
ORIGINAL ARTICLE

Medical student syndrome among medical and dentistry students
in Hail University, Saudi Arabia

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ABSTRACT

The aim of this study is to find out the prevalence of Medical student syndrome (MSS) at Hail University among medical and dentistry students, because the prevalence differs over the years, and regions. It's a Cross-sectional study. The survey was completed in two months, from Jan 2020 to Feb 2020, at Hail University, KSA. The data was collected using the Hypochondria/Health Anxiety Questionnaire, with some modifications which was distributed electronically. The data was analyzed by using Statistical Package for Social Science (SPSS-22). The unrealistic fears about illnesses recorded in this study among medical students were higher than their peers studying majorly, one non-medical.

KEY WORDS: Medical student syndrome, Hypochondriasis, International Classification of Diseases

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INTRODUCTION

It's widely believed that many of medical students repeatedly develop a fear of illness relating to the diseases that they are studying at the time [1]. This phenomenon called Medical student syndrome (MSS) which limited to medical students; anyone who reads medical material is susceptible to have it. As they read about these diseases, students are susceptible to believe that they have a symptom, or a sign associated with such diseases. It is a form of hypochondriasis. Hypochondriasis is a unique disorder with the primary feature of persistent preoccupation with the possibility of having one or more serious and progressive physical disorders [International Classification of Diseases, 10th Edition (ICD-10)]. Hypochondriasis is classified as a somatoform disorder in ICD-10 and DSM-IV-TR [2,3]. According to DSM-IV-TR, the main characteristics of hypochondriasis are the preoccupation with fears of having, or the idea that one has a serious disease based on the person's misinterpretation of bodily symptoms (Criterion A), the persistence of the preoccupation despite appropriate medical evaluation and reassurance (Criterion B), the necessity that the beliefs in Criterion A are not of delusional intensity (Criterion C), that the preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion D), and the duration of those features for at least six months (Criterion E) [3]. The prevalence of the full ICD/DSM diagnosis of hypochondriasis is rare in general populations. However, there is evidence that the current diagnostic criteria are too restrictive and that at least the adherence to the B criterion seems unjustifiable and falls short of the clinical relevance of hypochondriacal phenomena [4]. Dysmorphic appearance was the most common concern in patients with hypochondriasis and SSRIs the most common medications. The follow-up rate and the diagnostic concurrence with DSM-5 IAD and DCPR were low [5]. Earlier studies have shown that there was a high prevalence of MSS among medical students, but recent studies show a declining trend [6]. The aim of this study is to find out the prevalence of Medical student syndrome (MSS) at Hail University among medical and dentistry students, because the prevalence differs over the years, and regions.

MATERIAL AND METHODS

This study was carried out from Jan 2020 to Feb 2020 at Hail University, Kingdom of Saudi Arabia (KSA), among pre-clinical students, clinical students, interns and residents of medical and dentistry colleges in accordance with research guidelines of the College of Medicine, Hail University, KSA.

The Hypochondria/Health Anxiety Questionnaire (HAQ), developed by the Obsessive Compulsive Centre of Los Angeles, with some changes in the questions to simplify it for the participants, was used to collect the data.

Results of this questionnaire were analyzed as under:

A) 1 to 3 test items checked: there is a low probability that the student has health anxiety, and it is unlikely that the student concerns significantly impact his/her life.

B) 4 to 7 test items checked: there is a medium probability that the student has health anxiety, and a moderately high amount of distress related to specific health-related thoughts.

C) More than 7 test items checked: there is a high probability that the student has health anxiety.

The questionnaire was distributed using google form. The questionnaire contained demographic data of the participants including age, gender, academic year, college. Neither names nor any other personal information were required, and participants were assured of the privacy of their responds.

The data was analyzed by using Statistical Package for Social Science (SPSS-22).

RESULT

The total of 213 participants demographic and inferential analysis techniques applied in assessing the prevalence rate of medical student syndrome among medical and dentistry students and management in Hail University, KSA.

Table 1 above shows the distribution on the age range of the respondents that participated in the study where it was seen that 59(27.7%) of the respondents claimed to be within the age range of 18-20years as at the time of this study and 144(67.6%) which takes the largest percentage of the total respondents claimed the respondents where it was revealed that majority of the respondents that participated in the research which account for 139(65.3%) of the respondents claimed to be female while 74(34.7%) claimed to be males.

Table 1. Demographic Characteristics of the Participants		
Age		
	Frequency	Percent
18-20	59	27.7
21-25	144	67.6
26-30	10	4.7
Total	213	100.0
Gender		
	Frequency	Percent
female	139	65.3
male	74	34.7
Total	213	100.0
College		
	Frequency	Percent
dentistry	80	37.6
medicine	133	62.4
Total	213	100.0
Academic year		
	Frequency	Percent
2 nd	42	19.7
3 rd	38	17.8
4 th	64	30.0
5 th	15	7.0
6 th	19	8.9
intern	25	11.7
resident	10	4.7
Total	213	100.0

This shows that female gender participated in the study than their male counterpart. In addition, Table 1 above shows the distribution of the college that the respondents belong to and it was seen that larger

percentage which takes 133(62.4%) of the respondents that participated in the study claimed to be from medicine college while 80(37.6%) claimed they are from the dentistry college. Finally, the table shows the distribution on the academic year of these respondents that participated in the study where it was recorded that largest percentage of the respondents which takes 64(30.0%) claimed they are in 4th grade as at the time of this study; 42(19.7%) of the respondents claimed they are in 2nd grade; 38(17.8%) of these respondents claimed they are in 3rd grade; 25(11.7%) claimed they are doing their intern at the university; 19(8.9%) claimed they are in 6th grade while 15(7.0%) of the respondents claimed they are in 5th grade and 10(4.7%) claimed they are resident.

To fall within the age range of 21-25years while 10(4.7%) of the respondents also claimed to be within the age range of 26-30years. It also, shows the distribution on the gender distribution of female and male.

Table 2 showing the distribution of objective questions.

Number	VARIABLES	YES	NO
Q1	I usually have more worries about having a serious illness, disease, or medical condition than most people I know	102(47.9%)	111(52.1%)
Q2	I recognize and observe any sensations, aches, pain and/or other symptoms of what I think can be illness, disease or medical condition	147(69.0%)	66(31.0%)
Q3	I regularly check my body for signs of illnesses, diseases or medical condition	82(38.5%)	131(61.5%)
Q4	I sometimes check others (spouse, children, parents and/or friends)	117(54.9%)	96(45.1%)
Q5	I stay away from certain people, places, things or situations because of the fear of a disease or illness	75(35.2%)	138(64.8%)
Q6	I spend a lot of time on the internet, medical texts, and health related books researching about specific illness, disease or medical condition	80(37.6%)	133(62.4%)
Q7	I avoid TV shows, movies, articles and/or reports containing any medical/health content	42(19.7%)	171(80.3%)
Q8	I often go to more than one doctor for the same medical concern because I doubt the doctor's diagnosis, especially if they can't find something wrong with me.	50(23.5%)	163(76.5%)
Q9	I worry about having a disease or illness when I hear about it (from media, or someone I know), or when I read about it	83(39.0%)	130(61.0%)
Q10	My relationships and/or my academic performance are affected by my concerns about my health	55(25.8%)	158(74.2%)

Table 2 shows the distribution of some objective variables where majority of the respondents that participated in the study which account for 111(52.1%) claimed they do not usually have more worries about having a serious illness, disease, or medical condition than most people they know and 102(47.9%) of these respondents claimed they usually have more worries about having a serious illness, disease, or medical condition than most people they know; 147(69.0%) claimed they recognize and observe any sensations, aches, pain and/or other symptoms of what they think can be illness, disease or medical condition; 131(61.5%) claimed they don't regularly check their body for signs of illnesses, diseases or medical condition; 117(54.9%) of these total respondents claimed they sometimes check others (spouse, children, parents and/or friends); 138(64.8%) of the respondents claimed they have no reason to stay away from certain people, places, things or situations because of the fear of a disease or illness; 113(62.4%) claimed they don't spend lots of time on the internet, medical texts, and health related books researching about specific illness, disease or medical condition; 171(80.3%) said they do not avoid TV

shows, movies, articles and/or reports containing any medical/health content; 163(76.5%) of the respondents claimed they rarely go to more than one doctor for the same medical concern because they doubt the doctor's diagnosis, especially if they can't find something wrong with them; also,130(61.0%) of these respondents that participated in the study claimed they do not worry about having a disease or illness when they hear about it (from media, or someone they know), or when they read about it and 158(74.2%) also claimed their relationships and/or their academic performance are affected by their concerns about their health.

I have visited doctors for my sign/ times, during the past 12months due to my fears of having a disease, illness, medical condition.

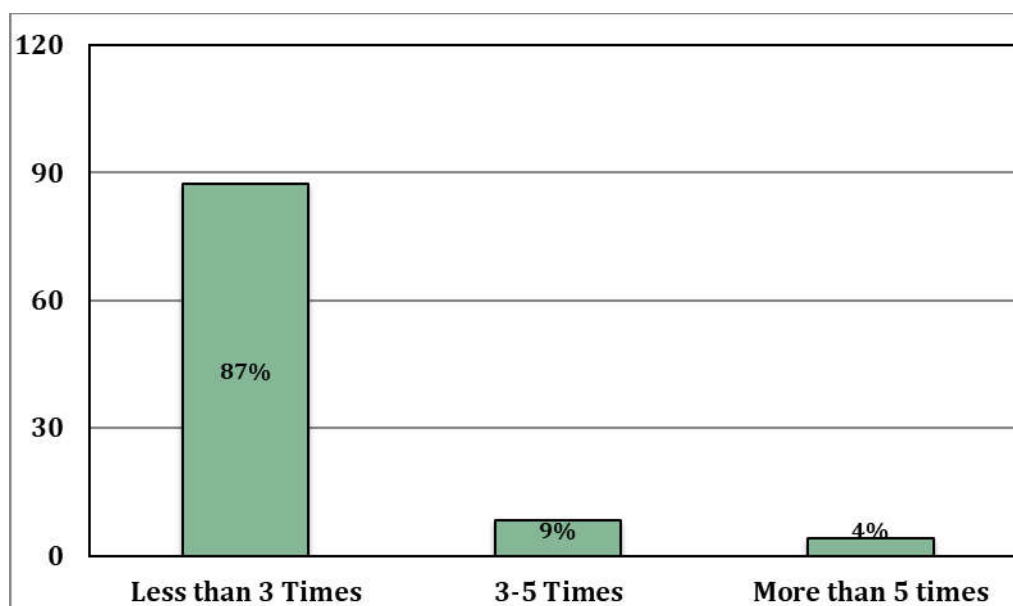


Figure 1 shows the distribution on visitation to doctor's office

The above Figure 1 shows the responses of the respondents on the number of times they have visited doctors during the past 12months due to their fears of having a disease, illness or medical condition and 186(87.3%) which takes the largest percentage of the respondents claimed they have visited less than 3times, 18(8.5%) claimed they have visited between 3-5times, while 9(4.2%) claimed they have visited for more than 5times. This shows many have fewer visitations to doctor's office for the fear of having a disease, illness or medical condition.

Table 3, distribution on the number of hours the respondents spend obsessing about my health

I spend.... obsessing about my health		
	Frequency	Percent
less than 6 hours a day	192	90.1
6-12 hours a day	10	4.7
most of the day	8	3.8
the whole day	3	1.4
Total	213	100.0

The above table 3 shows the distribution on the number of hours the respondents spend obsessing about my health from where largest percentage of the respondents which account for 192(90.1%) claimed they spend less than 6 hours a day; 10(4.7%) claimed they spend between 6-12 hours a day; 8(3.8%) of the respondents claimed they spend most of the day obsessing about their health while 3(1.4%) claimed they spend the whole day obsessing about my health.

Table 4, Distribution on when the respondents got their fear of having a disease, illness, or medical condition

I got my fears of having a disease, illness, or medical condition		
	Frequency	Percent
before studying medicine/dentistry	67	31.5
after studying medicine/dentistry	117	54.9
before and after	2	.9
I don't have any excessive fears	1	.5
no relation	1	.5
None	25	11.7
Total	213	100.0

The above table 4 shows the distribution on when the respondents got their fear of having a disease, illness, or medical condition and majority of the respondents which takes 117(54.9%) claimed they got the fear after studying medicine/dentistry; 67(31.5%) claimed they got their fear before studying medicine/dentistry; 25(11.7%) claimed none of the above listed observation triggered their fear; just 2(0.9%) claimed they got the fear before and after their study and 1(0.5%) claimed they don't have any excessive fears. That shows that majority of the respondents got their fear because of what the study.

Table 5, distribution regarding the previous table on the notion on the time they got their fear if they got it after studying medicine.

If after studying medicine, was it...		
	Frequency	Percent
valid	97	45.5
during preclinical years	70	32.9
during clinical years	45	21.1
during preclinical and clinical years	1	.5
Total	213	100.0

Table 5 shows the distribution regarding the previous table on the notion on the time they got their fear if they got it after studying medicine and majority of the respondents that attended to the question which account for 70(32.9%) of the total respondent claimed they got the fear during preclinical years while 45(21.1%) of these total respondents claimed they got the fear during clinical years.

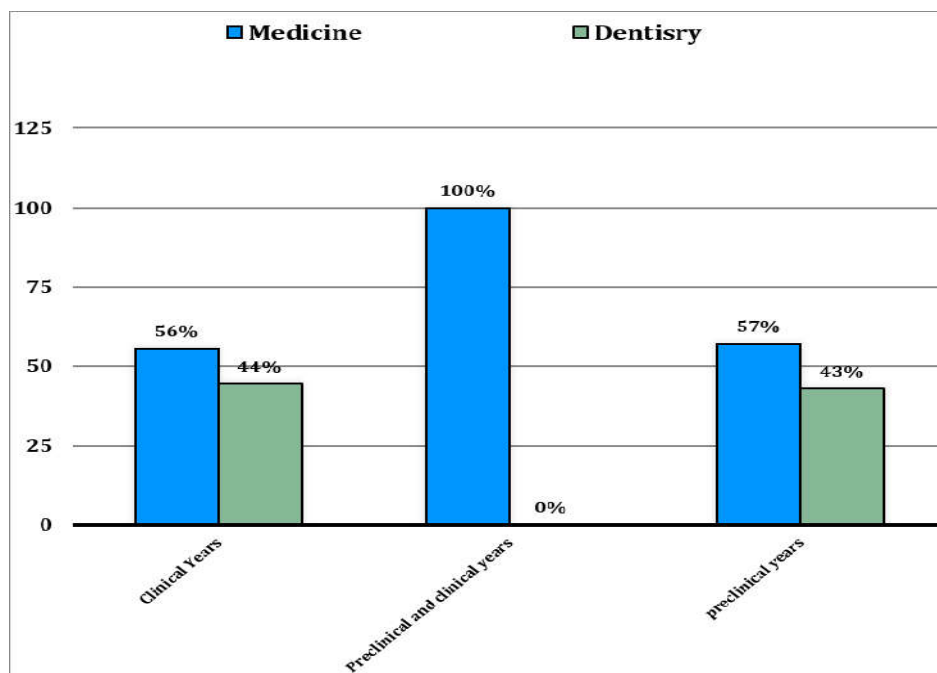


Figure 2, Medical student Syndrome in Students of College of medicine and College of Dentistry

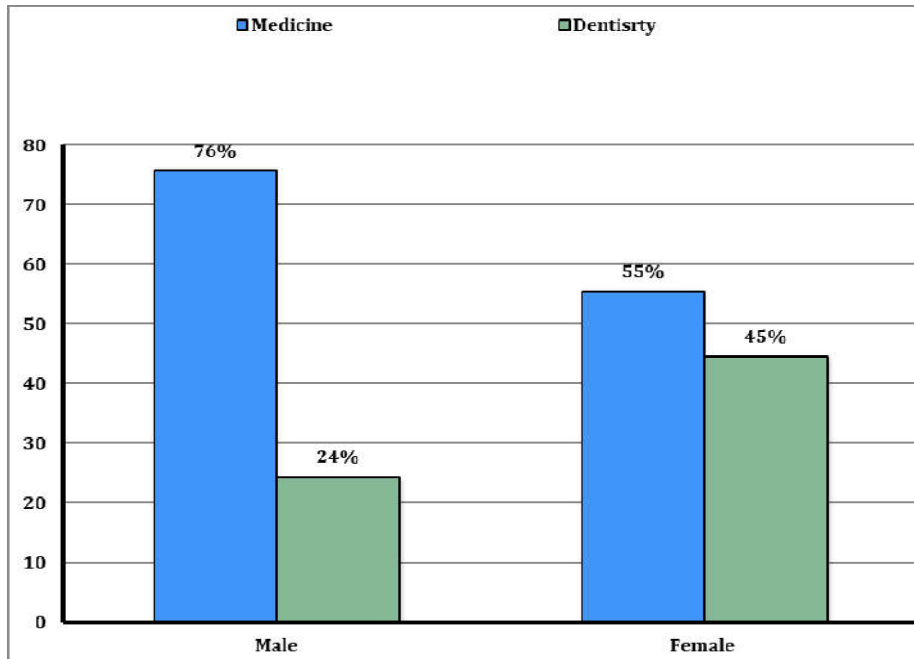


Figure 3, Gender * College

The above table and chart shows the gender distribution with respect to medical students and dentistry.

HYPOTHESES TESTING OF ASSOCIATION BETWEEN VARIABLES

Hypothesis 1

H₀: There is no difference in mean between medical students and dentistry

H₁: There is difference in mean between medical students and dentistry

Level of Significance (α): 0.05

Table 6.1 Showing Comparison of students about their illness

Group Statistics					
	College	N	Mean	SD.	SEm.
I usually have more worries about having a serious illness, disease, or medical condition than most people I know	DENTISTRY	80	1.00	.000	.000
	MEDICINE	133	1.83	.373	.032

Table 6.2: Comparison of students Perception about Medical students Syndrome

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
I usually have more worries about having a serious illness, disease, or medical condition than most people I know	Equal variances assumed	97.728	.000	-19.996	211	.000	-.835	.042	-.917	-.752
	Equal variances not assumed			-25.807	132.000	.000	-.835	.032	-.899	-.771

Table 6.2 revealed the independent sample test of college base on their perception on if they usually have more worries about having a serious illness, disease, or medical condition than most people they know, where it is seen that the probability value is less that the significant value (p-value 0.000<0.05), we therefore do not accept the null hypothesis and conclude that there is difference between the mean of both medical students and dentistry students based on the claimed variable. Table 6.1 also shows the mean and standard deviation of the college variables based on the studied variable.

Hypothesis 2

H₀: There is no difference in mean between medical students and dentistry

H₁: There is difference in mean between medical students and dentistry

Level of Significance (α): 0.05

Table 7.1 Students response toward Medical student Syndrome about level of worries

Group Statistics					
	College	N	Mean	SD	SEm.
I worry about having a disease or illness when I hear about it (from media, or someone I know), or when I read about it.	DENTISTRY	80	2.00	.000	.000
	MEDICINE	133	1.38	.486	.042

Table 7.2 Showing comparison between medical and dentistry students about their symptoms having MSS

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
I worry about having a disease or illness when I hear about it (from media, or someone I know), or when I read about it.	Equal variances assumed	1208.017	.000	11.470	211	.000	.624	.054	.517 .731
	Equal variances not assumed			14.803	132.000	.000	.624	.042	.541 .707

Table 7.2 revealed the independent sample test of college base on their perception on if they worry about having a disease or illness when they hear about it or read about it, and it can be seen that the probability value is less that the significant value (p-value 0.000<0.05), we therefore do not accept the null hypothesis and conclude that there is difference between the mean response of medical students and dentistry students based on the claimed variable. Table 7.1 also shows the mean and standard deviation of the college variables based on the studied variable.

Hypothesis 3

H₀: There is no difference in mean between medical students and dentistry

H₁: There is difference in mean between medical students and dentistry

Level of Significance (α): 0.05

Table 8.1 Students response toward Question about fear for Having symptoms of Medical Student Syndrome

Group Statistics					
	College	N	Mean	Std. Deviation	Std. Error Mean
I got my fears of having a disease, illness, or medical condition	DENTISTRY	80	1.00	.000	.000
	MEDICINE	133	3.02	1.697	.147

Table 8.2 Showing Fear of having Medical Students syndrome

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
I got my fears of having a disease, illness, or medical condition	Equal variances assumed	72.150	.000	-10.613	211	.000	-2.015	.190	-2.389	-1.641
	Equal variances not assumed			-13.697	132.000	.000	-2.015	.147	-2.306	-1.724

Table 8.2 revealed the independent sample test of college base on when they get their fears of having a disease, illness or medical condition, where it can be seen that the P-value is less that the significant value (p-value 0.000<0.05), we therefore do not accept the null hypothesis and conclude that there is difference between the mean of when medical students get their fear to when dentistry students get theirs. Table 8.1 also shows the mean and standard deviation of the college variables based on the studied variable.

DISCUSSION

The unrealistic fears about illnesses recorded in this study among medical students were higher than their peers studying majorly, one non-medical course (dentistry) at Hail University KSA; however, the difference was significant. The study analysis revealed correspondingly higher prevalence of health anxiety during preclinical years than clinical years as shown in Table 5. Possibly during the pre-clinical years, students have an improved sense of body awareness and stress as illustrated by Moss-Morris et al.[7] The authors in the above study described this syndrome as a normal perceptual process and differentiated it from common hypochondriasis. Other researchers [8.9]as well affirmed this. Different studies had been done to compare the prevalence of medical syndrome between medical and non-medical students. Some of the studies favored higher anxiety level in the medical students because of their curricula design and clinical exposure [10]

The fear of acquiring a future disease is a core feature of health anxiety, while fear of already having a disease is considered more central to the MSS [11]. There are number of instances where this syndrome manifests among students from time to time during their training. The students are mostly known to change their diagnosis depending upon their clinical rotation. For instance, in a psychiatry rotation, the student conceptualizes having schizophrenia and later shifts his or her diagnosis to Meniere's disease during an ear, nose and throat (ENT) rotation. The symptoms are thought to occur due to intensive exposure to knowledge affecting symptom perception and interpretation ⁷; the fact remains that the affected student is devoid of either. At times, the simple understanding of the location of the appendix transforms the most harmless sensations in that region into symptoms of a serious threat[12].The students who study "frightening diseases" for the first time routinely experience intense delusions of having the disease, reflecting a temporary kind of hypochondriasis[13].

In some studies it was observed that 80% of medical students conceptualize diagnoses ranging from tuberculosis to cancer while studying these diseases during training [14.15]. This caused emotional

distress and conflict in the students. It was suggested that this phenomenon was present in approximately 70-80% of students in the study mentioned above. There may be many reasons for precipitation of this condition among medical students. The vastness of medical studies is unarguable, and medical schools cause's students to experience a large amount of psychological pressure due to work required to grasp the subject matter, the stress of examinations, and the competitive environment [16,17].

In this study, we compared medical students with the students of dentistry with the same measure to compare the prevalence of medical student syndrome among medical students and dentistry and it was shown that there is difference in mean between the medical students and dentistry students in terms of this prevalence of medical syndrome as earlier stated that the course of study influence this prevalence in medical students.

CONCLUSION

We can therefore conclude that medical students are more vulnerable to conditions like Medical student syndrome, so there is a need to counsel medical students on the symptoms of Medical Student Syndrome as well as to support the students by discussing different techniques to subdue the stress level. Also, there should be more orientation to these students immediately they get to the college on the likely things they would see and meet during the course of their studies so as to reduce the fear of these diseases they study since many claimed they generate their fears during the preclinical years. More so, males should be encourage to study these fields because the fear may be more in female gender, and since the study revealed more females participating in the study, there is every tendency to have more females in the field than males.

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