

Identifying strategies for stress self-management of pharmacy students at Nguyen Tat Thanh University

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Abstract

Background: Stress in health science has been studied extensively. Pharmacy students have higher prevalence of stress than other health profession students. Stress has detrimental effects on students' health and their academic performance. Coping strategies are specific efforts that individuals employ to manage stress.

Objectives: This study is aimed to identify coping strategies for stress self-management of pharmacy students at Nguyen Tat Thanh University to suggest some strategies to improve teaching quality, learning environment, and consulting work.

Methods: A cross-sectional study was conducted on 436 pharmacy students from years of admission 2014 to 2018. Coping strategies were assessed using a validated questionnaire.

Results: "always" is the highest stress frequency. However, the lowest rate, slightly more than a quarter, was of the Y2017 student population (25.6%) and had the highest percentage at 33.7% for Y2015 students. The results showed that Problem Solving and Cognitive Restructuring were employed mostly whereas motional expression was the least common solution for stress management of Pharmacy students of Nguyen Tat Thanh University.

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Keywords

stress, psychological health, mental health, pharmacy education environment, Coping skills, CSI, Pharmacy students, Nguyen Tat Thanh University

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1 Introduction

The World Health Organization (WHO) has stated, "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity"[1], and "mental health can be defined as a state of well-being enabling people to realize their abilities, cope with normal stresses of life, work productively and fruitfully, and make contributions to their communities"[2]. Pharmacy students have higher prevalence of stress than students of the other health professions[3]. Sustaining healthy mind is a vital aspect to a pharmacy student since university students often experience an undue amount of stress, which can lead to adverse consequences on their academic performance, emotional wellbeing, as well as on their physical and mental health[4]. However, when exposed to the very same stressful stimulus, different people may exhibit various responses in cognition[5]. Coping strategies are specific efforts, both behavioral and psychological, that individuals employ to master, tolerate, reduce, or minimise stressful events[6]. In Vietnam, many researches were conducted on stress level of nursing

students[7], medical students[8], and so on. However, until now the fact that pharmacy students have the highest stress level among health students[3] has not been studied in Vietnam. In addition, the number of Nguyen Tat Thanh pharmacy students are quite higher than any other pharmacy universities. Therefore, this study was conducted to explore strategies for stress self-management of pharmacy students and to suggest some strategies to improve consulting work of Student Affairs Department, and teaching and study environment quality at Nguyen Tat Thanh University

2 Materials and Methods

Study Design: A cross-sectional descriptive study was conducted at Nguyen Tat Thanh University. Data collection was done using a paper survey from 15/08/2019 to 14/09/2019 with self-answered questionnaires.

Participants and Research Site

Inclusion Criteria

Pharmacy students from 1st to 5th year (Years of admission 2018 (Y2018), 2017 (Y2017), 2016 (Y2016), 2015 (Y2015) 2014 (Y2014)).

Students who agree to take the questionnaire.

Exclusion Criteria

Students who do not attend class during the study period.

Students who do not agree to take the questionnaire.

Research site

Nguyen Tat Thanh University, 300A, Nguyen Tat Thanh Street, Ward 13, District 4, Ho Chi Minh City, Viet Nam.

Nguyen Tat Thanh University, 458/3F, Nguyen Huu Tho Street, Ward Tan Hung, District 7, Ho Chi Minh City, VN.

Sample Size Determination:

Sample size (n) was determined using single population formula with the following assumption:

Confidence Interval=95%

Z-Score = 1.96

Margin of error (E) = 5%

Prevalence (p) = 32.6%[9]

n = required sample size

$n = [Z^2 \times p \times (1-p)]/E^2$

$n = 1.962 \times 0.326 \times (1 - 0.326)/0.052 = 337.64$

$n \approx 338$

Procedures for Data Collection

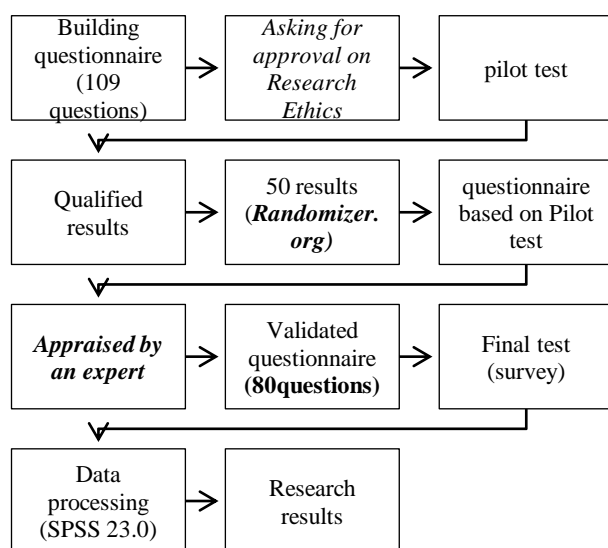


Figure 1 Procedures for stress self-management data collection

The data was collected via a 80-item questionnaire. The paper-based, self-completed questionnaire was developed and built based on previous published works and the actual situation at the Faculty of Pharmacy at Nguyen Tat Thanh University. Then, the questionnaire was validated through a pilot test. Finally, it was reviewed by Professor Nguyen Van Thanh - Dean of Pharmacy Faculty-Nguyen Tat Thanh University before the final test was conducted.

Pilot test

The pilot test was conducted on 245 students. After that, using systematic random sampling (randomizer.org) 50 students were chosen (10 students per academic year)[10]. The feedback received from these students helped to adjust

the questionnaire before the survey was conducted to ensure that everyone not only understood the questions, but also understood themselves in the same way. Moreover, through the test, we could find unnecessary questions and remove them.

Final questionnaire and measures

After conducting the pilot test, the questionnaire based on pilot test results was appraised by an expert for the final questionnaire.

The official questionnaire consisted of 2 main parts with 80 questions (Cronbach's Alpha reliability level was done)

Part A: basic information (6 questions), including socio-demographic information.

Part B: section I & II: 2 questions to evaluate stress frequency; section III: 40 questions (based on the Coping Strategies Inventory-CSI of Gracia) to access the specific coping strategies which students use in response to stressful events[11]. CSI consisted of eight subscales, which were divided into Engagement and Disengagement categories.

The Engagement scale included Problem Solving (PS), Cognitive Restructuring (CR), Social Support (SS), and Emotion Expressing (EE) subscales, indicating active and adaptive efforts to compensate the stressful situation. The Disengagement scale included Problem Avoidance (PA), Wishful Thinking (WT), Social Withdrawal (SW), and Self-Criticism (SC) subscales, suggesting passive and maladaptive coping. Responses were rated on a 5-likert point including 'not at all (0), a little (1), a lot (2), very much (3), and completely (4)[11,12]; section IV: 32 questions (based on the pilot test and some other studies)[13-17] to determine the scale of specific ways that pharmacy students of Nguyen Tat Thanh University used to cope with stress. The scales level is based on the Likert 5-level scale of frequency[18] with 5 responding scores (1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = always).

Ethical consideration:

Approval to conduct the study was given by authorities of the Pharmacy Faculty before the commencement of the data collection.

The study did not adversely affect the student, by collecting data merely by interviewing through anonymous self-fill questionnaires.

Statistical Analysis:

Statistical Package for Social Sciences (SPSS for Windows, Version 23.0) was used for data analyzing.

Excel 2013 was used for chart drawings

3 Results

Data collection:

A total of 502 undergraduate pharmacy students from Pharmacy Faculty joined the survey, including 13% of non-response rate.

Table 1 Survey Data

| Year of Admission | Academic Year | Collected Surveys | Qualified Surveys | Percentages (%) |
|-------------------|-----------------|-------------------|-------------------|-----------------|
| Y2014 | 5 th | 95 | 86 | 90.5 |
| Y2015 | 4 th | 97 | 89 | 91.7 |
| Y2016 | 3 rd | 95 | 77 | 81.0 |
| Y2017 | 2 nd | 95 | 82 | 86.3 |
| Y2018 | 1 st | 120 | 102 | 85.0 |
| Total | | 502 | 436 | 87.2 |

Socio-demographic information of respondents
Participants' gender:

Table 2 Participants' gender

| Year of Admission | Academic Year | Gender | | | |
|-------------------|-----------------|--------|----------------|--------|----------------|
| | | Male | | Female | |
| | | Amount | Percentage (%) | Amount | Percentage (%) |
| Y2014 | 5 th | 24 | 27.9 | 62 | 72.1 |
| Y2015 | 4 th | 26 | 29.2 | 63 | 70.8 |
| Y2016 | 3 rd | 22 | 28.6 | 55 | 71.4 |
| Y2017 | 2 nd | 15 | 18.3 | 67 | 81.7 |
| Y2018 | 1 st | 21 | 20.6 | 81 | 79.4 |
| Total | | 108 | 100 | 328 | 100 |

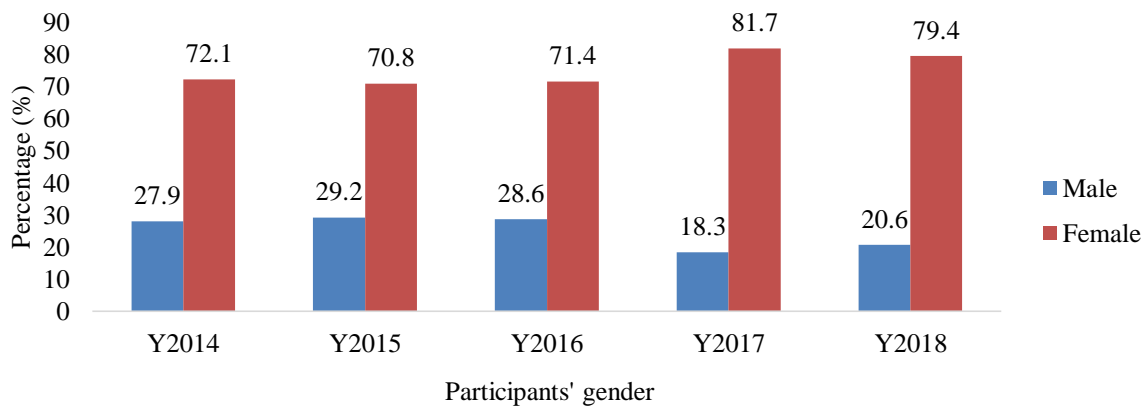


Figure 2 Percentage of participants' gender

The percentage of female participants was higher than male participants and was nearly 3 times compared with its male counterpart. The result is in agreement with the data the

Accreditation Council for Pharmacy Education (ACPE) collected that more female submitted for pharmacy bachelor degree in all ethnicity[19].

Participants' stress frequency:

Table 3 Participants' stress frequency

| Year of Admission | Academic Year | Stress frequency (n=436) | | | P ^c (Chi-square test) |
|-------------------|-----------------|--------------------------|----------------------|------------------|-------------------------------------|
| | | Always (n=125) | Sometimes (n=260) | Rarely (n=51) | P<0.0005 |
| Y2014 | 5 th | 23 (24.66) | 54 (51.28) | 9 (0.2) | |

| | | | | |
|--------------|-----------------|------------|------------|-----------|
| Y2015 | 4 th | 30 (25.52) | 53 (53.07) | 6 (0.2) |
| Y2016 | 3 rd | 22 (22.08) | 46 (45.92) | 9 (0.18) |
| Y2017 | 2 nd | 21 (23.51) | 50 (48.9) | 11 (0.19) |
| Y2018 | 1 st | 29 (29.24) | 57 (60.83) | 16 (0.23) |

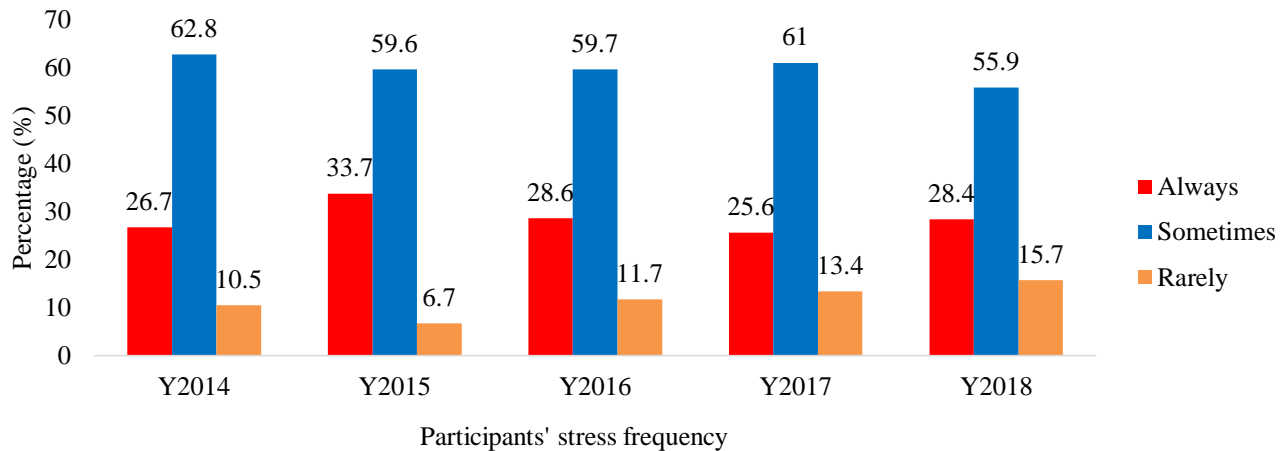


Figure 3 Percentage of participants' stress frequency

There was a significant association between stress frequency and academic year ($p < 0.0005$). The results showed that stress in “always” frequency was the highest among 4th year students - Y2015 (33.7%) and the lowest in 2nd year students - Y2017 (25.6%). Other academic years,

having over 25% of students having stress frequency “always”, included 3rd year students (28.6%), 5th year students (26.7%), and 1st year students (28.6%). For all academic years, stress rate “sometimes” were over 55%.

Coping Strategies Inventory results:

Table 4 Coping Strategies Inventory results of participants from Y2014 to Y2018

| Year of Admission | | Primary Subscale Items | | | | | | | | Total |
|--------------------------|------------|------------------------|-------|--------------|-------|-------|--------------|-------|-------|-------|
| | | PS | CR | EE | SS | PA | WT | SC | SW | |
| Y2014 (n = 86) | CSI scores | 1061 | 1013 | 803 | 921 | 857 | 860 | 789 | 898 | 7202 |
| | % | 14.73 | 14.07 | 11.15 | 12.79 | 11.9 | 11.94 | 10.96 | 12.47 | 100 |
| Y2015 (n = 89) | CSI scores | 1085 | 1051 | 668 | 829 | 856 | 867 | 799 | 913 | 7068 |
| | % | 15.35 | 14.87 | 9.45 | 11.73 | 12.11 | 12.27 | 11.3 | 12.92 | 100 |
| Y2016 (n= 77) | CSI scores | 962 | 927 | 666 | 749 | 778 | 900 | 797 | 895 | 6674 |
| | % | 14.41 | 13.89 | 9.98 | 11.22 | 11.66 | 13.49 | 11.94 | 13.41 | 100 |
| Y2017 (n=82) | CSI scores | 1071 | 1048 | 694 | 826 | 869 | 940 | 836 | 899 | 7183 |
| | % | 14.91 | 14.59 | 9.66 | 11.5 | 12.1 | 13.09 | 11.64 | 12.52 | 100 |
| Y2018 (n=102) | CSI scores | 1332 | 1271 | 883 | 1043 | 1043 | 1276 | 1133 | 1176 | 9157 |
| | % | 14.55 | 13.88 | 9.64 | 11.39 | 11.39 | 13.93 | 12.37 | 12.84 | 100 |

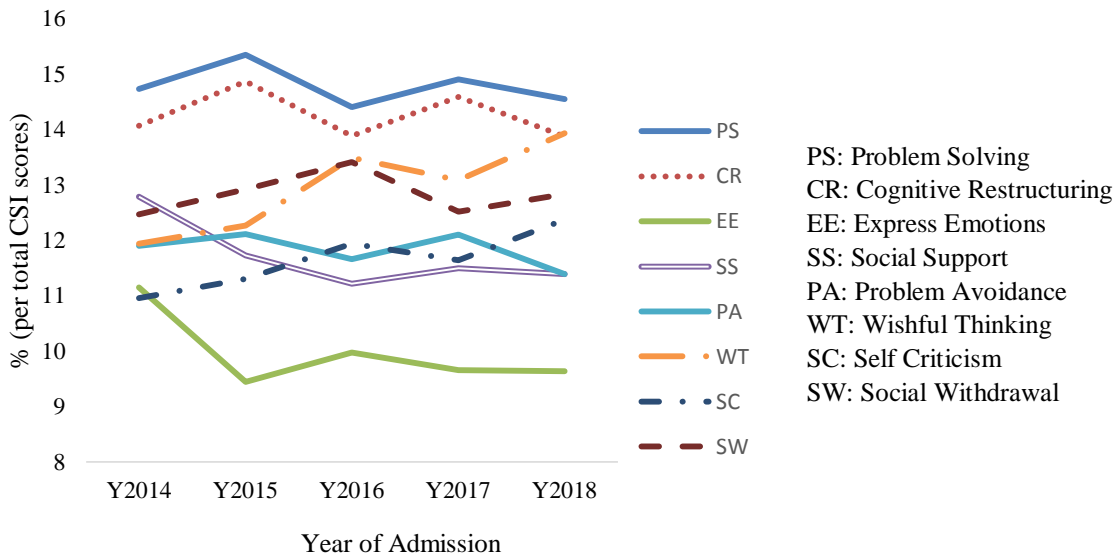


Figure 4 Percentage of CSI scores

The results found that the most common way for all academic year students coping with stress was Problem Solving. This is clear because problem solving skills is part of their pharmacy curriculum. The second strategy that most students applied was Cognitive Restructuring, except 1st year student who used Wishful Thinking to overcome stress. For these students who were experiencing the initial period of life as undergraduate students could be explained as for having less cognition capacity than the other academic students. Besides, Social Support - another active strategy was a little different from academic year students due to the fact that a lot of students were separated from family supports and the faculty has not had a psychologist for counselling. In terms of active strategies, Express Emotion was the at least common coping strategy because based on the survey, many students do not want to talk with either the lecturers or the staff (the highest rate at 74% for 1st year students, the lowest rate at 45% for 5th year students) and the frequency of talking with families and friends fluctuated among academic students.

As for passive strategies including Problem Avoidance (PA), Wishful Thinking (WT), Social Withdrawal (SW), and Self-Criticism (SC) had moderate changes among students in all academic years.

4 Discussion

In this study, there was a significant association between stress frequency and academic year. With regard to stress in frequency “always”, the higher rates of mental disorder were found to exist among 4th year students (33.7%) and 3rd year students (28.6%) can be explained by various changes in their curriculum. In terms of 4th year students, that was the year they had to prepare a lot for graduation. In terms of

3rd year students, they had to make a decision for their pharmacy major. In other words, they had to take responsibility for their own decisions. The results of this study indicates a need for stress management program in pharmacy curriculum.

The findings of this study show that pharmacy students use mainly active coping strategies including Problem Solving and Cognitive Restructuring more than any others strategies due to the fact that these skills are included in the study program. However, Emotional Expression-an adaptive strategy - was the least popular coping mechanism students use to deal with stress. Therefore, it is raising a concern whether it is necessary to implement emotional intelligent training in pharmacy curriculum.

Strengths and Limitations of the study:

The study had a reasonable sample size and the stratified random sampling technique employed allows for a good representation of students from all levels of pharmacy training. The coping strategies score was also assessed with validated tools.

As this was the first time, this questionnaire had-been used, minor mistakes may have existed. The majority of participants were female who have been known to have higher rates of stress than male[18]. The selection of participants from each year of study was based mostly on the basis of availability, which may have left out a group of students who may have been on a break and overly representative of those who were available in certain places and situations.

Conclusions and Implications for Future Research:

It is important to teach students to use desirable coping strategies to reduce stress. Moreover, a well-balanced academic environment is needed for improving learning

experience. The presence of counsellors among the faculty may help students overcome stressful conditions

A focus on students' needs and problems can help prevent unexpected effects of stress on their health and academic performance. Our results also emphasises the need for further study, particularly in the form of longitudinal follow-up.

Stress and Coping Strategies in Parents of Children with Physical, Mental, and Hearing Disabilities in Jordan
Recommendations (based on the study, data not shown)

- Recommendations for students

Students should out workshops and resources on how to manage stressors such as doing yoga, meditation, joining clubs, skills classes, playing sports and taking part in activities of schools and organizations because based on this study, the majority of participants never or rarely joined these kind of activities.

Sharing the thinking with family, friends and teachers, especially with a psychologist is necessary because the current results show that at least 64% students never meet a psychologist for counselling.

In addition, students can go to Student Affair to gather information on how to manage stressors.

- Recommendations for Student Affairs

It is a good idea to create a professional development plan for monthly training to help manage severe stress

Having a professional specialist to counsel students in need.

- Recommendation for improving in teaching and learning program

Training lecturers in communication or interpersonal skills might help them improve such interactions.

Applying emotional intelligent (EI) teaching in pharmacy curriculum would give some benefits for the success of students[20]. Some universities as Regis University (2011)[21], the University of Minnesota (2008-2013) [22], have taught EI in their elective curriculums. As suggested by The Personal and Professional Domain of the Center for the Advancement of Pharmacy Education (CAPE) Outcomes 2013 that EI should be considered when designing curricular outcomes. Department of Pharmacy - Nguyen Tat Thanh University should consider including EQ into its curriculum and select one or more of its faculty members to become EI instructors.

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References

1. World Health Organisation Constitution of WHO: principles. Accessed 25th June 2018.
2. World Health Organization (WHO) (2003). Investing in mental health. Available at http://www.who.int/mental_health/en/investing_in_mnh_final.pdf
3. Assaf AM. (2013) Stress-induced immune-related diseases and health outcomes of pharmacy students: a pilot study. *Saudi Pharm J.* 21:35–44
4. Marshall, L. L., Allison, A., Nykamp, D., & Lanke, S. (2008). Perceived stress and quality of life among doctor of pharmacy students. *American Journal of Pharmaceutical Education*, 72(6).
5. Haefner, A., Stock, A., & Oberst, V. (2014). "Decreasing Students' Stress Through Time Management Training: An Intervention Study. *Euro Journal of Psychology of Education*, 30(1), 81-94.
6. Watson MJ, Logan HL, Tomar SL. (2008). The influence of active coping and perceived stress on health disparities in a multi-ethnic low income sample. *BMC Public Health*; 8:41
7. Dung, V. (2015). *Stress situation of nursing students at Thang Long University in 2015 and some related factors*, Master's thesis in Public Health., Ha Noi: Hanoi University Of Public Health.
8. Trang, T. K. (2012). Stress, anxiety and depression among medical students. *Ho Chi Minh City Journal of Medicine*, 355-361.
9. Alem A, Araya M, Melkanu Z, Wondimagegn D & Abdulahi A. (2005). Mental distress in medical students of Addis Ababa University. *Ethiop Med J*, 43 (3)



10. Birkett, M. A., & Day, S. J. (1994). "Internal Pilot Studies For Estimating Sample Size". *Statistics In Medicine*, 13, 2455-2463.
11. Garcia, F. C., Franco, L. R., & Matinez, J. G. (2007). "Spanish version of the Coping Strategies Inventory". *Actas Esp Psiquiatr*, 35(1), 29-39
12. Tobin DL, Holroyd KA, Reynolds RV, Kigal JK. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognit Ther Res*;13:343-61
13. Errisuriz, V. L., Pasch, K. E., & Perry, C. L. (2016). "Perceived Stress And Dietary Choices: The Moderating Role Of Stress Management". *Eating Behaviors*, 22, 211–216.
14. Hatef B, Shiri S, Sahraei H. Why human react differently to the same sensory experiences: an emotion-cognition interaction. *Neurosci J Shefaye Khatam*. 2015;4:63-72
15. Hindman, R. K., Glass, C. R., Arnkoff, D. B., & Maron, D. D. (2015). "A Comparison Of Formal And Informal Mindfulness Programs For Stress Reduction In University Students". *Mindfulness*, 6(4), 873–884
16. Opoku-Acheampong, A., Kretchy, I. A., Acheampong, F., Afrane, B. A., Ashong, S., Tamakloe, B., & Nyarko, A. K. (2017). "Perceived Stress And Quality Of Life Of Pharmacy Students In University Of Ghana. *BMC Research Notes*, 10(115).
17. Rodgers, S., Maloney, B., Ploderer, B., & Brereton, M. (2016). "Managing Stress, Sleep and Technologies: An Exploratory Study of Australian University Students". *OzCHI '16*, 526-530
18. Sorrel Brown (2010) Likert Scale Examples for Surveys
<https://www.extension.iastate.edu/Documents/ANR/LikertScaleExamplesforSurveys.pdf>
19. Taylor JN, Taylor DA, Nguyen NT. The Pharmacy Student Population: Applications (2017). *Am J Pharm Educ*. 81(7): S8.
20. Romanelli F, Cain J, Smith KM. (2006). Emotional intelligence as a predictor of academic and/or professional success. *Am J Pharm Educ*;70(3):Article 69
21. Sucher B, Nelson M, Brown D (2013). An elective course in leader development. *Am J Pharm Educ*.; 77(10).
22. Allen SJ, Shankman ML, Miguel RF (2012). Emotionally intelligent ladership: an integrative, process-oriented theory of student leadership research and theory. *J Leadersh Educ*;11 (1):177-203.

Khảo sát các biện pháp tự quản lí stress của sinh viên Khoa Dược Đại học Nguyễn Tất Thành

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Tóm Tắt Tổng quan: Sinh viên Dược là đối tượng có tần suất stress cao hơn các sinh viên thuộc nhóm ngành sức khỏe khác. Stress gây ra những ảnh hưởng có hại cho sức khỏe và khả năng học tập của sinh viên. Các chiến lược ứng phó là nỗ lực mà một cá nhân sử dụng để quản lí stress. Mục tiêu: xác định các chiến lược tự bản thân sinh viên Dược Trường Đại Học Nguyễn Tất Thành sử dụng để ứng phó với stress. Từ đó, đề xuất các giải pháp liên quan đến việc cải thiện chất lượng giảng dạy, môi trường học tập và tư vấn cho sinh viên. Phương pháp nghiên cứu: nghiên cứu mô tả cắt ngang được tiến hành trên 436 sinh viên từ năm 1 đến năm 5 - Khoa Dược, Đại học Nguyễn Tất Thành - với bảng câu hỏi đã được phê chuẩn. Kết quả: sinh viên năm 4 (khóa 2015) có tần suất stress “luôn luôn” chiếm tỉ lệ cao nhất (33,7%), sinh viên năm 2 có tần suất stress “luôn luôn” chiếm tỉ lệ thấp nhất (25,6%). Kết quả cho thấy kĩ năng giải quyết vấn đề và tái cấu trúc nhận thức được sinh viên sử dụng nhiều nhất. Trong khi đó, bày tỏ cảm xúc là kĩ năng ít được sinh viên áp dụng nhất trong quản lí stress.

Từ Khóa stress, sức khỏe tâm lí, sức khỏe tinh thần, môi trường giáo dục ngành Dược, kĩ năng ứng phó, CSI, sinh viên Dược, Trường Đại Học Nguyễn Tất Thành

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