Level of Stress and its Causes in Indian Engineering Colleges and in Different Professional Colleges Belonging to One of the Universities in the Kingdom of Saudi Arabia, Compared to Control

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ABSTRACT

BACKGROUND

Stress in life can deteriorate the physical and mental health of a person. Stress is higher among medical college students. The present study was undertaken to estimate the prevalence and causes of stress in different professions, in different countries, and different sexes to compare with the control and suggest possible solutions for the same in the future.

METHODS

A cross-sectional study was undertaken among different professional college students (PCS) (Medical, Engineering, Dental, Pharmacy, and Nursing) at a randomly selected King Faisal University in Saudi Arabia with control from the same university. A similar study was conducted at one rural engineering college and one urban engineering college in India. The level of stress was assessed using the perceived stress scale (1983). Data was collected, tabulated, and analyzed using Excel and SPSS software. Complete data was available from 426 PCS at KFU, including 120 students from rural engineering colleges in India and 31 students from urban engineering colleges in India. A total of 60 controls were taken from non-professional colleges in SA.

RESULTS

The overall prevalence of stress was high in all PCS, and it varied from 65.33% to 87.10% in different PCS. The causes of stress were a vast and difficult syllabus, pattern of exams, lack of counselling and guidance, fewer co-curricular activities, etc. Stress in nonprofessional control was 30.00%.

CONCLUSIONS

The incidence of stress is more in different professional college students irrespective of colleges, countries and sex compared to control. The causes of stress among all these students are similar. So the planning and managements for professional colleges must take it seriously. These issues can be solved by providing more teaching and learning facilities, creating a relaxing atmosphere within the college, changing the patterns of examinations, regular counselling, inclusion of recreations like cultural activities, educational tours, music, sports, etc. along with the curriculum. All these things might create more and more healthy and educated professionals to serve our society.

KEY WORDS

Level of Stress, Professional Colleges, Universities, India, Saudi Arabia.

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DOI: 10.14260/jemds.v13i2.552

How to Cite This Article:
Kumar SSP, Mannil A, Gangadhar S, et al. Level of stress and its causes in Indian engineering colleges and in different professional colleges belonging to one of the universities in the Kingdom of Saudi Arabia, compared to control. J Evolution Med Dent Sci 2024;13(02):30-35, DOI: 10.14260/jemds.v13i2.552

Submission 22-01-2024,
Peer Review 30-01-2024,
Acceptance 15-02-2024,
Published 29-02-2024.

BACKGROUND

Once India's ex-president, Dr. A.P.J. Abdul Kalam, asked, 'Can we make an education system that will retain smiles on the faces of the students throughout the period of education?' According to WHO reports and many other studies, medical students are more susceptible to stress. Their incidence is studied extensively.[1-6]

Many authors have studied the causes of stress. Stress in education is due to traditional parameters of academic assessment and evaluation, the fear of forgetting, the fear of competition, and above all, the fear of being branded as a failure. They suggest even some changes in the exam systems, etc., to reduce stress.[7-12] Stress and its adverse effects affect both male and female PCS.[13] As per the studies, causes of stress in medical colleges are a vast syllabus, frequent examinations, less available time for studies, less time for relaxation, and fewer co-curricular activities. Other causes are financial problems, language problems, transportation, food, etc.[13-16]

Stress upsets an individual both physically and mentally, as it reduces performance and causes fear, anxiety, guilt, burnout, suicidal attempts, and even death. Health problems related to stress are angina, heart attack, asthma, migraine, alopecia, peptic ulcers, etc.[17-20] To overcome stress, people may turn to toxic substances like tobacco, alcohol, drugs, etc., which may further deteriorate their existing problems.[21-32] Many educational experts have given suggestions to reduce the same.

So many studies have been conducted to check for the level of stress in medical students, and precautions have been taken for the same.[33-35] However, comparatively less importance has been given to stress among other professional college students (PCS). The objective of the present study is to know the level of stress and its effects on different professional college students (PCS) like dental (Den), engineering (Eng), nursing (Nur), and pharmacy (Phr) students, including Medical (Med) college students. These studies on PCS can help the administrators plan their curriculum, study atmosphere, etc. for the better future.[36-38]

METHODS

This present study is a self-rated cross-sectional study based on the structured questionnaire created by us for analysis. This study was conducted in different professional colleges (College of medicine, pharmacy, dentistry, and nursing) at King Faisal University (KFU), Al-Ahsa Kingdom of Saudi Arabia, and two engineering colleges in India.

Data was collected two months before exams. The ethical committee granted them the initial approval and permission. Students from the college of medicine (MBBS first-year to final-year students), students from the dental, engineering, nursing, pharmacy, arts, and education colleges of KFU, one rural engineering college, and one urban engineering college from India had enrolled. The purpose and method of study were explained to all the PCS and controls. Informed consent was also obtained from the students. Students and control opinions were taken from a self-structured questionnaire in hard copy. The level of stress was assessed using a perceived stress scale developed in 1983. A score of 14 to 26 was considered moderate stress, and a score of 27 to 40 was considered severe stress.[39]

The controls were selected randomly from the college of arts and education at KFU, Saudi Arabia. All of them were male students of similar age to professional college students. The purpose of the study was explained to the controls to understand the subject of the study. Only 60 completely filled questionnaires were selected.

The questionnaire had three parts. The first part was about the sociodemographic and academic details of the participants. The second part included presence and the level of stress. The third part was about the different factors responsible for the same. Students and control were instructed that they could select more than one reason for their problems.

Inclusion Criteria

The students from two Indian engineering colleges and different professional colleges of the university in the Kingdom of Saudi Arabia, candidates who were willing and showing interest to participate and completely filled out questionnaires were included for the study.

Exclusion Criteria

Candidates who were unwilling or not showing interest and had incompletely filled out questionnaires were excluded from the study.

Procedure

The questionnaire prepared was made into hard copies and distributed to different college students after explaining the subject. Sufficient time was given to the student to think and answer them. After that, we collected the filled-out forms and made a detailed analysis of them.

Statistical Analysis

In the present study, the data was collected, tabulated, and analyzed using SPSS from Windows version 10.5.

RESULTS

Our objective was to know the prevalence of stress and its causes in different PCS compared to the medical college and control. We were able to get complete information from a total of 426 out of 800 students from KFU of SA, 120 out of 150 students from a rural engineering college, and 31 out of 100 students from an urban engineering college in India. For the control, we got 60 out of 100 non-PCS from KFU of SA.

In Table 1, the overall prevalence of stress compared to control is summarized. The levels of stress experienced by medical college students at KFU studying in different years are given in Table 2. The most common causes for the same, both in percentage and in numbers, are given in Table 3.

As per our observation, stress was higher in medical colleges (71.79%) than control (30.00%). In other professional colleges at the same university, there was also a

similar situation (dental (72.72%), nursing (71.42%), engineering (70.00%), and pharmacy (69.39%). Stress was greater than control in all the PCS of the same university, KFU, and their average is 71.36%. (Table 1)

In India, the level of stress in the PCS of urban engineering colleges is 87.10%, and in rural engineering colleges, it is 61.67%. It indicates that the level of stress is higher even in engineering colleges in different countries at different universities (Graph 2). One more observation is that the level of stress is higher in urban colleges (87.10%) than in rural engineering colleges (61.67%) in Indian PCS.

	To Participants	Sev, %, and Num	Mod % and Num	To% & Num
To Med-M	199	35.18% (070)	30.15% (060)	65.33% (130)
Med-F	074	47.30% (035)	41.89% (031)	89.19% (066)
Med M+F	273	38.46% (105)	33.33% (091)	71.79% (196)
Den-M	022	27.27% (006)	45.45% (010)	72.72% (016)
Nur-F	042	35.71% (015)	35.71% (015)	71.43% (030)
Eng-M	040	22.50% (009)	47.50% (019)	70.00% (028)
Phr- M	049	59.18% (029)	10.20% (005)	69.39% (034)
To SA-F	116	43.10% (050)	39.66% (046)	82.76% (096)
To SA-M	310	36.77% (114)	30.32% (094)	67.10% (208)
To SA M+F	426	38.50% (164)	32.86% (140)	71.36% (304)
Eng-Ind Ru	120	25.83% (031)	35.83% (043)	61.67% (074)
Eng-Ind Ur	031	48.39% (015)	38.71% (012)	87.10% (027)
To: Ind	151	30.465 (046)	36.42 (055)	66. 88% (101)
Control	060	13.33% (008)	16.67% (010)	30.00% (018)

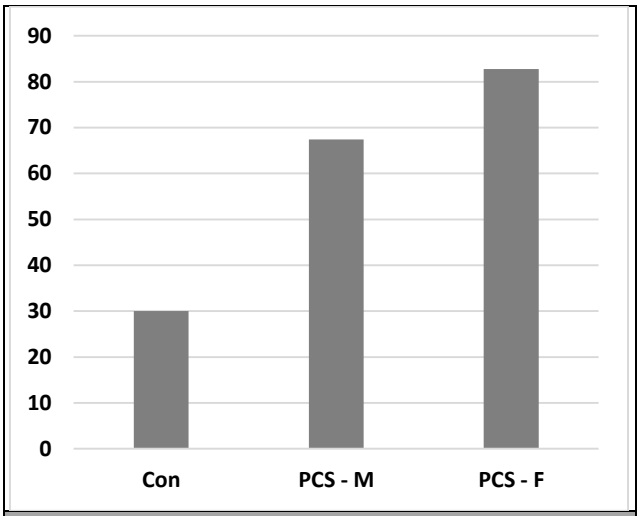
Table 1. Level of stress in different PCS of SA, Ind with control from non-PCS Note: Compared to control, the level of stress is higher in all PCS (in different PCS of SA, in both rural and urban engineering colleges of India, in both M and F)

The MBBS students studying in various years in SA demonstrate that across all five years, the stress level has been higher than control. Among them, the level of stress was highest in 3rd year students (83.33%) and lowest in 2nd year students (58.33%). (Table 2)

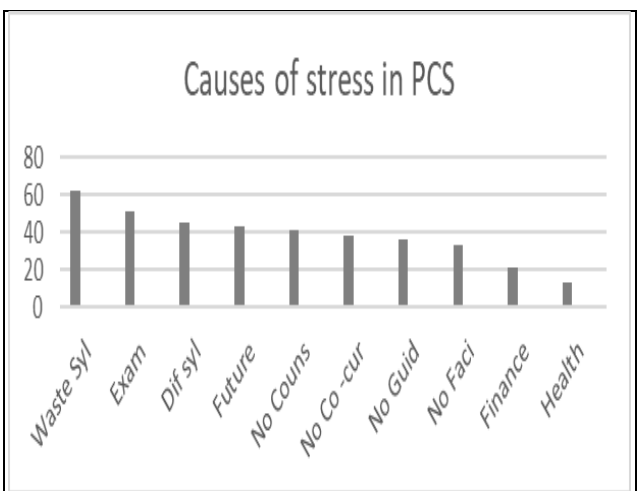
	To Participants	Sev, %, and Num	Mod% & Num	To -% & Num
1st Med-M	069	31.88% (022)	34.78%(024)	66.67% (046)
2nd Med- M	036	27.78% (010)	30.56% (011)	58.33% (021)
3rd Med-M	030	46.67% (014)	36.67% (011)	83.33% (025)
4th Med-M	039	41.03% (016)	17.94% (007)	58.97% (023)
5th Med-M	025	32.00% (008)	28.00% (007)	60.00% (015)

Table 2. Level of stress in PCS of different years of study in South Arabian Medical Colleges Note: The level of stress is highest in 3rd year students and lowest in 2nd year students

The female PCS have more stress than control (30.00%). One more thing is that they are experiencing more (82.76%) stress compared to male PCS (67.10%). (Graph 1). The problems of female students are almost similar to those of males, except that females have fewer problems in finance and health compared to males.



Graph 1. Str Level in M and F compared with control Note: The level of stress is higher (82.76%) in female PCS than males (67.40%)



Graph 2. The most common causes of stress in different PCS. Footnote: The main causes of stress are: waste syllabus, exam patterns, difficult syllabus, worries about the future, lack of guidance, lack of teaching facilities, financial problems, and health problems

When we take all the PCS together, the most important causes of stress, compared to control, are the vast syllabus (64.47% / 27.78%), syllabus is difficult to understand (43.09% /33.33%), multiple exams and the pattern of exams (52.39% / 22.22%), worried about future life (37.50% / 38.89%), and lack of counselling systems (40.46% / 33.33%) to overcome these. (Graph 2)

	Nu		Waste Sylle	Diffi sylle	Exam system	No guidance	No co-curricula	No Couns	Future	No Tec facilities	Finance problem	Health problem
Med- M	130	% Nu	39.23 051	23.08 030	31.54 041	20.00 026	13.08 017	24.62 032	25.38 033	16.92 022	13.85 018	03.85 005
Med-F	066	% Nu	86.36 057	63.63 042	84.85 056	54.55 036	51.51 034	71.21 047	51.51 034	37.88 025	10.61 007	13.64 009
Med M+F	196	% Nu	55.10 108	36.73 072	49.49 097	31.63 062	26.02 051	40.31 079	34.18 067	23.98 047	12.76 025	07.14 014
Den	016	% Nu	75.00 012	81.25 013	43.75 007	18.75 003	37.50 006	37.50 006	31.25 005	25.00 004	25.00 004	06.25 001
Nur	030	% Nu	66.67 020	23.33 007	33.33 010	26.67 08	16.67 005	20.00 006	26.67 008	46.67 014	16.67 005	03.33 001
Eng	028	% Nu	85.71 024	53.57 015	71.43 020	50.00 014	53.57 015	64.29 018	57.14 016	07.14 002	14.29 004	03.57 001
Phr	034	% Nu	94.12 032	70.59 024	73.53 025	70.59 024	55.88 019	41.18 014	52.94 018	58.82 020	26.47 009	14.71 005
KFU M+F	304	% Nu	64.47 196	43.09 131	52.39 159	36.51 111	31.57 096	40.46 123	37.50 114	28.62 087	15.79 048	11.84 036
Eng, Ind, R	074	% Nu	36 48.65	32 43.24	30 40.54	21 28.38	35 47.30	20 27.03	36 48.65	28 37.84	22 29.73	10 13.51
Eng Ind-U	27	% Nu	77.77 21	74.07 20	70.37 19	62.96 17	88.89 24	81.48 22	85.19 23	66.67 18	51.85 14	29.63 08
Control	018	% Nu	27.78 005	33.33 006	22.22 004	05.55 001	33.33 006	33.33 006	38.89 007	33.33 006	44.44 008	05.55 001
To -F	096	% Nu	80.21 077	51.04 049	68.75 066	45.83 044	40.63 039	55.21 053	43.75 042	40.63 039	12.50 012	10.42 010
To: M KFU	208	% Nu	57.21 119	39.42 082	44.71 093	32.21 067	27.40 057	33.65 070	34.62 072	23.08 048	17.31 036	16.35 034
To PCS	405		62.47 253	45.19 183	50.86 206	36.30 147	38.27 155	40.74 165	42.72 173	32.84 133	20.74 84	13.33 54

Table 3. Important causes of stress in different PCS and control groups and for both sexes in% and numbers. Note: Important causes of stress are the syllabus, difficult syllabus to understand, exams, worries about future, lack of counselling, guidance, facilities, finance, health, etc

The important causes of stress in different PCS in KFU and SA are waste syllabus, difficult syllabus, exam pattern, worry about the future, no regular counselling, lack of extracurricular activities, etc. Other important professional college students' problems compared to control are lack of guidance regarding study (36.51% / 05.55%) (Eg. the books to refer to, preparation of exams, etc.). There are very few co-curricular activities in between for relaxation (40.46% or 33.33%). Lack of teaching facilities (like museums, libraries, and laboratory equipment) to understand the subject in professional colleges compared to control (33.33%). Most of the time, PPT lectures were boring. (28.62%) (Table 3)

The main causes of stress were almost similar in male and female PCS, except that finance and health were less problematic for female students. However, for non-professional controls compared to professionals, factors that could cause stress were thinking about the future (38.89% or 37.50%) and financial problems (44.44% or 15.79%).

DISCUSSION

An individual who is overloaded and and struggling to cope with demands will experience stress. A known fact is that medical students are suffering from its adverse effects, and a lot of studies have been done on its incidence, causes, and adverse effects.[1–8] Many advices have been given to reduce stress.[9-16] Administrators may implement many of the suggestions as well.[33-36] In the present study, another effort has been made to study the level of stress and its causes in other PCS like dentistry, nursing, pharmacy, and engineering.

In the present study, the level of stress was higher in the medical students (71.79%) than the control group (30.00%) which is an alarming situation. In our study, the most important causes of stress in medical colleges are vast syllabus (55.10%), difficult syllabus (36.73%), multiple exams and pattern of exams (49.59%), being worried about life in the future (34.18%), and lack of counselling systems to overcome these problems (40.31%). A study conducted by Soma Gupta et al. showed a similar result.[10] However, control from non-professional colleges showed that their main problems were financial worries (44.44%), thinking of the future (38.89%), and lack of teaching facilities (33.33%). It is the collective responsibility of policymakers, administrators, and teachers to understand this. Students want regular counselling, guidance, teaching them in small groups, and changing the exam pattern to overcome this stress. Medical students experience stress mostly in their third year and the least in their second year. It may be due to an increased syllabus in the 3rd year compared to the 2nd year, as shown in Table 2.

An important thing we observed in this study is that students from other professional colleges like dental (72.72%), engineering (70.00%), nursing (71.43%), and pharmacy (69.39%) also have stress, which is similar to medical colleges (71.79%) and more than control (30.33%). Comparatively less importance is given to the problems of these PCS. In the present study, the factors causing stress in these Den, Eng, Nur, and Phr college students are similar to those of medical students, like the vast and difficult syllabus, pattern and frequency of exams, and worry about future (Table 2).

A study conducted by Zeyad H. et al. showed that dental students also have problems, whose incidence and causes (mainly workload, lack of guidance, lack of counselling, etc.) are similar to the present study.[40] Venugopal et al., from Tamil Nadu, India, studied stress and its causes in engineering colleges. He also showed that there was increased stress among the engineering students, and the main reasons were lack of counselling, academic overload, and financial problems.[41] Once again, the incidence and causes are similar to the present studies. One meta-analysis conducted in China by Yan-xue Zheng et al. shows that there is a moderate level of stress among nursing students in China. But in our study, the level of stress among nursing students was significant. The reasons for stress are similar, like academic work load, exams, financial factors etc.[42] They all need proper help, guidance, and counselling to overcome these situations.

Another study conducted by Nur Aini et al. in Indonesia shows that stress among pharmacy students is 50.31%, whereas only 37.19% of non-pharmacy students experience stress. For pharmacy students, academic and financial problems are significant (77.36% and 61.18%) whereas social problems significantly cause stress among non-pharmacy students (67.54%).[43] In the present study, we have also seen similar results. The pharmacy students are overstressed and the main cause of stress in pharmacy students is academic overload. Therefore, it is confirmed that pharmacy students have more stress than controls, and academic causes are the main reasons for that.

Our present study shows that the level of stress is higher in urban colleges (87.10%) than in rural engineering colleges (61.67%). It may be because in urban colleges, the free time for studies is comparatively less due to time loss in transportation. Additionally, the level of expenditure may be higher than in rural colleges, causing a financial burden.

With this, we can say that along with medical students, other professional college students also have problems, mostly due to academic overload, lack of guidance, less time to relax, etc. As knowledge expands, time and brain capacity will remain the same. Therefore, for all the PCS, they need 1) Improved methods of teaching by using teaching aids, improving museums, laboratories, libraries, etc. and improving hostel facilities.[12,15,20] 2) Teaching in small groups of 8–10 students to give them more attention. 3) Interpersonal interactions between learners and teachers.[6,12] 4) The conduct of academic activities like CME, hands-on workshops, clinico-pathological conferences, medical quizzes, etc. at low cost will enhance subject learning by different ways. 5) Modification of assessments, like splitting the exams into smaller parts and exams of open book type, etc. 6) Periodic counselling to know the students' difficulties, problems, and stressors, and giving physical and emotional support and guidance to decrease their stress level.[6,17,18,19,23] 7) Improve the relationship between students and teachers by cultural activities thereby reducing communication gaps. 8) The addition of recreation between academic activities, 9) Introduction of outdoor and indoor sports to relax may help our future doctors learn and serve the society better.

One more important thing we noticed in our study was that the level of stress was higher in females (90.43%) than males (82.76%). The study conducted by Zeyad H et al. and Hamza et al. showed the level of stress in female students higher compared to male students.[17,40] The reason may be less time

availability, as they have to assist in the house with parents, etc., so additional focus must be given to female PCS.

CONCLUSIONS

The level of stress is higher in medical students compared to the control group. Similar levels of stress are also found in other PCS, like dental, engineering, pharmacy, and nursing. The level and causes of stress are almost similar, with a mild difference in different countries like Saudi Arabia and India. The level of stress is higher in females compared to males. The level of stress is higher in urban colleges than in rural engineering colleges. The causes of stress are heavy syllabus, a difficult syllabus to understand, traditional exam systems, less counselling and guidance from teachers and staff on how to study, and fewer co-curricular activities for relaxing. Other factors include lack of learning facilities like books, lab equipments, and museums. Financial and health problems could be some of the reasons for few students. To overcome stress, students are using different methods mainly tobacco, drugs, alcohol, etc. Better for the future is when policymakers, administrators, and teaching staff understand this. Providing more teaching and learning facilities, creating a relaxed atmosphere, changing the patterns of examinations, and regular counselling and recreations like cultural activities, educational tours, music, sports, etc. all might create more and more healthy and educated professionals for a better society.

REFERENCES

[1] Vaz RF, Mbajiorgu EF, and Acuda SW. A preliminary study of stress levels among first-year medical students at the University of Zimbabwe. Cent Afr J Med 1998;44(9):214-9.

[2] Abdus Salam, Ribeye Yousef, et al., Stress among Medical Students in Malaysia: A Systematic Review of Literature. International Medical Journal 2013;20(6):649-55.

[3] Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. Med J Malaysia 2004;59(2):207-11.

[4] Lupo MK, Strous RD. Religiosity, anxiety and depression among Israeli medical students. Isr Med Assoc J 2011;13(10):613-8.

[5] Rosal MC, Ockene IS, Ockene JK, et al. A longitudinal study of students' depression at one medical school. Acad Med 1997;72(6):542-6.

[6] Sidana S, Kishore J, Ghosh V, et al. Prevalence of depression in students of a medical college in New Delhi: a cross-sectional study. Australas Med J 2012;5(5):247-50.

[7] Dagistani A, Al Hejaili F, Binsalih S, et al. Stress in medical students in a problem-based learning curriculum. International Journal of Higher Education 2016;5(3):12-9.

[8] Rab F, Mamdou R, Nasir S. Rates of depression and anxiety among female medical students in Pakistan. East Mediterr Health J 2008;14(1):126-33.

[9] Stewart SM, Betson C, Marshall I, et al. Stress and vulnerability in medical students. Med Educ 1995;29(2):119-27.

[10] Gupta S, Choudhury S, Das M, et al. Factors causing stress among students of a Medical College in Kolkata, India. Educ Health 2015;28(1):92-5.

[11] Shendarkar AT, Patil V. A study of stressors in medical college students in northern Maharashtra. J Indian Acad Forensic Med 2013;35(3):227-9.

[12] Pradhan G, Mendonca NL, Sahajanand S, et al. Does appearing for exams cause stress? Evaluation the stress status among MBBS students influence of examinations. IJHSR 2013;3(11):38-43.

[13] Linn BS, Zeppa R. Stress in junior medical students: relationship to personality and performance. J Med Educ 1984;59(1):7-12.

[14] Priti Solanky et al. Study of psychological stress among undergraduate medical students of government medical college. Int J Med Sci Public Health 2012;1(2):38-42.

[15] Supe AN. A study of stress in medical students at Seth G.S. Medical College. J Postgrad Med 1998;44(1):1-6.

[16] Daud S, Shaikh RZ, Ahmad M, et al. Stress in medical students. Pak J Med Health Sci 2014;8(3):503-7.

[17] Abdulghani HM, AlKanhal AA, Mahmoud ES, et al. Stress and Its Effects on Medical Students: A Cross-sectional Study at a College of Medicine in Saudi Arabia. J Health Popul Nutr 2011;29(5):516-22.

[18] Sharma B. A study of academic stress and its effect on vital parameters in final year medical students at SAIMS, India. Biomed Res 2011;22(3):361-5.

[19] Ross S, Cleland J, Macleod MJ. Stress, debt and undergraduate medical student performance. Med Educ 2006;40(6):584-9.

[20] Nandi M, Hazra A, Sarkar S, et al. Stress and its risk factors in medical students. Indian J Med Sci 2012;66(1-2):1-12.

[21] Welsh JW, Shentu Y, Sarvey DB. Substance use among college students. Focus (Am Psychiatr Publ) 2019;17(2):117-27.

[22] Caldeira KM, Kasperski SJ, Sharma E, et al. College students rarely seek help despite serious substance use problems. J Subst Abuse Treat 2009;37(4):368-78.

[23] Skidmore CR, Kaufman EA, Crowell SE. Substance use among college students. Child Adolesc Psychiatr Clin N Am 2016;25(4):735-53.

[24] Arria AM, Caldeira KM, Vincent KB, et al. Do college students improve their grades by using prescription stimulants nonmedically? Addict Behav 2017;65:245-9.

[25] Croom K, Lewis D, Marchell T, et al. Impact of an online alcohol education course on behavior and harm for incoming first-year college students: short-term evaluation of a randomized trial. J Am Coll Health 2009;57(4):445-54.

[26] Lipari RN, Jean-Francois B. Trends in perception of risk and availability of substance use among full-time college students. In: The CBHSQ Report. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2013. 2016.

[27] Sarkar S, Roy SK, Singh R. A study of substance abuse among male engineering students staying at hostels in a township near Kolkata: Int J Community Med Public Health 2018;5(8):3304-10.

[28] Datta A, Bhattacharyya A, Naskar NN. Substance abuse among Medical students: Indian Journal of Hygiene and Public Health, Kolkata 2015;1(2):41-7
[29] Goel N, Khandelwal V, Pandya K, et al. Alcohol and Tobacco Use Among Undergraduate and Postgraduate Medical Students in India: A Multicentric Cross-sectional Study. Cent Asian J Glob Health 2015;4(1):187.
[30] WHO. Substance Abuse. 2016. Accessed from: www.who.int/topics/substance_abuse/en/
[31] Kumari R, Nath B. Study on the Use of Tobacco among Male Medical Students in Lucknow, India. Indian J Community Med 2008;33(2):100-3.
[32] Mackay J, Eriksen M. The tobacco atlas 2002. Geneva: World Health Organization 2002
[33] Mohan S, Pradeepkumar AS, Thresia CU, et al. Tobacco use among medical professionals in Kerala, India: the need for enhanced tobacco cessation and control efforts. Addict Behave 2006;31(12):2313-8.
[34] Ramakrishna GS, Sarma PS, Thankappan KR. Tobacco use among medical students in Orissa. Natl Med J India 2005;18(6):285-9.
[35] Kumar NSP, Pathath AW, Harsha NS, et al. Stress in Medical Students and its Consequences: A Cross-Sectional Study at a College of Medicine in Saudi Arabia. International Journal of Indian Psychólog 2022;10(1).
[36] Trushna S, Geetanjali PM, Shah GV. Stress and stressors in medical education and evaluation of different modalities to overcome it. Sch J App Med Sci 2014;2(3D):1123-6.
[37] Pradeepkumar NS, Joseph NM, Kotastane D, et al. Student perspective of pathology museum. Natl Med J India 2010;23(6) 377-8.
[38] Dyrbye LN, Thomas MR, Shanafelt TD. Medical student distress: causes, consequences, and proposed solutions. Mayo Clin Proc 2005;80(12):1613-22.
[39] NH Department of Administrative Services (Gov.) https://www.das.nh.gov› perceived stress scale.
[40] Al-Sowygh ZH, Alfadley AA, Al-Saif MI, et al. Perceived causes of stress among Saudi dental students. King Saud University Journal of Dental Sciences 2013;4(1):7-15.
[41] Venugopal S. Engineering students' stress management: International Research Journal of Modernization in Engineering Technology and Science. www.irjmets.com :www.irjmets.com 2022. -ISSN: 2582-5208
[42] Zheng YX, Jiao JR, Hao WN. Prevalence of stress among nursing students: a protocol for systematic review and meta-analysis. Medicine (Baltimore) 2022;101(31):e29293.
[43] Mardea NA, Widayanti AW, Kristina SA. Stress level comparison between pharmacy students and Non-pharmacy students in Indonesia. Int J Pharm Res 2022;12(3):204-9.