 43 students ranged in age from 17 to 20, 130 from 21 to 24, and 8 were older than 25. Of them, 102 were between the ages of 17 and 20, and 79 were between the ages of 21 and 24.

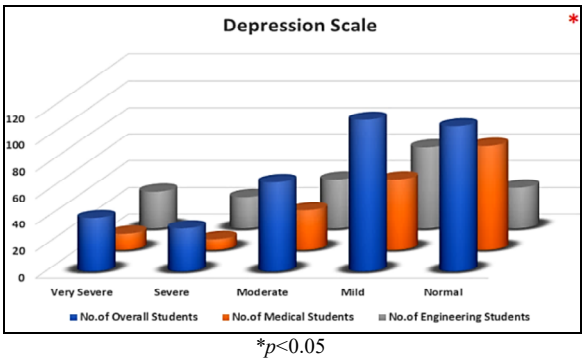
Students considered normal overall were 30.1%, and 31.5% had mild depression, 67 (18.5%) had moderate depression, 32 (8.8%) had severe depression, and 40 (11.0%) had extremely severe depression. Of the 181 medical students, 78 (43.1%) were normal, 53 (29.3%) people reported having mild depression, 16.6% reported having moderate depression, 6.6% reported having severe depression. Out of the 181 engineering students, 17.1% had 31 normal students, 33.7% had 61 mildly depressed students, 20.4% had 37 moderately depressed students, 13.3% had 24 severe depressed students, and 15.5% had 28 seriously depressed students (Figure-1). With a $p<0.05$, the outcome was statistically significant.

As a way to combat depression, 93 (25.8%) students listen to music most of the time, 68 (18.8%) students listen to music frequently, 78 (21.6%) students listen to music occasionally, 66 (18.3%) students listen to music infrequently, and 57 (15.5%) students listen to music hardly at all. Of the 181 medical students, 33 (18.2%) listen to music most of the time, 30 (16.2%) listen frequently, 41 (22.7%) listen occasionally, 48 (26.5%) listen infrequently, and 29 (16.0%) listen nearly never as a coping mechanism for depression. Out of the 181 Engineering students, 60 (33.3%) listen to music most of the time, 38 (21.1%) listen frequently, 37 (20.6%) listen occasionally, 18 (10.0%) listen infrequently, and 28 (15.4%) listen virtually never as a coping mechanism for depression (Figure-2). These students use music as a coping mechanism for depression. The results were statistically highly significant ($p<0.05$).

In total, 51 (14.1%) students used yoga, exercise, and jogging frequently, 47 (13.0%) students used yoga, 64 (17.7%) students used yoga, exercise, and jogging occasionally, 89 (24.6%) students used yoga, exercise, and jogging infrequently, and 111 (30.7%) students used yoga, exercise, and jogging almost never as a depression-reduction tactic. Out of the 181 medical students, 24 (13.3%) exercised, jogged, and did yoga frequently, 24 (13.3%) jogged, exercised, and did yoga sometimes, 34 (18.8%) jogged, exercised, and did yoga occasionally, 50 (27.6%) jogged, exercised, and did yoga almost never, and 49 (27.1%) jogged, exercised, and did yoga almost never as a depression-reduction tactic. As a way to combat depression, 181 engineering students were divided into 27 (14.9%) who exercised, jogged, and practiced yoga most of the time, 23 (12.7%) who did so frequently, 30 (16.6%) who did so occasionally, 39 (21.5%) who did so infrequently, and 62 (34.3%) who did so almost never (Figure-3). With a p=0.504, the outcome was statistically not significant.

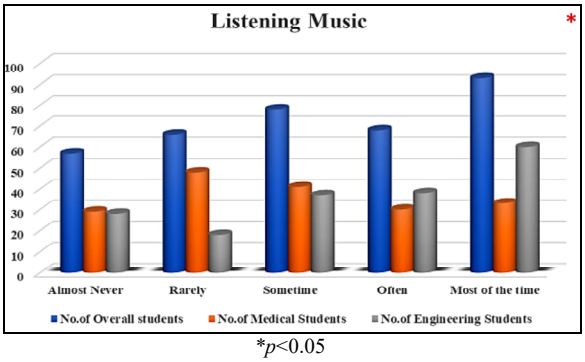
As a way to combat depression, 17 (4.7%) students used recreational drugs most of the time, 12 (3.3%) students used them frequently, 27 (7.5%) students used them occasionally, 29 (8.0%) students used them infrequently, and 276 (76.2%) students used them hardly at all. With regard to using drugs for recreational purposes to combat depression, out of 181 medical students, 7 (3.9%) used them frequently, 3 (1.7%) frequently, 9 (5.0%) infrequently, 19 (10.5%) infrequently, and 143 (79.0%) hardly ever. Of the 181 Engineering students, 10 (5.5%) used drugs recreationally frequently, 9 (5.0%) used them frequently, 18 (9.9%) used them occasionally, 10 (5.5%) used them infrequently, and 134 (74.0%) used them hardly at all as a coping mechanism for their depression (Figure-4). With a p=0.61, the outcome was statistically not significant.

In all, 55 students (15.2%) overeat most of the time, 45 (12.4%) students overeat often, and 104 (28.7%) overeat sometimes, 89 (24.6%) overeat rarely, and 68 (18.8%) overeat almost never as a depressive-reduction tactic. Among the 181 medical students, 21 (11.6%) overeat most of the time, 22 (12.2%) overeat often, 54 (29.8% overeat sometime, 53 (29.3%) overeats rarely, and 31 (17.1%) almost never used it as a depression coping method. Among 181 engineering students 34 (18.8%) overeat most of the time, and 33 (12.7%) overeat often, 50 (27.6%) students overeat some times, 36 (19.9%) rarely overeat, and 38 (28.4%) students almost never overeat in an attempt to combat depression. (Figure-5). With a p=0.155, the outcome was statistically not significant.



*p<0.05

Figure-1: Comparison of level of depression among medical and engineering students



*p<0.05

Figure-2: Comparison of listening music to curb depression among medical and engineering students

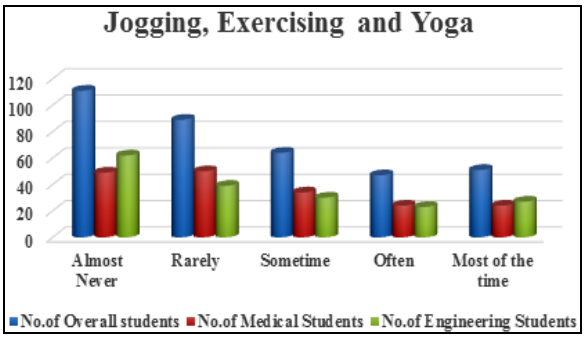


Figure-3: Comparison of jogging, exercising and yoga to curb depression among medical and engineering students

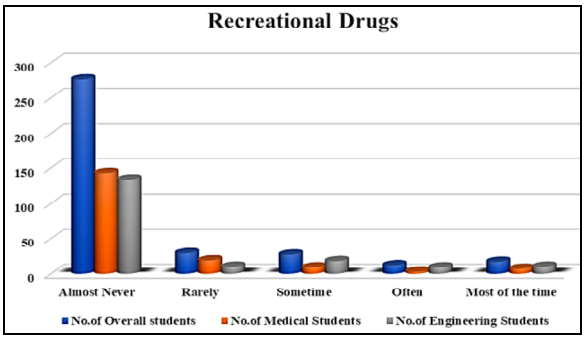


Figure-4: Recreational drugs usage to curb depression among medical and engineering students

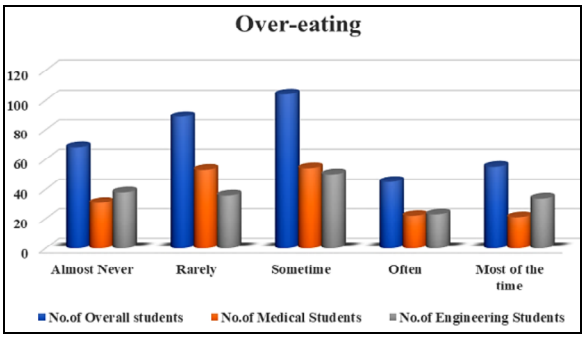


Figure-5: Comparison of over-eating to curb depression among medical and engineering students

DISCUSSION

During the identity-forming stage of young adulthood, people go through emotional, behavioural, sexual, academic, and physical changes in addition to a range of problems in other areas of their lives. Young medical students' mental health has been the subject of several studies because medical school is thought to be a period of severe psychological anguish for aspiring doctors. The mental and emotional well-being of medical students may be adversely affected by certain training components inadvertently.[18] For the same reason that it ranks 12th in the world.

Karachi is the most populated city in Pakistan. Because the city is thought to be home to some of the best medical and engineering colleges, a random selection of engineering and medical colleges was used in a comparative cross-sectional study to measure depression in 362 subjects selected for the article's first section using the Hamilton Depression Rating Scale (HAM-D). The chosen participants consisted of male and female undergraduate students, aged 18–30, from randomly selected engineering and medical colleges. Students who did not have any psychological disorder, no family history of psychological disorders, and who chose to submit a written response were included in the study.

The second section of the study focuses on depression coping mechanisms. It examines the effects of music and exercise, for example, on students using these coping mechanisms. It also compares the students who engage in these coping mechanisms to those who do not and are solely linked to the studies. The existing background literature on depression indicates that it affects students in all academic fields, but fewer studies have been done to emphasize its prevalence among engineering and medical college students in Karachi and to identify coping mechanisms associated with it. University students are more likely to experience depression because they have to deal with a lot of obstacles, such as independent living, stress from school, and job planning. Major Depressive Disorder is one of the most common and incapacitating forms of depression that have a significant negative influence on both individuals and society. However, the focus of this study was on the various methods they employ to combat sadness, such as yoga, recreational drugs, overindulging in food, and music listening. Several yoga schools were used in the US between 2011 and 2016, with Hatha yoga being the most popular style. A brief study of yoga's effect on depression revealed that the practice was effective in reducing depression, but it was discovered that yoga was not very important in curing depression.[19,20] Overeating as a coping mechanism was examined in this study as well; occasionally, overeating can be brought on by depression. People with binge eating disorders struggle with anxiety or hopelessness, according to the Anxiety and Depression Association of America.[21,22] This study found that binge eating doesn't lessen depression.

According to our calculations, listening to music was the most successful strategy that students used out of all those mentioned by the medical and engineering departments. This means that, on average, 93 students, or 25.8% of the total, listen to music most of the time. A wide range of research fields have produced compelling evidence on the role that music plays in hedonic regulation and emotion evocation, and that people's everyday engagement in musical activities is primarily motivated by these affective experiences.[23,24] In May 2019, a pilot study showed that people with severe depressive disorder may benefit from a music-based treatment that combines rhythmic sensory stimulation and music listening to lessen their symptoms of depression and related anxiety. Twenty people with formal diagnoses of Major Depressive Disorder (11 females and 8 males; ages 26 to 65) took part in a five-week music listening intervention. Accordingly, the study's findings indicated those baseline measurements of depression and its related symptoms, including anhedonia, quality of life, and sleep, had significantly changed.[25]

CONCLUSION

While listening to music may be helpful in managing depression, other depression-relieving techniques should also be taken into account.

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NAS: Concept of study, data collection, manuscript writing
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MA: Concept of study, abstract writing and critical review
SHA: Data analysis and interpretation
MUR: Critical review and manuscript writing
RA: Critical review and manuscript writing

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