

CASE STUDY

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Prevalence of Depression and its Association with Cigarette Smoking among Undergraduate Students; A Cross-Sectional Study from Karachi.

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Abstract

Introduction: University environment recognized as stressful and quiet often has a negative effect on student's life. Several studies indicate that there is an increased rate of mental health disorders like depression among university students around the world. There are many studies conducted to find the prevalence of depression among medical students in different cities of Pakistan. However, very few studies have been conducted to find the frequency of depression among non-medical undergraduate students of Karachi. Therefore we conducted this study to find the frequency of depression and its association with smoking habit among undergraduate students.

Materials and methods: This was a cross-sectional study conducted on the male students studying at the University of Karachi. A self-administered questionnaire having two parts was used to collect information from the participants. The first part was used to collect patients demographics and second part was used to assess depression. Data was analyzed using IBM SPSS V.20.

Results: The frequency of depression among the study participants was found to be 80.5% (305). Among the study population 191(50.4%) were smokers and 188(49.6%) were non-smokers. Depression was observed in an overwhelming number of students who were smokers 168(87.9%). It was found that majority 229(60.4%) of the students did not had suicidal thoughts.

Conclusion: Our study found a very high frequency of depression among university students. It also demonstrated an association between smoking and depression. We also found that the burden of smoking among students was significant.

Keywords: Depression, Cigarette Smoking, Undergraduate students.

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1 | INTRODUCTION:

According to WHO depression is a common mental disorder characterized by persistent sadness and a loss of interest in activities that you normally enjoy accompanied by an inability to carry out daily activities, for at least two weeks (1). Several studies indicate that there is an increased rate of mental health disorders like depression among university students around the world reducing their capability of taking care themselves in coping with daily life demands (2, 3). Signs and symptoms that a student may experience in depression include continuous low mood or sadness, feeling hopeless and helpless, having low self-esteem, feeling tearful, guilt-ridden, irritable and intolerant of others, having no motivation or interest in things, finding it difficult to make decisions, not getting any enjoyment out of life, feeling anxious, worried and having suicidal thoughts (4). University environment recognized as stressful and quiet often has a negative effect on student's life including physical health, mental health, academic performance and psychosocial well-being (2). Undergraduate students are a special group of people that are enduring an important transient life stage from adolescent to adulthood and most mental disorder have their onset during this age. In this crucial stage of life, they probably face one of the most stressful time of their life due to multiple reasons like accommodation and environmental changes, being away from home for the first time, new social contacts, taking responsibility for their own life, academic pressure, financial concern and sleep deprivation (5). Co-occurrence of tobacco use and depression has long been a major concern because of the substantially increased risk to health (6). Many studies have helped to understand the relationship between smoking and depression (7–9). Some studies have shown that people with mental disorder were twice as likely to smoke compared to general population (10, 11). Several hypotheses have been put forward to explain the possible mechanisms underlying the association between smoking and depression. The "self-medication" hypothesis suggests that depression may lead to smoking because people smoke to relieve symptoms of depression (12–15). A study conducted on undergraduate students

in Karachi reported that 28.7% of the students were severely depressed, 33.5% were moderately depressed and 22.7% were not depressed (15). Also there are many studies conducted to find the prevalence of depression among medical students in different cities of Pakistan (16–21). However, very few studies have been conducted to find the frequency of depression among non-medical undergraduate students of Karachi. All the studies done previously in this regard lacked any information regarding association of smoking with depression. Therefore we conducted this study to find the frequency of depression and its association with smoking habit among undergraduate students.

MATERIAL AND METHADODOLOGY:

This was a cross-sectional study conducted on undergraduate students studying at the University of Karachi. The study was conducted in a period of 1 month in October, 2018. Non-probability convenience sampling technique was used. All male undergraduate students studying at University of Karachi from all departments were included. All those who were not willing to participate were excluded. The data was collected through a self-administered questionnaire, the background and purpose of study was explained to all participants and a written consent was obtained from every participant prior to study. The questionnaire comprised of two parts, the first part included patients demographics and smoking habits such as since how long they have been smoking, how many cigarettes per day they smoke etc. The second part was used to evaluate depression in participants by using Hamilton depression rating scale (6, 22). Hamilton depression rating scale is a 17 itemed self-rated questionnaire which assess level of depression. A score of 0-7 is generally normal, a score of 8-13 represents mild depression, a score of 14-18 represents moderate depression, severe de-

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pression was indicated by a score of 19-22 and a score above 22 indicates very severe depression. A sample size of 379 participants was calculated with the confidence interval 95% and a margin of error of 5%. The participation of students was voluntary, all ethical considerations were observed and the study was conducted in accordance with the declaration of Helsinki. The collected data was analyzed using IBM SPSS V 23.0. Descriptive analysis was performed. All categorical data was presented in percentages and all quantitative data was presented in mean and standard deviation.

2 | RESULTS:

A total of 379 male undergraduate students participated in the study. The frequency of depression among the study participants was found to be 80.5% (305). On analysis of various depression levels prevalent in students as measured by Hamilton depression score, it was observed that 81(21.4%) students had mild depression, 70(18.5%) had moderate depression, severe depression was seen in 55(14.5%) students, very severe depression was observed in 99(26.1%) students and the rest 74(19.5%) did not had depression. Among the study population 191(50.4%) were smokers and 188(49.6%) were non-smokers. Depression was observed in an overwhelming number of students who were smokers 168(87.9%) and only 23(12.1%) were not depressed. On the other hand among non-cigarette smokers 137(72.8%) had depression and the rest 51(27.1%) did not had depression. Prevalence of suicidal thoughts was also assessed and it was found that majority 229(60.4%) of the students did not had suicidal thoughts. Among those who had suicidal thoughts majority had some degree of depression see **table 1**. Interestingly, 59(49.1%) of the students with severe depression had suicidal thoughts and apart from those with suicidal thoughts 6(6.1%) had even attempted suicide.

Table 1; Suicidal ideation among participants with varying levels of depression

Hamilton depression scale	Absent N (%)	Feels life is not worth living N (%)	Wishes he/she were death N (%)	Ideas/gestures of suicide N (%)	Attempts at suicide N (%)
Normal	63(85.1)	10(13.5)	1(1.4)	0(0)	0(0)
Mild	67(82.7)	11(13.6)	2(2.5)	0(0)	1(1.2)
Moderate	39(55.7)	23(32.8)	5(7.1)	1(1.4)	2(2.8)
Severe	26(47.3)	19(34.5)	10(18.2)	0(0)	0(0)
Very severe	34(34.3)	31(31.3)	18(18.2)	10(10.1)	6(6.0)

3 | DISCUSSION:

This observational study revealed a high frequency of depression among male undergraduate students of the University of Karachi. The estimated frequency of depression in our study participants was 80.5% which is comparable to a previous study conducted in Karachi which reported depression in 84.9% of the study population (15). This increased frequency of depression indicates a declining psychological health in our students which may impair their behavior and diminish learning. The literature search done revealed that most of the studies regarding prevalence of depression were done on medical students pointing towards the thinking that medical students suffer from anxiety, stress and depression more than non-medical undergraduate students. Our study on contrary found it to be other way around and students of non-medical undergraduate courses also seemed to possess different levels of depressive symptoms, which shows that students in all undergraduate programs undergoes some sort of stress and depression during their course of studies. The frequency of depression (80.5%) reported in our study participants is much higher than reported in other studies conducted previously conducted on medical students (15–20). This finding suggests that more work should be done on non-medical students to assess their mental health and take measures to improve it.

The literature review done proposed smoking to be significantly related to depression, but it could not find a causal relation between the two conditions because many studies did not use validated instruments of depression and did not take into account plausible confounding variables. Hence, the relationship may be spurious (23–26).

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Our study also found positive association of cigarette smoking and depression but being a cross sectional study it lacks to find out di-rection of association between depression and smoking. Suicidal ideation was also a major concern of our study. Evaluated from one of questions of our scale it was found that 39.57% students were having suicidal thoughts and additional 2.4% Students even made attempts at suicide. Suicidal ideation was more prevalent in students with depression as 42.6% of participants with depression had suicidal ideation compared to only 14.9% of students without depression. Our results are similar to the previous work done by Rehman et al (27) who also found depression to be significantly associated with suicidal thoughts. Because undergraduate life is a breeding ground for risk factors associated with depression and suicidal ideation among students, more should be done to assess and address screening and treatment methods available for students suffering from mental health issues.

4 | CONCLUSION:

The research study concluded that 80.5% of the male students of the University of Karachi are suffering from mild to very severe depression. The result also showed that there was quite a heavy burden of smoking; more than half of the students were smokers. There was also a significant association between depression and smoking. The results also showed that there was increasing incidence of suicidal thoughts among those who were depressed.

5 | LIMITATIONS:

As this was a single centre study and only the male students were included, it cannot be generalized to all the students. Furthermore, convenience sampling and small sample size as compared to the total number of students are other limitations. The study was also limited in specifying the cause-effect association between depression and cigarette smoking.

RECOMMENDATIONS:

Promotion of mental health and awareness related to depression should prevail among the individuals. Everyone should be encouraged to consult an

authorized person if they have mental health issue. Students should be made aware of adverse effects of smoking and the risk of cancer and other disorders. Educational institutions should pay more attention towards mental health of the students along with academics.

REFERENCES

1. WHO.int [Internet] Depression; 2021 Sep 21 [cited on 2022 Feb 1]. Available from: <https://www.who.int/news-room/fact-sheets/detail/depression>. ;.
2. Bayram N, Bilgel N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Soc Psychiatry Psychiatr Epidemiol*. 2008;43(8):667–672.
3. Reavley N, Jorm AF. Prevention and early intervention to improve mental health in higher education students: a review. *Early Interv Psychiatry*. 2010;4(2):132–142.
4. National Institute of Mental Health [Internet]. Depression; 2018 Feb [cited on 2022 Feb 1]. Available from: <https://www.nimh.nih.gov/health/topics/depression>. <https://www.nhs.uk/conditions/clinical-depression/symptoms/>;
5. Buchanan J. Prevention of depression in the college student population: a review of the literature. *Arch Psychiatr Nurs*. 2012;26(1):21–42.
6. Brown PJ, Wolfe J. Substance abuse and post-traumatic stress disorder co-morbidity. *Drug Alcohol Depend* 1994;35: 51-59. Available from; doi:10.1016/0376- 8716(94)90110-4.;
7. Kalman D, Morissette SB, George TP. Co-morbidity of smoking in patients with psychiatric and substance use disorders. *Am J Addict*. 2005;14:106–123.
8. Lasser K, Boyd J, Woolhandler S, Himmelstein DU, McCormick D, Bor DH. Smoking and mental illness: A population-based prevalence study. *JAMA*. 2000;284.

9. Olivier D, Lubman DI, Fraser R. Tobacco smoking within psychiatric inpatient settings: A biopsychosocial perspective. *Aust N Z J Psychiatry*. 2008;41:572–580.
10. Grant BF, Hasin DS, Chou SP, Stinson FS, Dawson DA. Nicotine dependence and psychiatric disorders in the United States. Results from the national epidemiologic survey on alcohol and related conditions. *Arch Gen Psychiatry*. 2004;61:1107–1115.
11. Glassman AH, Helzer JE, Covey LS, Cottler LB, Stetner F, Tipp JE, et al. Smoking, smoking cessation, and major depression. *JAMA*. 1990;264(12):1546–1549.
12. Cox LS, Patten CA, Krahn LE, Hurt RD, Croghan IT, Wolter TD, et al. The effect of nicotine patch therapy on depression in non-smokers: a preliminary study. *J Addict Dis*. 2003;22(4):75–85.
13. Cox LS, Patten CA, Niaura RS, Decker PA, Rigotti N, Sachs DP, et al. Efficacy of bupropion for relapse prevention in smokers with and without a past history of major depression. *J Gen Intern Med*. 2004;19(8):828–834.
14. World Health Organization. The World health report: 2001 : Mental health : new understanding, new hope [Internet] 2001 [cited on 2021 Nov] <https://apps.who.int/iris/handle/10665/42390>;
15. Prevalence of depression in university students belonging to different socioeconomic status. *J Postgrad Med*. 2015;29(3):156–165.
16. Bukhari SR, Saba F; 2017.
17. Shams-Eldin AA, Hassan H, Elkhar OA, Amer S, Kasim K. Prevalence of Depression among Medical Students at Al-Azhar University: A Cross Sectional Study. *Al-Azhar Med J*. 2017;48(1):88–99.
18. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc*. 2006;56(12):583–586.
19. Jadoon NA, Yaqoob R, Raza A, Shehzad MA, Zeshan SC. Anxiety and depression among medical students: a cross-sectional study. *J Pak Med Assoc*. 2010;60(8):699–702.
20. Inam SN, Saqib A, Alam E. Prevalence of anxiety and depression among medical students of private university. *J Pak Med Assoc*. 2003;53(2):44–47.
21. Deepak P, Usmani UN, Washdev W, Mirza D, Naz F, Das F, et al. Prevalence of Depression and Anxiety Among Undergraduate Medical Students In A Government Medical College Of Karachi. *J Postgrad Med*. 2017;31(3):281–286.
22. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960;23:56–62.
23. Morrell HE, Cohen LM, Mcchague DE. Depression vulnerability predicts cigarette smoking among college students: Gender and negative reinforcement expectancies as contributing factors. *Addict Behav*. 2010;35(6):607–618.
24. Schleicher HE, Harris KJ, Catley D, Nazir N. The role of depression and negative affect regulation expectancies in tobacco smoking among college students. *J Am Coll Health*. 2009;57(5):507–519.
25. Vieira F, Muraro AP, Rodrigues P, Sichieri R, Pereira RA, Ferreira MG. Lifestyle-related behaviors and depressive symptoms in college students. *Cad Saude Publica*. 2021;37(10).
26. Ramón-Arбуés E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. The Prevalence of Depression, Anxiety and Stress and Their Associated Factors in College Students. *Int J Environ Res Public Health*. 2019;17.
27. Rahman ME, Islam M, Mamun MA, Moona-jilin MS, Yi S. Prevalence and Factors Associated with Suicidal Ideation Among University Students in Bangladesh. *Arch Suicide Res*. 2020;18:1–10.

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