

ASSOCIATION BETWEEN INVOLVEMENT IN EXTRACURRICULAR
ACTIVITIES AND DEPRESSION, ANXIETY, AND STRESS AMONG
MEDICAL STUDENTS
IN HUE UNIVERSITY OF MEDICINE AND PHARMACY,
HUE CITY, VIET NAM: A CROSS-SECTIONAL STUDY

Hoang Huu Hai ^{1*}, Ho Thi Linh Dan ¹, Vo Hoang Lam ¹, Phung Phuong Nha ¹,
Tran Thi Thuy Linh ¹, Vo Van Khoa ¹, Tran Van Khoi ¹, Tran Binh Thang ²

¹Hue University of Medicine and Pharmacy

²NCC Graduate School of Cancer control and Policy, Korea

*Corresponding Author: hnhai@huemed-univ.edu.vn;

ABSTRACT

Background: The acquisition of a large amount of academic knowledge and heavy examination pressure can bring pressure and stress for students especially for medical students. Long stressed or pressured life may lead to mental health disorders like depression, anxiety, and stress. **Objectives:** The aims of the present study to the situation of participation in extracurricular activities and to obtain with depression, anxiety, and stress of medical students at Hue University of Medicine and Pharmacy, Hue City, Vietnam. **Methods:** A cross sectional-survey was conducted on 659 college students randomly selected from the first year to the fifth-year medical students of Hue University of Medicine and Pharmacy. Depression, anxiety, and stress were assessed anonymously by using DASS-42. **Results:** 38.5% students participated in extracurricular activities. The rate of students having signs of depression, anxiety, and stress was respectively 27.3%, 39.6%, and 29.6%. In our final multivariate-adjusted model, participation in extracurricular activities was associated with a significantly reduced odds of depression, anxiety and stress (odds ratio [OR] was 0.21; $p < 0.01$; [OR], 0.65; $p < 0.01$, [OR], 0.62; $p < 0.01$), respectively. **Conclusion:** Extracurricular activities should be seen as an important element in education, and participation in extracurricular activities as a supportive measure in improving the student's mental health.

Key words: Extracurricular activities; Depression; Anxiety; Stress; Student.

I. INTRODUCTION

For current students, especially medical students, learning is always a top priority. However, medical students often suffer from learning pressure than other students because of the 6-year study duration and difficult training program. Besides, receiving a large amount of knowledge and examination pressure makes students feel stressed and fearful, leading to mental health disorders. According to some studies around the world, the rates of mental health problems among medical students are quite high. This rate of mental health problems is about 22.1% in the US [1], 30.8% in Egypt [2], in Asian countries, South Korea and Malaysia, the proportion ranging from 21-54.5% [3] [4]. In Vietnam, in 2012, Tran Kim Trang's study on 483 medical students at Ho Chi Minh City University of Medicine and Pharmacy showed that the percentages of students with stress, depression, and anxiety were 71.4%, 28.8 and 22.4% respectively [5]. The study of Phan Thi Dieu Ngoc on 395 first- and second-year students at Vinh University of Medicine in 2014 showed that the proportion of depression of students was 31.2% of a mild level, 29.8% of moderate level and 4.3% of severe level [6]. In addition to learning, participating in extracurricular activities can help students to form good health, develop soft skills, and relieve stress after school [7].

Currently, there are not many studies on the situation of participation in extracurricular activities of students, especially of medical students and the influence of participating in extracurricular activities on depression, anxiety, and stress. Therefore, this study was conducted with two following objectives: to describe the situation of participation in extracurricular activities and to obtain its association with depression, anxiety and stress of medical students of Hue University of Medicine and Pharmacy.

II. METHODS

2.1 Study population and setting

2.1.1. Population and setting: This study was conducted on 659 regular General Practitioner students from the first year to the fifth year studying at Hue University of Medicine and Pharmacy in the school year of 2018-2019.

2.1.2. Selection Methods:

Stratifying grades, determining the number of students by the proportional method, the grade with more students will have a larger number of students selected. The total number of General Medicine in the year 2018 - 2019 from the first year to the fifth year was 2828 students distributed across the academic years as follows: 419 in the 1st academic class, 518 in the 2nd academic class, 340 in 3rd academic class, 679 in the 4th academic class and 872 in the 5th academic class. They were distributed across academic years as follows: 97, 120, 80, 158 and 204 students in the 1st, 2nd, 3rd, 4th and 5th academic years respectively.

2.2. Study design: A cross-sectional study design.

2.3. Study contents

- Characteristics of general information and status of participation in extracurricular activities of the subjects.

+ Participating in extracurricular activities: Having participated in at least one extracurricular activity during the period 09/2018 – 01/2019.

+ Not participating in extracurricular activities: Not participating in any extracurricular activity during the period from 09/2018 – 01/2019.

- The questionnaire assesses the level of depression, anxiety, and stress by using DASS-42 (Depression Anxiety and Stress Scales) tool. The min and the max score of DASS-42 are 0 and 42 points respectively. The scores assessed to be at risk of depression, anxiety, and stress through cutting points respectively 10, 8, and 15 and above.

2.4. Statistical Analysis

SPSS software version 20.0 was used for data analysis. Tables including frequency and percentage were applied for descriptive analysis. The relationships between extracurricular activities with depression, anxiety, or stress were determined by multivariate binary logistic regression by entering method and the significance level was 0.05.

2.5. Ethics Approval

The study had obtained permission from Hue University of Medicine and Pharmacy, appreciated students' voluntarily participating in research. The information and data collected are only used for scientific research purposes.

III. RESULTS

3.1. The situation of participation in extracurricular activities of research subjects

Table 1. The situation of participation in extracurricular activities of research subjects

Characteristics		Number (n)	Rate (%)
Participating extracurricular activities	Yes	254	38.5
	No	405	61.5
Level of participating extracurricular activities	1 – 4 times/semester	46	18.1
	1 – 3 times /month	81	31.9
	≥ 4 times /month	127	50.0
Place	Within school	228	89.8
	Outside school	26	10.2
Activities	Learning and researching	77	30.3
	Cultural-Arts, Fitness-Sport	104	40.9
	Voluntary activities, social activities	180	70.9
Average time/month	< 2 hours	55	21.7
	2 – 4 hours	103	40.5
	> 4 hours	96	37.8
Property of activities	Regular	233	91.7
	Irregular	128	50.4
Aims of participating	Getting achievements (certificate, points)	149	58.7
	Hobbies	138	54.3
	Expanding relationship	134	52.8
	Enhancing knowledge	109	42.9
	Bringing joy to yourself	151	59.4
	Obligations	15	5.9
	Asserting yourself	45	17.7
	Forming health, reducing stress	62	24.4
Reasons of no participating	Being unable to arrange the time	252	62.2
	No receiving any benefits	45	11.1
	Feeling unconfident	92	22.7
	Having no talent in the fields of activities	111	27.4
	No knowing the information	20	4.9
	The activity was not appealing	120	29.6

There were 38.5% of students who participated in extracurricular activities. Most students participated in voluntary activities, social work (70.9%). Most students participated in extracurricular activities to bring joy to themselves (59.4%), get achievements (58.7%) and expand relationships (52.8%); There were 50% of participants with the frequency of participation ≥ 4 times / month; 40.6% of the subjects had an average time for each activity of 2-4 hours. Besides that, there were 61.5% of students didn't participate in any extracurricular activities due to unable to arrange a time (62.2%).

3.2. The status of mental health disorders among medical students

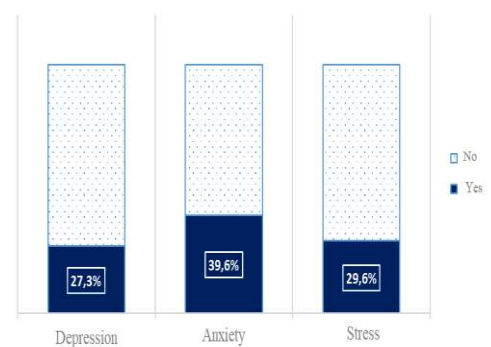


Figure 1. The rates of depression, anxiety and stress among medical students

The rate of students having depression, anxiety, and stress signs was 27.3%, 39.6%, and 29.6% respectively.

3.3. The relationship between participation in extracurricular activities and depression, anxiety, stress of the study subjects

3.3.1. The relationship between participation in extracurricular activities and depression

Table 2. The relationship between participation in extracurricular activities and depression

Independent variables		Depression	Non-Depression	OR	95%CI	p-value
		n (%)	n (%)			
Participating in extracurricular activities	No	139 (34.3)	266 (65.7)	1	-	-
	Yes	41 (16.1)	213 (83.9)	0.27	0.17 - 0.58	<0.01
Participating in learning and researching activities	No	145 (28.9)	357 (71.1)	1	-	-
	Yes	35 (22.3)	122 (77.7)	0.79	0.51 - 1.24	0.32
Participating in cultural-art activities, fitness-sport activities	No	136 (32.2)	286 (67.8)	1	-	-
	Yes	44 (18.6)	193 (81.4)	0.49	0.33 - 0.73	<0.01
Participating voluntary activities, social work	No	99 (32.9)	202 (67.1)	1	-	-
	Yes	81 (22.6)	277 (77.4)	0.68	0.47 - 0.99	0.04
Level of participation in extracurricular	1 – 4 times/semester			1	-	-
	1 – 3 times / month			0.62	0.24 - 1.5	0.32
	≥ 4 times / month			0.54	0.22 - 1.35	0.17
Times of activities participation per month	< 2 hours			1	-	-
	2 – 4 hours			0.77	0.31 - 1.92	0.59
	> 4 hours			1.24	0.51 - 3.05	0.63

OR: Odds Ratio; CI: Confidence interval

There was an association between participation in extracurricular activities with depression (p <0.05).

3.3.2. The relationship between participation in extracurricular activities and anxiety

Table 3. The relationship between participation in extracurricular activities and anxiety.

Independent variables		Anxiety	Non-Anxiety	OR	95%CI	p-value
		n (%)	n (%)			
Participating in extracurricular activities	No	180 (44.4)	225 (55.6)	1	-	-
	Yes	81 (31.9)	173 (68.1)	0.65	0.46 - 0.93	0.02
Participating in learning and researching activities	No	203 (40.4)	299 (59.6)	1	-	-
	Yes	56 (35.6)	101 (64.4)	0.92	0.63 - 1.34	0.67
Participating in cultural-art activities. fitness-sport activities	No	189 (44.8)	233 (55.2)	1	-	-
	Yes	72 (30.4)	165 (69.6)	0.54	0.38 - 0.76	<0.01
Participating voluntary activities, and social work	No	131 (43.5)	170 (56.5)	1	-	-
	Yes	130 (36.3)	228 (63.7)	0.78	0.56 - 1.09	0.15
Level of participation in extracurricular	1 – 4 times /semester			1	-	-
	1 – 3 times / month			0.48	0.22 - 1.06	0.07
	≥ 4 times / month			0.67	0.33 - 1.35	0.26
Times of activities participation per month	< 2 hours			1	-	-
	2 – 4 hours			1.19	0.58 - 2.45	0.62
	> 4 hours			1.26	0.61 - 2.60	0.21

There was an association between participation in extracurricular activities with anxiety (p<0.05).

3.3.3. The relationship between participating in extracurricular activities with stress

Table 4. The relationship between participating in extracurricular activities with stress.

Independent variables		Stress	Non-Stress	OR	95%CI	p-value
		n (%)	n (%)			
Participating in extracurricular activities	No	139 (44.4)	266 (65.7)	1	-	-
	Yes	56 (22.0)	198 (78.0)	0.62	0.28 - 0.63	<0.01
Participating in learning and researching activities	No	156 (31.1)	352 (68.9)	1	-	-
	Yes	42 (26.8)	115 (73.2)	0.89	0.59 - 1.34	0.58
Participating in cultural-art activities. fitness-sport activities	No	134 (31.8)	288 (68.2)	1	-	-
	Yes	61 (25.7)	176 (74.3)	0.75	0.52 - 1.07	0.12
Participating voluntary activities and social work	No	106 (35.2)	195 (64.8)	1	-	-
	Yes	89 (24.9)	269 (75.1)	0.66	0.47 - 0.95	0.03
Level of participation in extracurricular	1 – 4 times /semester			1	-	-
	1 – 3 times / month			0.61	0.26 - 1.41	0.24
	≥ 4 times / month			0.60	0.27 - 1.32	0.21
Times of activities participation per month	< 2 hours			1	-	-
	2 – 4 hours			0.94	0.41 - 2.15	0.89
	> 4 hours			1.49	0.66 - 3.35	0.33

There was an association between participation in extracurricular activities with stress (p<0.05).

IV. DISCUSSION

4.1. The situation of participation in extracurricular activities of medical students

The study showed that 38.5% of participants participating in extracurricular activities. This result was lower than that of Sami A. Almalki and colleagues (73.5%) [8]. This can be explained by different ways of organizing activities, training programs, disciplines, and learning environments [8]. On the other hand, for medical students, with a relatively challenging learning program, and having to spend a lot of time studying, taking time to participate in extracurricular activities may be affected. 62.2% of students presented that the most rational reason for not participating in extracurricular activities was unable to arrange a time. This rate was higher than that of Vu Van Vinh (the reason for not being able to arrange the time accounted for 47.3% of students), which can also be explained by the training program and research object of Vu Van Vinh in the second and third year were different from our research [9].

In the field of participation in extracurricular activities: most of the students spent more time participating in social activities (70.9%), followed by cultural and art activities, fitness-sports (40.9%), and then learning and scientific research activities (30.3%). Social activities were chosen by the majority of students, this can be explained by a number of more than 30 clubs in the school (the Blood Donation Club, the Blue Blouse Volunteer Club, Raising Hope Club, Supporting Patients Club ...) with many diverse and abundant social activities. All those activities offer students a lot of opportunities to contribute to the community. The rates of participation in social and cultural activities, sports (70.9% and 49.2% respectively) were higher than those of Sami A. Almalki and colleagues with 40.9% and 35.5% [8]. 50% of the students who participated in extracurricular activities ≥ 4 times / month.

Our findings also showed that most students chose to participate in extracurricular activities to help themselves be more confident (76.8%) and expand their relationship (77.7%). More than 52% of the participants thought that participating in extracurricular activities helped them develop their skills and improve their skills, more than 24% said that attending extracurricular activities would increase their chances to find jobs and improving good grades or learning outcomes. This result was similar to the study of Cosinger and Erin Massoni, which proved to bring benefits for students if participating in extracurricular activities such as helping them to be more confident, increasing their chances to find jobs because of meeting many people and improved scores [6],[7].

4.2. The relationship between extracurricular activities and depression, anxiety, anxiety among medical students

Results from multivariate logistic regression revealed that there was an association between participation in extracurricular activities with depression, anxiety, and stress. Participation in extracurricular activities had a positive impact on reducing the risk of depression, anxiety, and stress for students ($p < 0.05$). Our results were similar to those of Yusoff [10].

V. CONCLUSION

Among 659 respondents, 38.5% of students participated in extracurricular activities. The percentages of students with symptoms of depression, anxiety, and stress were 27.3%, 39.6% and 29.6% respectively. Participation in extracurricular

activities may reduce the risk of depression, anxiety, and stress. Extracurricular activities should be considered an important element in education, which is a supportive measure in dealing with the mental health problems of students.

Acknowledgements: We would like to thank Hue University of Medicine and Pharmacy and the students who agreed to participate in this study. This is a research supported by the Scientific Research Fund of Hue University of Medicine and Pharmacy.

Conflict of Interest: The authors declare that they have no conflict of interest.

REFERENCES

1. Goebert D.A. and Thompson D.K. (2009), "Depressive Symptoms in Medical Students and Residents: A Multischool Study" *Academic Medicine*, 84(2), pp. 236-241.
2. Wahed W.Y. and Hassan S.K. (2017), "Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students", *Alexandria Journal of Medicine*, 53(1), pp. 77-84.
3. Muhamad S.B. (2010), "Prevalence and Sources of Stress among Universiti Sains Malaysia Medical Students", *Malaysian Journal of Medical Sciences*, 17(1), pp. 30-37.
4. Roh M.S., Jeon H.J. and et al (2010), "The Prevalence and Impact of Depression Among Medical Students: A Nationwide Cross-Sectional Study in South Korea", *Academic Medicine*, 85(8), pp. 1384-1390.
5. Trang T.K (2012), "Stress, anxiety and depression in medical students", *Ho Chi Minh Journal of Medical*, 16 (1), pp. 349-356.
6. Ngoc P.T. (2014), *The situation of depression and factors related to students of Vinh Medical University*. Master thesis of Public health, Ha Noi University of Public Health, Ha Noi.
7. Cosinger S (2011), "An Analysis of Burmese and Iraqi Resettlement Location and Assimilation in a Midsized City: Implications for Educational and Other Community Leaders", *Practical journal of medicine*, 5(1), pp. 79-85.
8. Sami A. A., Abdullah I. A. and et al (2017) "Burnout and its association with extracurricular activities among medical students in Saudi Arabia", *International Journal of Medical Education*, pp. 144-150.
9. Vinh V.V. and Giang T. T. (2013), "The situation of participating extracurricular activities of second year and third year student in Ha Noi University of Medicin in 2012-2013 shool year", *Journal of Researching medicine and drug informations*, pp. 55-62.
10. Yusoff A. and Mohamad S.B. (2013), "Prevalence and associated factors of stress, anxiety and depression among prospective medical students", *Asia Journal of psychiatry*, 6(2), pp. 128-133.

(Received: 8/11/2019 - Accepted: 13/12/2019)