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DOES MEDICAL STUDENTS' SYNDROME REALLY EXIST? A CROSS-SECTIONAL STUDY

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ABSTRACT

Background*: Medical students' syndrome is the phenomenon in which students may think their physiological changes related to serious diseases they are learning. Nevertheless, there is no anecdotal evidence showing that this syndrome exists.* ***Objectives:*** *This study researched this condition in terms of differences between medical and non-medical students in help – seeking behaviour.* ***Methods:*** *We conducted a cross-sectional study. Data was collected by using question sheets which were slightly corrected and translated into Vietnamese and then handed for third – year medical students (n = 270), sixth-year medical student controls (n = 254) and third-year non-medical student controls (n = 150) from Can Tho University of Medicine and Pharmacy and Can Tho University. We calculated Help – seeking behaviour by using the "Health Anxiety Questionnaire" reassurance – seeking behaviour subscale; the overall number of consultants since starting university; a new "Hypochondriacal and Help – Seeking Behaviour" scoring – system.* ***Results:*** *No statistical significance was found between third – year medical students and control groups in Health Anxiety Questionnaire reassurance – seeking behaviour subscale and "Hypochondriacal and Help – Seeking Behaviour" scoring-system. In term of the number of doctors' visits, third – year non-medical group got a higher score than third – year medical students' one.* ***Conclusions****: The conclusion that medical students is more likely to acquire this syndrome than the others are unfounded. The doctor should not pay attention to "medical student's syndrome" when examining medical students in order to improve the relationship between physician and patient. Besides that, medical students should always attach special importance to patients' complaints.*

Keywords: *Health concerns; Help-seeking behavior; Medical student syndrome.*

I. INTRODUCTION

Medical schools with extremely difficult examinations at school, competitive environments among students, lots of workload in hospitals are supposed to make medical students get very depressed and stress. Besides that, medical students have rigorous preclinical and clinical experiences for medical knowledge. This has been concerned to have a serious impact on symptom perception of medical students, which means students may think their normal and physiological changes related to serious diseases they are studying or ones they had seen in the hospital – a phenomenon usually named 'medical students' syndrome'. Previous researchers had divided medical students' syndrome into two components: emotional – distress process and perceptual – cognitive process. The article [1]"Reassuring the medical students' disease – health-related anxiety among medical students" of Azuri J1, Ackshota N, Vinker S could be taken as a salient example of this. In addition, the research[2] "Health – Related Anxiety and Hypochondriacal Concerns in Medical Students: A Cross – Sectional Study From Pakistan" of Zahid MF, Haque A, Aslam M, Aleem NA, Hussain S, Fahad H, Naqvi HA, Ghias K had investigated the number of doctors' visit related to health concerns. Last but not least, according to Lauren Z Waterman and John A Weinman lots of researches only quantified the number of doctors'

visits, did not evaluate the nature of consultants because there are many different reasons to visit the doctor such as injuries, the usual examination of health. The research [3] "Medical student syndrome: fact or fiction? A cross – sectional study" of Lauren Z Waterman and John A Weinman had overcome these drawbacks. However, the question should be slightly corrected to be suitable for this study and translated into Vietnamese for students to easily understand and answer. Unlike a lot of researches about medical students' syndrome in the world, in Vietnam, there is no research about this phenomenon. This study is based on the research of Lauren Z Waterman and John A Weinman in terms of methods of the study and aimed to investigate the presence of medical students' syndrome in Can Tho University of Medicine and Pharmacy.

II. METHODS

2.1. Study population and setting

We chose medical students, non-medical students from two universities: Can Tho University of Medicine and Pharmacy and Can Tho University. The reason why we chose third-year medical students is students started studying symptoms in the third year at medical schools. Besides that, we followed some rules which Lauren Z Waterman and John A Weinman used to recruit and exclude participants: the third-year students would be less likely to have forgotten any health concerns since they were freshmen than the older. Those who had taken any year away from their course or had other education before their present course and Biology and Biotechnology students were excluded because of some reasons that we can find more details in the article "Medical student syndrome: fact or fiction? A cross-sectional study**".** Unlike Lauren Z Waterman and John A Weinman, we recruited the sixth – year medical students to allow comparisons with third- year medical student to identify the decrease of health anxiety score.

2.2. Study design

We conducted a cross-sectional study that used self – reported questionnaires. Like Lauren Z Waterman and John A Weinman: participants were classified into three groups according to their majors and year at university, and data were sought included to medical reassurance – seeking behaviour and their doctors' visits since they became freshmen. Analytical tests of difference amongst the three groups were carried out.

2.3. Study contents

Data were collected about 4 months period from May to August 2019 in Can Tho city. We also followed the way of Lauren Z Waterman and John A Weinman's research to collect data: The researchers approached students and then handed question sheets to them and explained clearly the way to fill the sheets without telling anything about the study. After that, interviewees were supplied adequate space to complete questionnaires with privacy during the time of data collection. There was no personal information filled in the sheets. The research instrument employed was 'Student Health Questionnaire' (Appendix 1) which is from the research "Medical student syndrome: fact or fiction? A cross – sectional study" of Lauren Z Waterman and John A Weinman after that it was translated and corrected. The questionnaire first asked for basic general information such as age, gender, ethnicity, university, some questions for screening. "Health Anxiety Questionnaire" – reassurance – seeking behaviour subscale is originally from [4] "The Health Anxiety questionnaire" of Michael P. Lucock and Stephen Morley. In this score, we just calculated

3 per 6 questions. In the 'Hypochondriacal and Help-Seeking Behaviour (HHSB), the participants were asked to describe doctors' consultants since becoming first-year students in their university. For each health concern, participants were asked details about their consultants to find out the characteristics of doctors' visits. Finally, participants would be asked after given a benign diagnosis, they believed or not and worried about the wrong diagnosis so as to identify students' fear. (Details about questionnaire can be found in Lauren Z Waterman and John A Weinman's study).

2.4. Statistical Analysis

We applied the way calculated the score of Lauren Z Waterman and John A Weinman's study: In terms of HAQ score, with questions 3, 5, 6 we gave 0, 1, 2, 3 point(s) for Not at all or rarely, Sometimes, Often, Most of the time, respectively. HAQ score was established by added all of these points. However, we corrected the definition of "serious diseases" due to our limited abilities. We redefined "serious disease is the one that may be life-threatening". Whenever a participant reported in the questionnaire, they thought they could have "serious disease" but was diagnosed with a "non – serious disease", one point was awarded. Each time they reported they did not believe in benign diagnosis, one more point was awarded. For each participant, we calculated the total score which was "HHSB score". And the quality of doctors' consultants since the beginning university was counted since beginning university. Collected data were inputted into the statistical program SPSS (version 20.0). We check all numerical data to identify whether they are normal distribution or not, only numerical variables that were approximately normally distributed were analyzed using parametric tests, for example, one-way ANCOVA test for the HAQ – subscale scores. We used Mann Whitney tests in order to perform between – Groups' analysis in terms of HHSB score measure and the number of doctors' visits.

2.5. Ethics Approval

Ethical permission was obtained from Can Tho University of Medicine and Pharmacy and Can Tho University. Participants totally agreed with us to take part in this study.

III. RESULTS

The data of 674 students [370 (54.9%) female, 587 (87.1%) Kinh people have participated in this study and completed questionnaires, including 270 third – year medical students, 254 sixth – year medical students and the remaining was non-medical students. By using one-way ANOVA to analyze, we recorded that there is no discrepancy in the HAQ – subscale score when making a comparison among three groups ($p = 0.352 > 0.05$). Although the average score of HAQ – subscale of third – year medical student group is lower than that of last – year medical students one, the difference is not statistically significant (3.71 and 3.80, p = 0,929). When confronting between two groups of third – year student in the gender aspect, it is clear that female participants scored significantly higher than male ones in HAQ-subscale score ($t = -2.163$, $df = 418$, $p = 0.031 < 0.05$). In addition, HHSB score observed in third – year medical student group was higher compared to non-medical students group but still has no statistical meaning ($U = 19786.500$, $Z = -0.705$, $p = 0.484$). It is worth noting that the number of doctor visits in these two groups has a significantly statistical divergence with a mean rank of non-medical student group and medical students one is 238.94 and 194.70 ($U = 15984.500$, $Z = -4.153$, $p < 0.001$), respectively. However, HHSB score and overall number of doctors' visits are the same in two groups of gender:

HHSB score (U = 21455.500, Z = -0.074, p = 0.941) and the overall number of doctors' visits since they were freshmen (U = 19542.500, Z = -1.855, p = 0.064). We did not consider six – year medical students in comparisons of HHSB score and a number of medical consultations due to time factor. There is no relationship between both ethnicity and history of mental disease with health reassurance – seeking behaviour as measured by HAQ – subscale score (t = 1.027, df = 418, p = 0.305), HHSB score and the number of doctor's visits (p = 0.980 and p = 0.140, respectively).

Table 1. Descriptive statistics of HAQ – subscale scores by comparison three groups (p = 0.352 > 0.05).

Group	Total	Minimum	Maximum	Mean	Std. deviation
Third – year non-medical student	150	0	9	3.55	1.407
Third – year medical student	270	0	9	3.71	1.832
Sixth – year medical student	254	0	9	3.80	1.706

Table 2. Descriptive statistics for HHSB score (between two groups of third – year students) (p = 0.484).

	Total	Minimum	Maximum	Mean	Std. deviation
Third-year non-medical student	150	0	2	0.11	0.331
Third-year medical student	270	0	3	0.14	0.385

Table 3. Descriptive statistics for number of doctors' visits (between two groups of third – year students) (p < 0.001).

	Total	Minimum	Maximum	Mean	Std. deviation
Third-year non-medical student	150	0	3	0.60	0.62
Third-year medical student	270	0	4	0.38	0.609

IV. DISCUSSION

Most of the outcomes we obtained were similar to those of Lauren Z Waterman and John A Weinman (2014). With resemblances in the research method of the two studies, the findings have led us to a conclusion that concept assumed medical students, especially third – year ones, more likely to acquire this syndrome than other kinds of students are unfounded. However, there are a few divergent sub – outcomes detected that need to be discussed and explained. First of all, the average of HAQ – subscale score in sixth – year student group is higher than that of third – year students one despite it is not statistically significant. There are many directions to illuminate this, including through years of study and research at medical school, we have drawn some personal judgments that the final – year medical students possessed an expanded – horizon in professional knowledge and skill, results in well – comprehended various diseases, encompassing scarce ones. In addition, underwent a long period of time to train clinical practices, which has helped them to approach to

processes of medical examinations and therapies, thereby forming behaviors of self – diagnosis; some shall seek advice from their friends who are expert on those sides; others will explore in order to obtain more grasp of illness on their own; obviously sixth – year students are better compared to the third – year ones in this aspect. However, there is a fact that we have to recognize, even though medical final year students obtained plentiful knowledge, it is still not sufficient to elucidate all the physical changes, leads to worry about illness. On the other hand, final – year medical students also face up to enormous studying intensity and tough graduation exams, thereby it is inevitable that prolonged stress and fatigue will lead to a state of anxiety, excessively thinking, it is also an important impact on their perception of their own illnesses. The latter is that HSSB score of the third – year medical student group is higher than that of non-medical students remaining despite it still not statistically significant. In order to explain this result we totally agreed with Lauren Z Waterman and John A Weinman that a significant number of third – year non-medical students have problems as mentioning diseases they suspected, they cannot give the specific names of diagnosis. For example, they have a bias to report "something wrong in the abdomen" or "the heart disease". Therefore, we are not capable of elucidating whether they exaggerate their own illnesses or not. In general, the divergences are not significant because of the growing interest of non – medical students in health sciences. According to Lauren Z Waterman and John A Weinman, the development of social media is a material connection to bring them closer to the medical horizon, which leads to shortening the gapbetween two groups. However, we should take into account the fact that it is very difficult for non-specialised person to find useful information about the health care system on the Internet. Therefore, we suggested that non-medical students need to be taught how to find reliable sources of information. Thirdly, unlike the two differences above, the dissimilarity in the number of medical consultations between two groups of third – year students are significant. Obviously, non-medical student group is inferior compared to the former in this specific aspect. They would more likely to go to the doctors whenever they had any symptoms even the symptoms were not really serious. While medical students are more confident to diagnosis some diseases on their own so that they do not need to seek medical consultants. Eventually, female subjects have a greater number of symptoms than male ones, which can also be explained by their sensitivity as well as the excessive anxiety to health matters they suffering. In other words, health is more concerned with female students.

V. CONCLUSIONS

We have a consensus with the conclusions and explanations of Lauren Z Waterman and John A Weinman when researching this problem. The conception that "Medical Students' syndrome" is more common in medical students, which is not absolutely accurate. These findings also lead to some clinical implications: Firstly, the physicians should not pay attention to the phenomenon called "medical students' syndrome", doctors have to carefully examine to identify the presence of disease being missed. This would be enhancing the patient - physician relationship. Secondly, lectures could bring this syndrome into the lessons to teach medical students how patients feel about their symptoms so that they can thoroughly examine to find down their illnesses.

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

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Appendix 1: STUDENT HEALTH QUESTIONNAIRE

PLEASE **DO NOT** WRITE YOUR NAME ON THIS QUESTIONNAIRE (All questionnaires will be kept **anonymous.)**

I. BASIC INFORMATION

1. Age: .....
2. Gender: ❑ Male ❑ Female
3. Ethnicity: ❑ Kinh ❑ others
4. Year of study ……..
5. Major: …….
6. Have you retaken any years at university?

   ❑ Yes ❑ No
7. Have you taken any years out from your course, to intercalate in another degree or for any other reason?

   ❑ Yes ❑ No
8. Have you ever been diagnosed with a mental health disorder?

   ❑ Yes ❑ No

   If yes, please describe the disorder(s) and estimate the year you were diagnosed

II. THE PROFESSIONAL:

Below is a list of questions. Please indicate whether, ***during the past month,*** each statement has been relevant to you 'not at all or rarely', 'sometimes', 'often' or 'most of the time'. Please tick the appropriate boxes.

	Questions	Not at all or rarely	Sometimes	Often	Most of the time
1	Do you smoke?				
2	Do you brush your teeth twice per day?				
3	When you experience unpleasant feelings in your body do you tend to ask friends or family them?				
4	Do your friends and family ask you for medical advice?				
5	Do you tend to read up about illness and diseases to see if you may be suffering from one?				
6	Do you ever examine your body to find whether there is something wrong?				

Please fill out this form, describing the medical advice you have sought **since beginning university.** This includes visits to the doctor and medical advice sought from friends, relatives or colleagues who are medical professionals/medical students. Please use 1 row for each different health concern. (Please "No" if not health concern)

Month and Year of when advice was sought (_/_)	What symptom(s) had you experienced ?	Were you concerned your symptoms could be due to something serious? If so, what did you think this could be?	How long after first experiencing the symptoms did you seek medical advice?	Whom did you seek medical advice from?	What tests / investi-gations did you receive ?	What diagnosis were you given?	After the diagnosis, did you continue to worry that something serious may be wrong?

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