

Assessing Medical Students' Depressive symptoms by Use of University student depression inventory (USDI) in Sabzevar, Iran

ترجمہ عربی ندارد!

التبريد و اليرف:

Background: Many studies suggest depression rate in medical students is higher in comparison to others. Such disorder can cause motivation loss and hopelessness. Therefore, the aim of this study was to evaluate the depression symptoms and their contributors amongst medical students who were studying the Early Clinical Exposure (ECE) in Sabzevar, Iran.

Methods: This cross-sectional study evaluated the students of Sabzevar University of Medical Science by applying University Student Depression Inventory (USDI) questionnaire, which was comprised of categories including lethargy, cognitive/environmental and academic motivation groups.

Results: Out of 75 students, 31 voluntarily completed the questionnaire. The mean total USDI score of participants was 60.71 ± 22.55 . Although female students got higher USDI scores, data analysis did not show any significant association between USDI results and gender ($p > 0.05$). Lethargy and academic motivation were significantly higher in 4-semester students ($p = 0.04$ and $p = 0.001$ respectively) and Cognitive/emotional results were significantly higher in 7th semester ($p = 0.001$).

Conclusion: Based on the results, 4-semester students were experiencing more lethargy and showed less motivation for their courses. Reprogramming the ECE courses and providing medical students with more clinical exposure may reduce their depressive symptoms. In addition, 7th-semester students seem to experience more emotional problems which could be due to their upcoming clinical courses in few weeks.

Key words: Depression, Medical student, Psychiatry

Reza Jafarzadeh Esfehani¹,
Afsaneh Rezaei Kalat¹, Ali
Jafarzadeh Esfehani²,
Homan Kamranian^{3,*}

¹ Sabzevar University of
Medical Science, Sabzevar,
IRAN.

² Mashhad University of
medical science, Mashhad,
IRAN.

³ Department of Medical
Education, Sabzevar
University of medical
science, Sabzevar, IRAN.

* 5 km Tehran Road -
Building No. 2 Medical
University - Department of
Education, Research and
Technology center,
Sabzevar, IRAN

Tel: +98 0571-4419572

Email:
drkamranian@yahoo.com

Received : Feb 9, 2013

Accepted: Jun 28, 2013

بررسی علائم افسردگی با استفاده از پرسشنامه افسردگی دانشجویان (USDI) سبزوار، ایران

سبزوار یونیورسٹی کے میڈیکل طلباء میں افسردگی کی علامتوں کا جائزہ

زمینہ و ہدف: بسیاری از مطالعات نشان می دهد میزان افسردگی در دانشجویان پزشکی در مقایسه با سایر دانشجویان بیشتر است. این اختلال می تواند سبب از دست دادن انگیزه و ناامیدی شود. بنابراین، هدف از این مطالعه بررسی علائم افسردگی و موارد مربوطه در میان دانشجویان پزشکی که به مطالعه و بررسی قرار گرفتن اولیه در معرض دروس و تجربه بالینی (ECE) قرار گرفته بودند سبزوار بود.

روش: این مطالعه مقطعی از دانشجویان دانشگاه سبزوار علوم پزشکی با استفاده از پرسشنامه (USDI)، که شامل بررسی دسته علائم بی حالی، شناختی / محیطی و انگیزه بود علائم افسردگی دانشجویان دانشگاه سبزوار وار ارزیابی کرد.

نتایج: از 75 دانشجو، 31 به طور داوطلبانه به آن پاسخ دادند. میانگین نمره کل USDI شرکت کنندگان 60.71 ± 22.55 بود. اگر چه دانش آموزان دختر نمرات USDI بالاتر کسب کردند، تجزیه و تحلیل داده ها هیچ ارتباط معنی داری بین نمرات USDI و جنس را نشان نمی دهد ($p < 0.05$). بی حالی و میزان انگیزه تحصیلی در دانشجویان ترم چهارم به طور معنی داری بالاتر بود (به ترتیب $P = 0.04$ و $p = 0.001$) و نتایج شناختی عاطفی در ترم هفتم به طور قابل توجهی بالاتر بود ($p = 0.001$).

نتیجه گیری: بر اساس این نتایج، در دانشجویان ترم چهارم بی حالی بیشتری تجربه شده و انگیزه کمتری به دروسشان از خود نشان دادند. برنامه ریزی مجدد دوره های ECE و ارائه دانشجویان پزشکی با قرار گرفتن در معرض تجربه اولیه دروس بالینی ممکن است علائم افسردگی آنان را کاهش یابد. علاوه بر این به نظر میرسد دانشجویان ترم هفت به نظر می رسد مشکلات احساسی بیشتری را تجربه میکنند که می تواند به دلیل شروع دوره های بالینی طی چند هفته آینده باشد.

واژگان کلیدی: افسردگی، دانشجویان پزشکی، روانپزشکی

بیک گراوند: بہت سی تحقیقات سے پتہ چلا ہے کہ دیگر طلباء کی نسبت میڈیکل طلباء زیادہ افسردگی اور نفسیاتی مسائل میں گرفتار ہوتے ہیں۔ ان مسائل کی وجہ سے میڈیکل طلباء پڑھائی میں ناکام اور پڑھائی کے جذبے سے بے بہرہ ہونے کا شکار ہوسکتے ہیں۔ اس تحقیق کا مقصد میڈیکل طلباء میں افسردگی کی علامتوں کا جائزہ لینا ہے۔ اس تحقیق میں سبزوار یونیورسٹی کے میڈیکل طلباء نے شرکت کی جو کلینیکل پڑھائی اور تجربوں سے گذر رہے تھے۔

روش: اس تحقیق میں سوالنامے استعمال کئے گئے ہیں جن میں جسمانی حالت، تھکاوٹ، محرکات اور پڑھائی کے ماحول کے بارے میں سوال پوچھے گئے تھے۔

نتیجے: اس تحقیق سے پتہ چلا ہے کہ چوتھے سال کے طلباء میں پڑھائی کے محرکات میں کمی آگئی تھی اور پڑھائی میں ان کی دلچسپی ختم ہوگئی تھی، اسکے علاوہ ساتویں ترم میں بے توجہ کا فیکٹر زیادہ تھا۔

سفارش: اس تحقیق سے پتہ چلتا ہے کہ چوتھے برس کے طلباء نے زیادہ افسردگی اور عدم توجہ کا اظہار کیا ہے اور ان کے محرکات بھی دھیبے پڑ گئے تھے اس وجہ سے یہ سفارش کی جاتی ہے کلینیکل دروس کو ایک بار پھر منظم کیاجائے اور ساتویں ترم کے طلباء میں افسردگی کی وجہ کچھ دنوں میں شروع ہونے والے کلینیکل ترم ہوسکتا ہے کیونکہ اس سے اضطراب پیدا ہوگیا تھا۔

کلیدی الفاظ: افسردگی، میڈیکل طلباء۔

INTRODUCTION

University students are susceptible to various health problems. Depression is amongst these problems and according to World Health Organization (WHO) report, its general prevalence is about %5.¹⁻³ As medical schools are considered stressful environments⁴, It is believed that medical students experience more depression and mental illnesses than the rest.⁴⁻⁸ Higher stress rates could be due to special exams, academic demands and increasing psychological pressure.⁹ Depression and anxiety, also, depend on various phases of medical education.¹⁰ As an example, first-year students suffer from separation from their families, dormitory problems or disorientation to the university environment that can lead to higher risk of depressive symptoms.¹¹ Some studies suggest that during medical training the mental health of students can be deteriorated.^{12,13} Another reason could be the transition of medical students from basic science lessons to the clinical level.² Poor motivation and emotional disorders can make medical students fail their courses and can lead to depression, as well. On the other hand, new educational methods seem to be designed to have profound effects on medical students' motivation.^{14,10}

Depression, as a relatively common disorder, is capable of affecting working performance and students' personal lives.¹⁵ It could be presented by mood alteration and sadness. The symptoms can further change thinking, attitude and motivation. Most of these people will feel disabled later.¹⁶ Therefore, evaluation and in-time treatment of this illness and its symptom can protect many students from its harmful repercussions.

Although there might be much information about medical students' depression in Iran, but there is not enough data referring to depressive-symptom rate in medical students who are educated with the new methods, such as early clinical exposure (ECE) method. It seems that implementation of ECE method can convert medical education courses to a more dynamic process. This method provides an early confrontation of medical students with patients before the beginning of their clinical courses and is responsible for medical stress.¹⁴

Therefore, regarding the importance of depressive-symptom effects on medical students, and its dependence on different regional and educational methods, this study was conducted to evaluate those symptoms and the probable effects of new teaching methods on the mental health of the medical students of the Sabzevar University of Medical Science using a validated University Student Depression Inventory (USDI) questionnaire.

METHODS

Study population:

This cross-sectional survey was conducted in Sabzevar University of Medical Science in 2012. The present research has been approved by Sabzevar University of Medical Science research committee (code number: 39201010/05). The only inclusion criterion for this study was being a medical student at any educational level. The only exclusion criteria in our study were incomplete form submission and

the presence of any psychiatric disorder, described as taking any anti-depression medication within the last 6 months or any documented evidence of such. Fortunately, none of our participants suffered from those disorders. All the 75 medical students agreed to fill the questionnaire form voluntarily. After taking verbal consent and explaining the purpose of our study, the forms were given to students. However, only 31 students completely filled out the form. In each form the participants were asked to report their age, gender, years of study, marital status, grade point average and residency mode.

Study instruments:

University Student Depression Inventory (USDI) was used to evaluate the depressive symptoms among medical students; USDI is a 30-item test which measures student depressive symptoms. Participants had to answer how often they experienced each item in the past two weeks in a 5-point Likert scale from 1 "not at all" to 5 "all the time". This test was shown to have strong positive relation with Depression Anxiety Stress Scales (DASS).¹⁷

It seems that students' depression is somehow different from other people. For example, changes in sleep rhythms and appetite, which is asked in other depression questionnaires, can't be beneficial in evaluation of their depressive symptoms, since these alterations can be made by students' daily homework and duties. Other questionnaires seem to emphasize more on clinical aspects of depression and would be more helpful in determining students with severe rather than mild depression. USDI, on the other hand, seems to be better than other depression questionnaires due to the exclusion of some factors such as the above-mentioned topics, and paying more attention to the educational environment. Reliability and validity of the Persian version of the USDI questionnaire was assessed by Hejazi et al. (2007). This questionnaire proves to have an acceptable validity based on the Chronbach's alpha analysis (Chronbach's alpha was reported 0.93 for the overall scale while the value ranged between 0.83 and 0.94 for the sub-categories). The reliability was assessed using the Pearson correlation coefficient between two trials, which resulted in the $r=0.86$.¹⁸

Statistical analysis:

Descriptive statistics were used to identify mean and standard deviation of continuous variables. Independent t-test was used to compare USDI scores and cumulative grade point average (CGPA) among genders and 2nd-, 4th- and 7th-semester students. One way ANOVA was used to compare USDI and CGPS scores among mode of residence and semester categories regarding the normal distribution of data. Pearson correlation was used to identify the correlation between USDI score and CGPA. The confidence interval was considered as 95% and p values less than 0.05 were considered as statistically significant. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) program version 19.00.

RESULTS

A total of 31 medical students participated in the study. Among the participants, 12 students (38.7%) were in second semester, 10 (32.3%) and 9 (29.0%) students were studying in the 4th and 7th semester, respectively. Only one student was married and most of the students (74.2%) stayed

at the university dormitory. Among the students who lived in the dormitory 11 were male and 12 were female, while 2 male and 3 female students lived in their houses. Mean cumulative grade point average (CGPA) of the students was 15.66 ± 1.09 . Comparison of CGPA between study semesters and residence categories are illustrated in Table 1.

Mean total USDI score of participants was 60.71 ± 22.55 . While mean score of females were higher than males, there was no significant difference in total USDI score between Male and female participants ($p=0.84$) or the semester ($p=0.26$) (Table 1). There was, either, no significant difference in term of USDI total score among the three study semester categories ($p=0.34$) (Table 1).

There was not any significant association between USDI

questions' results and gender ($p>0.05$). There was no significant correlation between USDI score and CGPA of study participants $r(22)=0.11, p=0.62$.

Moreover, there was no significant difference in terms of lethargy mean score amongst genders after running independent t-test ($p=0.78$). Lethargy scores were significantly higher among students in 4th-semester than 2nd and 7th-semesters. There was no significant difference in terms of cognitive/emotional mean score among genders after running independent t-test ($p=0.60$) (Table 2). Cognitive/emotional mean score was significantly higher amongst students in 7th-semesters (Table 2), As well as academic motivation mean score amongst the ones in 4th-semester compared to 2nd- and 7th-semester students (Table 2).

Table 1. Comparison of participants' USDI scores between gender, study semester and accommodation categories

		CGPA	USDI score
Gender	Male	15.45 ± 1.24	78.08 ± 36.06
	Female	15.95 ± 0.79	81.00 ± 25.78
Statistical test	Independent t-test	$t(20)=-1.07, p=0.30$	$t(29)=-0.64, p=0.53$
	2 nd	15.51 ± 0.67	55.83 ± 16.28
	4 th	15.56 ± 0.72	108.86 ± 28.91
	7 th	15.83 ± 1.54	67.22 ± 28.71
Statistical test	One way ANOVA	$f(2, 19)=0.19, p=0.83$	$f(2, 28)= 1.11, p=0.34$
	Dormitory	15.57 ± 1.18	85.93 ± 28.26
	Citizen	15.88 ± 0.64	72.20 ± 40.11
	Pension	15.69 ± 1.56	60.00 ± 32.91
Statistical test	One way ANOVA	$f(2, 21)=0.14, p=0.87$	$f(2, 30)= 0.46, p=0.63$

Mean \pm SD was shown for each category

Table 2. USDI factors mean scores and their comparison amongst study categories

	gender		Study semester			Mode of residence		
	male	Female	2 nd	4 th	7 th	Dormitory	Citizen	Pension
Lethargy	25.56 ± 10.13	24.67 ± 7.63	21.67 ± 7.74	30.60 ± 7.56	23.67 ± 9.51	25.61 ± 8.74	25.60 ± 9.81	20.67 ± 10.69
Statistical test	$t(29)=-0.28, p=0.78^\dagger$		$f(2, 30)=3.41, p=0.04^\ddagger$			$f(2, 30)=0.40, p=0.67^\ddagger$		
Cognitive/Emotion	35.38 ± 18.78	31.80 ± 18.76	20.08 ± 5.52	20.08 ± 5.52	30.44 ± 14.88	35.91 ± 18.75	28.50 ± 21.26	25.67 ± 12.42
Statistical test	$t(29)=0.53, p=0.60^\dagger$		$f(2, 30)=19.21, p<0.001^\ddagger$			$f(2, 30)=0.67, p=0.52^\ddagger$		
Academic motivation	19.00 ± 9.14	15.73 ± 6.75	14.08 ± 4.79	30.60 ± 7.56	13.11 ± 6.33	17.65 ± 7.79	18.60 ± 9.91	13.67 ± 9.87
Statistical test	$t(29)=1.13, p=0.27^\dagger$		$f(2, 30)=12.27, p<0.001^\ddagger$			$f(2, 30)=0.37, p=0.70^\ddagger$		

Mean \pm SD was shown for each category
 † Independent t-test was used for comparing values between categories
 ‡ One way ANOVA was used for comparing values between categories

DISCUSSION

Depression is a multifactorial disorder which is under the influence of many other factors, such as university region, socio-economic status, parental education level and familial history.¹ Medical universities had evaluated their students in various ways by various questionnaires. Turkey, Pakistan and United Kingdom reported higher levels of stress in 1st-year medical students while Tomas et al. claimed that 3rd- and 4th-year United States medical students are more depressed than those in the 1st and 2nd.^{19,20} However, in a cross-sectional study conducted by Jadoon NA et al. in Pakistan on 815 medical students, higher anxiety prevalence was observed among 4th-, 6th- and 2nd-study semester students, respectively, which is in accordance with our results.²¹ Assadi et al. study reported a higher rate of psychiatric disorders among Iranian female medical students and doctors.²² The study by Tomas et al. also reported a higher rate of moderate and severe depression among female US medical students.²³ These studies indicate that there is a higher level of stress among female medical students. In another Iranian study on female students in Isfahan, mean total USDI score was 69.17 ± 22.99 , which was lower than our study. They didn't evaluate medical students and also their study population was larger than ours.²⁴ In Lee et al study, the mean total score of USDI for male and female students was 71.39 ± 19.21 and 71.47 ± 18.18 respectively, which are both lower than our study, but their first year students got higher mean total USDI score than our students (71.16 ± 18.69 versus 55.83 ± 16.28 in our study). Apart from the effect of population size and students' major, religion could be counted as another reason for our different results.²⁵

Different educational methods and different depression evaluation tests in physiological studies make it hard to compare our results with other studies. Each medical university has its own unique environment and education board. The most effective factor about medical student depression, which seemed to be neglected, is the students' exams and homework. Such factors make the comparison of various studies difficult. Different exams with different difficulty stages bring variable stress and depressive symptoms on each medical student. Preparation of 4th-

semester students for their grand exam which takes place in the following year might be the reason of higher USDI scores in them. This effect vanishes in 7th-semester students, who have passed the exam a year ago. On the other hand, 7th-semester students will experience new clinical aspects of medical education and feel closer to the clinical field. Some universities which are applying the integration program with ECE method may reduce this mental tension by integrating similar lessons and bring medical students earlier to clinical field from early semester. Since depression in medical students affects their personal and educational lives, lack of new effective plans for this illness is still a problem. ECE and such programs can be beneficial for tackling this problem, but it needs further more comprehensive studies to evaluate depressive factors on medical students.

Identifying and paying special attention to depressive symptoms can promptly alleviate medical students' further problems. According to our results, 4th-semester students are experiencing more lethargy and less motivation. By increasing their clinical exposure time we may further motivate them to become medical doctors and reduce the tedium of basic science lessons in their courses. By planning extra student-consulting lessons, we may also address 7th-semester students' cognitive/emotional problems. However, further studies on larger populations, undergoing ECE methods, are required to evaluate the effect of depressive symptoms on students at different levels.

Study limitations: The major limitation of this study was the small sample size due to the small number of medical students who enrolled in the survey, as well as low response rate. Therefore, the results of this study might not be generalizable to the whole population of medical students. It is recommended that researchers conduct more comprehensive studies in numerous universities to achieve more reliable results.

Conflict of interest: We declare that there is no conflict of interest for the present study.

Funding and support: Sabzevar University of Medical Science has supported this study.

Research committee approval: The proposal of this research has been approved by Sabzevar University of Medical Science research committee (code: 39201010/05).

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