

Relationship between stress, anxiety, and depression with happiness in students of Bam medical university in 2019

Kasra Mehrzad¹, Fatemeh Yazdanpanah^{2*}, Mansour Arab³, Masoomeh Ghasemi⁴, Ali Radfar⁵

¹Department of Medicine, Faculty of Generalpractice of Psychiatry, Bam University of Medical Sciences, Bam, Iran. ²Department of Medicine, Faculty of Psychiatry, Bam University of Medical Sciences, Bam, Iran. ³Physiology Research Center, Kerman University of Medical Sciences, Kerman, Iran. ⁴Department of Medicine, Faculty of Pediatrics, Bam University of Medical Sciences, Bam, Iran. ⁵Department of Medicine, Bam University of Medical Sciences, Bam, Iran.

Correspondence: Fatemeh Yazdanpanah, Department of Medicine, Faculty of Psychiatry, Bam University of Medical Sciences, Bam, Iran. yazdanpanahfatemeh95@gmail.com

ABSTRACT

Psychological issues and happiness are among the factors affecting the students' academic achievement. The present study was an attempt to investigate the level of stress, anxiety, and depression among students of Bam University of Medical Sciences and their relationship with the level of happiness in 2019. This was a descriptive-analytical study conducted on 300 Bam medical students, who were selected as the study sample based on inclusion and exclusion criteria. To collect data, DASS-21 and Oxford Happiness Questionnaires were used. Data were analyzed in SPSS-23 software using descriptive and inferential statistical tests. The significance level in this study was considered at a p-value <0.05.

Based on the results, 175 (58.3%) were female and their mean age was 22.46 ± 2.05 years. The mean of depression was 5.08 with a standard deviation of 3.75. The mean of anxiety was 4.20 ± 2.96 , the mean of stress was 7.70 ± 4.23 , and the mean of happiness was 42.57 ± 11.98 . Also, 82.7% of subjects were single, which was associated with a pattern of depression. The results of the study suggested that happiness is negatively correlated with depression, anxiety, and stress so that happiness decreased with increasing depression, anxiety, and stress. Thus, it is recommended for university officials to have careful planning to reduce depression, anxiety, and stress in order to increase happiness of students and consequently increase their academic achievements.

Keywords: Stress, Anxiety, Depression, Happiness, Students

Introduction

The World Health Organization considers mental health as one of the essential components of human health [1]. Based on the WHO, one in five people suffers a mental disorder and 29.2% have had a history of mental illness during their lifetime [2]. Medical science education is very challenging in this field and is considered a stressor that negatively affects students' mental

health [1, 3, 4]. Psychiatric disorders such as stress, anxiety, and depression have a significant impact on the learning, academic performance, and physical and mental health of medical students [5-7]. Research suggests a high prevalence of disorders such as stress, anxiety, and depression among students [8]. Medical students, especially those living in dormitories, are exposed to a high level of stress due to their special conditions and social status [9]. Depression is a psychiatric disorder affecting more than 300 million people around the world [10, 11]. Depression is a mood disorder characterized by daily dysfunction with symptoms such as sadness and hopelessness, guilt, and loss of interest. Depression is a common, debilitating, and potentially life-threatening illness that can lead to suicide, addiction, and low self-esteem. Its consequences may be academic failure and impairment in the job, family, and social functions. It, directly and indirectly, imposes huge costs on society [12].

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Mehrzad K, Yazdanpanah F, Arab M, Ghasemi M, Radfar A. Relationship between stress, anxiety, and depression with happiness in students of Bam medical university in 2019. *J Adv Pharm Educ Res.* 2022;12(2):51-6. <https://doi.org/10.51847/djZ1dCmMK6>

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

The prevalence of depression in the United States is 7% and about 11 million people suffer from depression each year, indicating an increase in the prevalence of this disease in younger age groups [13]. In Europe, about 30% of medical students suffer from depression and anxiety [14]. Anxiety disorders are a group of psychiatric disorders characterized by an unpleasant feeling of anxiety, worry about future events, or fear of responding to current events [12]. At least 1 in 9 people in the world suffered anxiety disorder [15, 16]. Factors such as the high volume of classes and courses, inability to make decisions, work future, being away from home and family, financial problems, exams, competing with other students, academic problems, and entering a new environment can be stressors affecting students [17]. Hafsa Liaqat *et al.* showed that 40.4%; 43.82% and 30.33% of dormitory students suffered from depression, anxiety, and stress, respectively [18].

Zahra Jaafari *et al.* (2021) reported that The prevalence of mild, moderate, and severe depression in Iranian students was estimated at 26.1%, 15.5%, and 6.4%, respectively [19]. In a research carried out by Rajeshree S *et al.*, it was shown that Anxiety score was normal. anxiety score among students with BMI > 23 kg/m² and with BMI < 23 kg/m² in both sexes has been found. Also, there was no significant difference of anxiety score among students with higher WHR (males > 0.88 and females > 0.81) and with lesser WHR (males < 0.88 and females < 0.81) [20]. Happiness is a crucial factor in human life and consists of at least 3 components: emotional, cognitive, and social [21]. Happiness is one of the characteristics of human personality that can help humans overcome life pressures [22]. Medical students are less happy compared to other students due to their special educational and work conditions [23]. Students' level of happiness has a significant impact on their academic achievement [24]. Anxiety is one of the most common psychiatric disorders in the general population. One of the most important groups of society is medical students who have sensitive status in society due to facing the health of a large group of people. Medical students deal with the physical and mental pain of patients as well as their personal and family problems. The level of happiness of medical students can also affect their stress, anxiety, and depression. No study has been conducted at Bam University of Medical Sciences to examine the relationship between happiness and depression, anxiety, and stress. Also, high prevalence and different results have been reported on the correlation of happiness with stress, anxiety, and depression in students, especially medical students. Hence, the present study was conducted to evaluate the level of stress, anxiety, and depression in students of Bam University of Medical Sciences and their relationship with happiness in 2019.

Materials and Methods

This descriptive-analytical and cross-sectional study was performed to assess the level of depression, anxiety, and stress and their relationship with happiness in students of Bam University of Medical Sciences in 2019. Cochran's formula was

used to calculate the sample size. Based on this formula, 300 questionnaires were distributed among students of health, nursing, midwifery, and medical schools. They were selected using a random sampling method. Inclusion criteria included male and female students studying during the study and willingness to participate. Exclusion criteria included incomplete filling out of questionnaire, unwillingness to participate, withdrawal from studying at university, and not returning the questionnaire. Finally, 300 questionnaires were returned (Response Rate = 100%). Before starting the sampling, the researcher received a letter of introduction and an ethics code of IR.MUBAM.REC.1399.013 from the Research and Technology Deputy of Bam University of Medical Sciences while observing ethical considerations. After providing sufficient explanations to the subjects on the aims and process of the research and emphasizing the confidentiality of the collected information before starting the research, the subjects filled out the researcher-made questionnaire, which consisted of three sections of demographic characteristics, Oxford happiness, and psychological reactions. The collected data were entered into the computer and were analyzed in SPSS 23 software using the descriptive and inferential statistical tests appropriate to the research aims. The research questionnaire consists of three sections. The first section included individual characteristics, the second section was Depression, Anxiety, and Stress Scale (DASS-21) and the third section was Oxford Happiness Questionnaire. Depression, Anxiety, and Stress Scale (DASS-21): consists of 21 questions, divided into three subscales (each subscale includes seven questions) of anxiety, stress, and depression. Questions 3, 5, 10, 13, 16, 17, and 21 assess depression, questions 2, 4, 7, 9, 15, 19, and 20 assess anxiety, and questions 2, 6, 8, 11, 12, 14, and 18 assess stress. This questionnaire is scored on a Likert scale with options of at all, low, moderate, and high with scores of zero to 3, respectively. Scores ≥ 21 in depression, ≥ 15 in anxiety, and ≥ 26 in stress subscales were considered normal and the alpha coefficient for these three factors was 0.97, 0.92, and 0.95, respectively [25].

Oxford Happiness Scale: The Oxford Happiness Scale includes 29 items that assess five areas of life satisfaction (8 questions: 1, 2, 3, 4, 5, 6, 7, and 8), self-esteem (7 questions: 9, 10, 11, 12, 13, 14, and 15), efficiency or subjective well-being (5 questions: 16, 17, 18, 19, and 20), satisfaction (4 questions: 21, 22, 23, and 24), and positive mood (5 questions: 25, 26, 27, 28, and 29). It is scored on a four-point Likert scale. Its options are scored from zero to 3, respectively. Accordingly, the option "at all" receives score zero, the option "low" receives score 1, the option "moderate" receives score 2, and the option "high" receives score 3. A subject obtains a total score of between 0 and 87 in this scale, in which a higher score is a sign of greater happiness. Information on internal consistency, reliability, and validity in developing Persian version of the Oxford Happiness Scale have been prepared by a previous study [26].

Results and Discussion

The mean age of students was 22.46 ± 2.05 years and 41.7% of the students were male. Also, 82.7% of the subjects were single, 31.3% lived in dormitories and 96.7% lived in urban areas. The mean of depression, anxiety, stress, and happiness were 5.08 ± 3.75 , 4.20 ± 2.96 , 7.70 ± 4.23 , and 42.57 ± 11.98 , respectively (**Table 1**). Based on the results, there was a significant relationship between happiness, and depression, anxiety, and stress ($P < 0.05$) so that happiness decreased with increasing anxiety, stress, and depression. Based on the obtained results, happiness all its components were significantly and negatively correlated with depression, anxiety, and stress, except for the relationship between the components of happiness and total score. It means that with increasing scores of depression, anxiety, and stress, the score of happiness decreases ($p < 0.05$). Also, the variable of Iranian university entrance exam rank was not related to any of the variables. The results of data analysis

showed that living in a rented place was associated with lower scores of depression and stress and higher scores of happiness. In addition, people born in rural areas had higher scores of depression. Moreover, analysis of variance and independent t-test showed that there was a significant difference in these cases ($p < 0.05$). Based on the data analysis, there was no relationship between the parental level of education and job and depression, anxiety, stress, and happiness scores. In addition, parents' quality of life was associated with depression, anxiety, stress, and happiness scores, so that subjects with dead mothers showed more depression, anxiety, and stress. Statistical results suggest that there was no significant relationship between fields of study and scores of depression, anxiety, stress, and happiness. Single people had a higher score of depression and there was no significant difference between single and married people in terms of other variables (**Table 2**).

Table 1. Absolute and relative distribution along with the mean and standard deviation of depression, anxiety, stress, and happiness and its dimensions

Study variables	N	%	Mean	SD	
Depression	Normal	145	48.3	5.08	3.75
	Mild	58	19.3		
	Moderate	72	24.0		
	Severe	16	5.3		
	Very severe	9	3.0		
Anxiety	Normal	142	47.3	4.20	2.96
	Mild	70	23.3		
	Moderate	42	14.0		
	Severe	35	11.7		
	Very severe	11	3.7		
Stress	Normal	139	46.3	7.70	4.23
	Mild	71	23.7		
	Moderate	46	15.3		
	Severe	34	11.3		
	Very severe	10	3.3		
Happiness	Low	22	7.3	42.57	11.98
	Moderate	195	65.0		
	Good	81	27.0		
	Excellent	2	0.7		
Happiness dimensions	Life satisfaction			10.78	4.33
	Self-esteem			10.32	3.17
	Efficiency or subjective well-being			7.13	2.39
	Satisfaction			6.42	2.08
	Positive mood			7.91	2.67

Table 2. Comparison of scores of depression, anxiety, stress, and happiness based on the field of study

Variable	Depression		Anxiety		Stress		Happiness		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Field of study	Medical	4.98	3.93	4.26	3.33	8.25	4.74	40.79	120.1
	Nursing	5.29	3.85	4.11	2.66	7.55	3.76	43.86	12.48
	Laboratory sciences	4.72	3.04	5.05	2.99	6.88	3.02	45.38	12.88
	Midwifery	3.10	2.30	3.52	2.26	5.31	3.51	43.42	10.27
	Public Health	5.53	3.93	4.45	3.04	8.09	4.42	41.85	12.39
	Health Professional	5.65	3.53	3.92	3.26	8.26	4.58	41.92	11.66

	Environmental Health	4.52	3.87	3.76	2.68	7.41	4.38	43.29	9.13
	ANOVA	0.269		0.730		0.169		0.676	
Marital status	Single	5.29		3.84		4.10		2.95	
	Married	4.09		3.13		4.69		2.96	
	Independent t-test	0.037		0.191		0.597		0.095	

Based on the obtained results, happiness showed a significant relationship with depression, anxiety, and stress so that with increasing depression, anxiety, and stress, happiness decreased. In a research carried out by Arab *et al.* (2016), a significant relationship was found between stress, anxiety, and depression and happiness. Their results are line with results of the present study [27]. This consistency in results can be due to the cultural similarity in the province, because the relative balance of cultural justifications in a particular culture can lead to the adoption of similar educational policies. Khani *et al.* (2017) showed a significantly negative relationship between stress and happiness, which is consistent with the results of the present study [28]. In line with our present study, Hosseini (2011) showed a significantly negative relationship between happiness and depression [29]. In the present study, there was a significant relationship between anxiety and happiness, which is in line with results of the study conducted by Poursina *et al.* (2013) [30]. This consistency might be attributed to the fact that since stress, depression, and anxiety play a significant role in mental health, so that their intensification causes loss of emotional balance and physiological changes in the body and lack of focus on cognition and fear in the process of emotion and in general, it has an adverse effect on vital processes. As a result, it affects mental health and reduces one's happiness. In the present study, living in rented place was associated with lower scores of depression and stress and higher scores of happiness. This result may be justified by the fact that being with the family and their emotional support and material or spiritual assistance to dormitory students increase their happiness. However, in research conducted by Zamirinejad (2014) and Ebadi (2017), there was no statistically significant relationship between happiness and residence [31, 32]. Also, in the present study, people who were born in rural areas had higher scores of depression, which could be due to the low facilities of the village and their frequent exposure to stressful events. Based on the results, parents' quality of life was associated with scores of depression, anxiety, stress, and happiness, and people with dead mothers showed higher scores of depression, anxiety, and stress.

This result may be justified by the fact that lack of emotional support and trauma caused by the death of parents can affect their healthy and friendly social relationships and reduce the level of happiness. Based on the statistical results, parental education and job were not associated with depression, anxiety, stress, and happiness scores. It might be due to the fact that the level of education of most of the studied samples was the same. In the study carried out by Sheikh Ahmadi *et al.* (2014), no relationship was found between the level of education and job of parents and depression and anxiety [33]. In this study, there was no significant

relationship between the field of study and scores of depression, anxiety, stress, and happiness. In contrast, in a study conducted by Hosseini *et al.* (2019), there was a significant difference between the mean score of happiness and different fields of study [34]. Since some of the characteristics measured in our society are considered valuable, people try to pretend that they possess these characteristics; our subjects might state that they have these characteristics because they are valuable while they do not have them in reality and it could be a reason for this inconsistency. Therefore, a definite conclusion is not possible and more studies are needed to obtain more accurate results [32]. In the present study, single subjects had a higher depression score, which is consistent with a study conducted by Patti *et al.* (2007) [35]. One of the reasons for this consistency is that satisfaction with married life reduces the rate of depression because couples support each other in coping with each other's problems and establish a close emotional relationship with each other, which increases happiness and intimacy, resulting in reduced depression.

Conclusion

The present study indicated that depression, anxiety, and stress had an effect on happiness. With increasing depression, anxiety, and stress, happiness decreased. These results can highlight the importance of implementing education and health interventions and reducing stress and anxiety among students. Thus, the present results can be considered by the relevant officials to provide the conditions for reducing stress, anxiety, and depression. Hence, they are recommended to develop necessary plans and take necessary steps to improve the happiness of students, since they must have enough happiness to establish useful interactions and cope with problems to be able to play their role properly.

Acknowledgments: The present study was derived from a thesis approved by the Research Council of Bam University of Medical Sciences with the code of IR.MUBAM.REC.1399.013. It was approved by the Research Committee. We thereby appreciate Student Research Committee, Research Deputy, and the students who filled out the questionnaires, and other people who cooperated with us in conducting this project.

Conflict of interest: None

Financial support: Financial support for this study was provided by Bam University of Medical Sciences.

Ethics statement: In this study, ethical principles such as the principle of confidentiality and respect and not mentioning the names of the participants have been observed.

References

1. Organization WH. Policy options on mental health: a WHO-Gulbenkian Mental Health Platform collaboration. Policy options on mental health: a WHO-Gulbenkian mental health platform collaboration. 2017.
2. Noorbala AA, Faghihzadeh S, Kamali K, Yazdi SAB, Hajebi A, Mousavi MT, et al. Mental health survey of the Iranian adult population in 2015. *Arch Iran Med*. 2017;20(3):128-34.
3. Sadiq MS, Morshed NM, Rahman W, Chowdhury NF, Arafat SMY, Mullick MSI. Depression, anxiety, stress among postgraduate medical residents: A cross sectional observation in Bangladesh. *Iran J Psychiatry*. 2019;14(3):192.
4. John CM, Khan SB. Mental health in the field. *Nat Geosci*. 2018;11(9):618-20.
5. Zvauya R, Oyeboode F, Day EJ, Thomas CP, Jones LA. A comparison of stress levels, coping styles and psychological morbidity between graduate-entry and traditional undergraduate medical students during the first 2 years at a UK medical school. *BMC Res Notes*. 2017;10(1):1-10.
6. Moutinho ILD, Maddalena N de CP, Roland RK, Lucchetti ALG, Tibiriçá SHC, Ezequiel O da S, et al. Depression, stress and anxiety in medical students: A cross-sectional comparison between students from different semesters. *Rev Assoc Med Bras*. 2017;63(1):21-8.
7. Sehlo MG, Al-Zaben FN, Khalifa DA, Agabawi AK, Akel MS, Nemri IA, et al. Stress among medical students in a college of medicine in Saudi Arabia: sex differences. *Middle East Curr Psychiatry*. 2018;25(4):150-4.
8. Tung YJ, Lo KKH, Ho RCM, Tam WSW. Prevalence of depression among nursing students: A systematic review and meta-analysis. *Nurse Educ Today*. 2018;63:119-29.
9. Wang X, Xie X, Wang Y, Wang P, Lei L. Partner phubbing and depression among married Chinese adults: The roles of relationship satisfaction and relationship length. *Pers Individ Dif*. 2017;110:12-7.
10. Vos T, Abajobir AA, Abate KH, Abbafati C, Abbas KM, Abd-Allah F, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet*. 2017;390(10100):1211-59.
11. Depression WHO. Other common mental disorders: global health estimates. *Geneva World Heal Organ*. 2017:1-24.
12. Wahed WYA, Hassan SK. Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. *Alexandria J Med*. 2017;53(1):77-84.
13. Li Z, Li B, Song X, Zhang D. Dietary zinc and iron intake and risk of depression: A meta-analysis. *Psychiatry Res*. 2017;251:41-7.
14. Alharbi H, Almalki A, Alabdan F, Haddad B. Depression among medical students in Saudi medical colleges: a cross-sectional study. *Adv Med Educ Pract*. 2018;9:887-91.
15. Connelly K. Diagnostic and Statistical Manual of Mental Disorders: A Musical Adaptation (Doctoral dissertation, The University of Nebraska-Lincoln). 2020.
16. Holmes EA, Ghaderi A, Harmer CJ, Ramchandani PG, Cuijpers P, Morrison AP, et al. The Lancet Psychiatry Commission on psychological treatments research in tomorrow's science. *Lancet Psychiatry*. 2018;5(3):237-86.
17. Hozoori M, Asafari M, Akbari V, Shahsiah M, Esmaeeli M, RamezaniPoor E. Correlation between Food Groups Intake and Depression in Female Students Residing in the Dormitory of Qom University of Medical Sciences. *Qom Univ Med Sci J*. 2020;14(9):28-38.
18. Liaqat H, Choudry UK, Altaf A, Sauleh J, Rahman S, Choudry A. Deranged mental homeostasis in medical students: Evaluation of depression anxiety and stress among home and hostel students. *Acta Psychopathol*. 2017;3(1).
19. Jaafari Z, Farhadi A, Amin Lari F, Mousavi FS, Moltafet H, Dashti E, et al. Prevalence of Depression in Iranian College Students: A Systematic Review and Meta-analysis. *Iran J Psychiatry Behav Sci*. 2021;15(1):e101524.
20. Meshram R, Sulaxane Y, Kulkarni S, Kale A. Association of anxiety with body mass index (BMI) and waist to hip ratio (WHR) in medical students. *Int J Med Sci Public Health*. 2017;6(1):46-50.
21. Fisher JJ, Kaitelidou D, Samoutis G. Happiness and physical activity levels of first year medical students studying in Cyprus: a cross-sectional survey. *BMC Med Educ*. 2019;19(1):1-7.
22. Tasselli S, Kilduff M, Landis B. Personality change: Implications for organizational behavior. *Acad Manag Ann*. 2018;12(2):467-93.
23. Hill MR, Goicochea S, Merlo LJ. In their own words: stressors facing medical students in the millennial generation. *Med Educ Online*. 2018;23(1):1530558.
24. van Zyl Y, Dhurup M. Self-efficacy and its relationship with satisfaction with life and happiness among university students. *J Psychol Africa*. 2018;28(5):389-93.
25. Sahebi A, Asghari MJ, Salari RS. Validation of depression anxiety and stress scale (DASS-21) for an Iranian population. *Iran Psychol*. 2005;4(1):299-313.
26. Medvedev ON, Siegert RJ, Mohamed AD, Shepherd D, Landhuis E, Krägeloh CU. The Oxford Happiness Questionnaire: transformation from an ordinal to an interval measure using Rasch analysis. *J Happiness Stud*. 2017;18(5):1425-43.
27. Arab M, Rafiei H, Safarizadeh MH, Ahmadi JS, Safarizadeh MM. Stress, anxiety and depression among medical university students and its relationship with their level of happiness. *J Nurs Heal Sci Kerman*. 2016;5(1):44-7.

28. Khani S, Babakhani N. Comparing the relation between spiritual growth and perceived stress with happiness among fertile and infertile women of Tehran city. *Q J Heal Psychol.* 2017;5(17):93-104.
29. Hosieni SM, Rezaei A, Keykhosravi Z. A comparison of old men and women's social support, life satisfaction, happiness and depression. *Q J Women Soc.* 2011;2(8):143-62.
30. Poursina M, Ahmadi KH, Shafiabadi A. The impact of happiness on anxiety, academic achievement and parent-child relationships in teenage girls. *J Fam Res.* 2013;10(3(20)):41-54.
31. Ebadi BN, Hosseini MA, Rahgoi A, Fallahi Khoshknab M, Biglarian A. The relationship between spiritual health and happiness among nursing students. *J Nurs Educ.* 2017;5(5):23-30.
32. Zamirinejad S, Piltan M, Haghshenas M, Tabarraei Y, Akaberi A. Predicting happiness based on spiritual intelligence. *J Sabzevar Univ Med Sci.* 2014;20(5):773-81.
33. Shaikhahmadi S, Taymoori P, Yousefi F, Raoshani D. The relationship between education level and occupation of parents of students with internet dependency, depression and anxiety in Sanandaj. *Shenakht J Psychol Psychiatr.* 2014;1(2):58-72.
34. Aliabadi PH, Mahani MA, Omidi A, Khoshab H, Arab M, Haghshenas A. The Relationship between Spiritual Intelligence and Happiness in Students of Bam University of Medical Sciences. *J Biochem Technol.* 2019;2:81-6.
35. Patti E, Acosta J, Chavda A, Verma D, Marker M AL. Prevalence of anxiety and depression among emergency department staff. *N Engl Med J.* 2007;2:9-24.