

Depression among undergraduate medical student , A worldwide literature review

Abstract :

Stress is one of the main factors that might lead to depression on the long term , medical students are susceptible to stress and depression more the other students.

Aim : to look at the prevalence of depression on medical students .

Methodology : We looked at published researches on internet about the depression rate among medical students in different area around the world.

Results : Most of the literature showed at least 10% of the student were having depression during the medical school.

Conclusion : due to high rate of depression among medical students , a coping strategies to stress and depression should be offered to medical students to prevent future complication

Introduction :

Depression (clinical depression) is a common and serious mood disorder , It's can cause sever symptoms and affect your health , current research suggest that depression can be caused by multiple factors such as (genetics , environmental , psychological factor and stress) , it can occur at any age regardless to the gender.

According to American Psychiatric Association, at least 5 of the following symptoms have to be present during 2 week period (1) :

- 1- Depressed mood
- 2- Diminished interest

- 3- Significant weight change
- 4- Sleep disturbance
- 5- Psychomotor agitation
- 6- Fatigue
- 7- Feeling worthlessness
- 8- Lack of concentration
- 9- Recurrent thought of death

Medical school is well known school that cause stress on students , it is recognized as stressful environment and may have negative effect on mental health , physical health and studying performance , A study done in United Kingdom about depression among medical students and showed that prevalence of depression ranged between 5.7% and 10.6% among all core student (medical school) (2).

Stress is a usual respond to any student prior and any exam and this kind of stress may contribute to eager the student , however if this stress become sever and the student were unable to cope with this might cause depression on long term .

Medical students are one of the most distressed group of students compared to other specialities and this stress has a consequences which might lead to depression and mood Swings (3)

Recent studies in United Kingdom showed that mental health problems within he students is very high and might reads his as high as 40% and most of then were suffering from depression (4)

Failure to detect depression among medical students is not uncommon , multiple studies showed that these disorders are under diagnosed and under treated and this might lead to unwanted effect such as psychological morbidity and effects their careers and lives. (5)

In this literature Review we are looking at depression rate among medical students according to geographic distribution.

Literature review :

United Kingdom

A study was done by Thelma and his colleagues about the prevalence of depression among medical students , this study was longitudinal study including core science and clinical students and it showed a prevalence of depression ranged between 5.7% to 10.6% among all core students and 2.7% and 8.2% among all clinical students.

United state of America

In Albert Einstein College of Medicine they did a wellness assessment of all medical students to assess health behaviors , stress and depressive disorder , it was online survey to all medical students from 2014 to 2015 at the beginning of their first year and again at the end of their third year , the result was significant increase in stress from average of 5.51 in first year to 6.46 in third year with p value of (0.0001) and 28.4% were having depression in first year while (39%) in their third year, they concluded that there is increase in stress rate and depression rate thought out studies years as third year were more stressed and depressed compared to first year (6)

Canada

A systemic review of depression done in Canada among medical students , they identified 40 articles on medical students psychological distress and they found that there is high prevalence of depression and

anxiety among medical students , the level of psychological distress were higher than general population of same age and higher in female (7)

Malaysia

A cross sectional study done in Malaysia by Sherina about psychological stress among undergraduate students in 2002 , it was a self administered questionnaire to screen for symptoms of psychological stress and the result was prevalence of psychological stress among the participants was 41.9% and it was higher in female compared to male (42% , 41%) respectively , the most common symptoms was that the students were not feel happy (78%) and had problem in sleeping (71%) (8)

Table 1: Symptoms of psychological stress among 396 respondents

	Symptoms of Psychological Stress	Number	Percentage	Mean / SD
1	Unable to feel reasonably happy	312	78.8	0.79 ± 0.41
2	Lose sleep over worry	281	71.0	0.71 ± 0.46
3	Constantly under strain	154	38.9	0.39 ± 0.49
4	Feeling unhappy and depressed	133	33.6	0.34 ± 0.47
5	Unable to concentrate	109	27.5	0.28 ± 0.44
6	Unable to enjoy normal activities	108	27.3	0.27±0.45
7	Losing confidence in own self	107	27.0	0.27±0.45
8	Unable to overcome difficulties	103	26.0	0.26 ± 0.44
9	Unable to face up to problems	81	20.5	0.20 ± 0.40
10	Not capable of making decisions	67	16.9	0.17 ± 0.38
11	Unable to play a useful part in things	66	16.7	0.17 ± 0.37
12	Thinking of own self as worthless	63	15.9	0.16 ± 0.37

They concluded that prevalence of psychological stress is very high among medical students .

Pakistan

A cross sectional survey was done in Rawalpind included 500 medical students for depression evaluation , all students were tested 3 times in different internal during the semester. For those students who completed all three assessment the result showed that 37% had mild depression 14% had moderate to sever depression and 48% had no depression (9)

United Kingdom of Saudi Arabia

A cross sectional study was done in United Kingdom of Saudi Arabia , they used patient health questionnaire (PHQ-9) , a total of 2562 students were participated in the study , the majority were female students (61.6%) , from all participated students , 66% of male student were having various level of depression and 87% of female patient were having depression as well, they noticed that depression rate were associated with collage year , living condition and smoking status (P-Value < 0.05) (10)

Fig 1:

Depression severity in relation with gender

Gender	Depression severity				
	None–minimal (0–4), n (%)	Mild (5–9)	Moderate (10–14)	Moderately severe (15–19)	Severe (20–27)
Male	233 (23.4)	299 (30.4)	242 (24.5)	128 (12.9)	88 (8.8)
Female	196 (12.4)	461 (29.3)	429 (27.3)	277 (17.6)	209 (13.2)
Total	429 (16.7)	760 (29.7)	671 (26.2)	405 (15.9)	297 (11.6)

Fig 2:

Presence of depression symptoms associated with sociodemographic factors

Sociodemographic characteristics	Presence of depression symptoms		P-value ^a
	Yes	No	
Marital status			
Single	1,309 (83.3)	396 (16.7)	0.233
Married	122 (83.1)	33 (16.9)	
College years			
Year 1	439 (88)	60 (12)	0.034
Year 2	480 (85.9)	79 (14.1)	
Year 3	418 (84.6)	76 (15.4)	
Year 4	441 (81.8)	98 (18.2)	
Year 5	355 (75.4)	116 (24.6)	
Nationality			
Saudi	2,043 (82.9)	420 (17.1)	0.097
Non-Saudi	99 (90.9)	9 (9.1)	
Living condition			
With family	1,792 (83)	366 (17)	0.004
With relatives	91 (82)	20 (18)	
Alone	241 (88.8)	27 (11.2)	
Undetermined	36 (69.2)	16 (30.8)	
Smoking status			
Never smoked	1,804 (82.7)	378 (17.3)	0.008
Previously smoked	140 (87.8)	20 (12.5)	
Smoking	178 (80.9)	42 (19.1)	

Egypt

A self administered questionnaire were given to 700 students , a depression anxiety stress scale and Pittsburgh sleep quality index were used . They report that there is a high frequency of. Depression (65%) , anxiety (73%) and stress level (59.9%) among medical students as well as 55.6% were poor sleepers. They found that the prevalence of stress or depression were higher among female students as well. (11)

Jordan

A cross sectional survey was conducted in Jordan including all different level on undergraduate medical students , they used Istilli et al's questionnaire , PHQ9 and GAD scale to assess the depression among medical students and they reported that 22.3% of 1582 undergraduate medical students participated in the study were having depression , 15% were having anxiety And they reported that female students and students with low income had higher depression rate. (12)

Bahrain

A cross sectional study was done to assess depression rate in medical student in Arabian gulf university in Bahrain including all years medial students from year 1 to year 6 . They reported that 33.9% of year one and 55.06% year 6 were having anxiety, 18.8% of year one and 31.8% of year 6 were having depression . They noticed that female students were slightly more stressed and depressed compared to male students . (13)

Palestine

This study was done between 2018 and 2019 , it was a cross sectional observational study , questionnaire were used to assess depression in medical students , they found that 56% of participants were having minimal depression , 20.3% had mild depression , 14% had moderate depression and 9,1% had sever depression , there reported that 4.5% of participants has even attempted suicide (14)

Ireland

In Ireland they looked for prevalence of depression and suicidal ideation among first year medical students , they used epidemiological depression scale and the suicidal behaviors questionnaire , (59% & 28.5%) of participants experienced depression related symptoms and suicidal thought respectively. (15)

China

A systemic review were done in china to look at prevalence of depression in medical students , they found that depression among medical students were ranging from 13% to 76% with mean of 32% and anxiety ranging from 8.5% to 88.3% with mean of 27% . (16)

New Zealand

This study was conducted at university of Auckland between 2008 to 2009 they used patient health questionnaire and generalized anxiety disorder questionnaire. A total of 778 students were participated in the study , that rate of depression reported was 16.9% and rate of anxiety was 13% , they found that rate of both depression and anxiety were higher in female students (17)

Discussion :

Stress is our body experience to certain environmental changes , it has physical , emotional and negative impact on students , although stress is important to initiate challenges but when this stress goes beyond the student level to cope this might affect the students negatively, hormones are released in response to stress and effects the heart rate and blood pressure, nowadays there is increasing in pressure in stress on medical student due to highly competitive environments. Stress is appears to be universally present in most of medical students regardless to there age , sex and other factors.

Depression is not simply feeling sad or fed up for a few days , it is a spectrum of sign and symptoms that persist for weeks and even months , it can be caused by many factors and it can effect students in many ways and in variety of symptoms , it can be ranged from mild to sever .

Students in general and medical students in specific are susceptible to depression for many different reason , it can be due to length of study during the collage or presence of plenty of exams .

According to WHO , medical students are susceptible to stress more than other students because they encounter more competitive environments, Academic reasons is grater in the first year while patient factors and physical factors appears the be the main cause of stress during the subsequent years(18) .

According to literatures we reviewed it appears that female student were more susceptible to stress and depression and this is due to a the role they play in society , pregnancy and lack of interaction , gender differences were more mentioned in Asian country and that might be due cultural causes , however there other reports suggest that there is no sexual differences (Foster-Williams et al 1996).

Conclusion :

The prevalence of stress and depression is high among undergraduate medical students, so we should teach the students about the stress coping strategies and if we were able to identify those students who are having stress or depression then we can offer to them coping strategies to help them .

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