Medical Science

25(114), August, 2021

The prevalence of obsessive-compulsive disorder and symptoms among medical students: A perspective study from Riyadh, Saudi Arabia

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To Cite:
Khalaf AM, Alshuaibi SK, Bin-Abbas FB, Alwadie SA, Alrahili N, Bano F, Anwer R. The prevalence of obsessive-compulsive disorder and symptoms among medical students: A perspective study from Riyadh, Saudi Arabia. Medical Science, 2021, 25(114), 2088-2095

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Peer-Review History
Received: 17 July 2021
Reviewed & Revised: 19/July/2021 to 11/August/2021
Accepted: 13 August 2021
Published: August 2021

Peer-review Method
External peer-review was done through double-blind method.

ABSTRACT

Background: Obsessive-compulsive disorder (OCD) is a neuropsychiatric disorder portrayed by obsessions and compulsions that are distressing, tedious, or cause significant impedance. The most notable contents of obsessions incorporate excessive worry about contamination and diseases, which are an inducement to medical students since they are constantly exposed during medical school. This study aimed to evaluate the prevalence of obsessive-compulsive disorder among medical students in Imam University Riyadh, Saudi Arabia, and evaluate the common symptoms among those students. *Methodology*: A descriptive cross-sectional study is based on a questionnaire designed and distributed to medical students of the pre-clinical and clinical years. *Results*: An overall of 312 medical students have finished the survey, among whom 69.2% were males. The greater parts of the participants (90.4%) were between the ages of 18 and 24, with roughly 27.6% were in their third academic year. Moreover, we found that almost two-thirds of participants were satisfied with their academic performance (64.7%) while (74.7%) were happy with their social life, and 60.9 % did not have difficulties adapting to medical college. According to the Obsessive-Compulsive inventory used in this study, OCD was found to be prevalent in 36.2% of the population. Females and depressed students had considerably higher rates of OCD. *Conclusion*: OCD is abundant to a large extent among the females, those with depressive symptoms, and stress. Additionally, it is crucial to maintain their wellbeing with proper inductions, continuous support, periodic workshops, interactions with peers, and adjustment with society.

Keywords*:* Obsessive-compulsive disorder (OCD), medical students, psychiatry disorders, OCD symptoms, Saudi Arabia.

1. INTRODUCTION

Obsessions and/or compulsive behaviors that are bothersome, time-consuming, or cause substantial impairment define OCD, a neuropsychiatric illness. Obsession is looked at as repetitive or persistent thoughts that are intrusive, unwanted, and cause distress or anxiety, while compulsions (also called rituals) mean repetitive behaviours or mental acts that are not intrinsically pleasurable and are performed in response to an obsession (Grant et al., 2014; Veale et al., 2014). Thus, people can have obsessional thoughts, compulsive acts, or commonly have both (Lovell et al., 2017; Kookalani et al. 2020). In the United States, the percentage of OCD among adults is reported to be 1.2 percent over a period of 12 months and 2.3 percent throughout a lifespan. In adulthood, females are marginally more affected than males; however males are typically more affected in childhood (Fawcett et al., 2020). Chandavarkar et al., (2007) inspected obsessive-compulsive manifestations in 1050 medicinal pre-graduates from three colleges in California, USA.

The predominance of symptoms suggestive of OCD—examined utilizing the Leyton Obsessional Inventory Short Form—was 5.2%, and it was remarkably higher among first-year students. This predominance rate is four times greater than that revealed in the US overall public for the prior year in the National Comorbidity Survey Replication, which was 1.2 percent (Ruscio et al., 2010; Kessler et al., 2005). The following are the most prevalent mental illnesses that co-occur in adults with OCD: 76 percent have another anxiety disorder in their lifespan (e.g., panic disorder, social anxiety disorder, generalized anxiety disorder, specific phobia). In addition, 63% have a lifetime history of a mood disorder, most commonly major depressive disorder (41 percent). 23 to 32 percent have comorbid obsessive-compulsive personality disorder (Fawcett et al., 2020). Since medical students are repeatedly taught to be responsible and sterile and taught that any mistake could lead to terrible consequences, a psychological effect could happen and lead to the development of OCD (Torres et al., 2016). Nonetheless, according to some attributes, medical school can be considered to be a phase of self-improvement, accomplishment, and overall health, despite its obstacles and challenges.

Although, research show that the existing teaching method may unwittingly harm students' psychological wellbeing, with a greater incidence of depression, anxiety, and distress among medical students (Dyrbye et al., 2006). Most well-known obsessions include excessive solicitude with tainting and diseases, which are promoters to medicinal students since they are constantly exposed during the academic course. Therefore, it is conceivable that obstructive-compulsive symptoms are prevalent among this populace. Besides, the expanded responsibility and increased desire to learn at medical school can be related to anxiety symptoms in general and obstructive-compulsive symptoms specifically (Torres et al., 2016). In light of these observations, the purpose of this study was to assess the prevalence of obsessive-compulsive disorder among medical students and to analyse the symptoms that were frequent among those students at one Saudi medical school.

2. SUBJECTS AND METHODS

Study design and setting

A systematized questionnaire was developed by following the previously published reports with needful modifications to conduct this study. The dependent variable was the Obsessive-Compulsive inventory, and the other factors were taken as independent variables. The research was carried out in two stages; the initial test was as a pilot study to provide valuable validation of the content of the major questionnaire study. To address the challenges encountered during this pilot study, the survey questionnaire was reviewed and evaluated. The second part was a full-scale study designed to address the aim of the survey and was distributed among the students at the College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi (Appendix A). The survey was conducted for three months, from September to December 2020. The study's purpose was briefly outlined at the start of the questionnaire. The research project was authorized by the ethical research committee of the Institutional Review Board (IRB) Registration in Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia.

Data collection

An online Google form questionnaire (Google LLC, Mountain View, CA) link was shared with undergraduate medical students. Encouraged participants were to share the questionnaire link among their colleagues; hence, the questionnaire could reach many participants. Students from 1st to 5th-year aged 18 to 30 years were included in the research project. The questionnaire was designed to study the Obsessive-compulsive symptoms, and it also includes sociodemographic characteristics of the medical students and their families, support network, educational environment, body image satisfaction, social anxiety, and depressive symptoms. Before filling out the questionnaire, the students were informed about the study and given instructions on how to fill out the survey completely and truthfully and that their participation would be voluntary, and their anonymity would be assured.

To assess the Obsessive-compulsive symptoms, Obsessive-compulsive Inventory-Revised was used (Foa et al., 2002), which is a reduced version of the original instrument (Obsessive-compulsive Inventory) (Foa et al., 1998), and it is considered a valid measure in both clinical and non-psychiatric populations (Souza et al., 2011). It has 18 items that evaluate six Obsessive-compulsive symptoms dimensions: hoarding, neutralizing, obsessing, ordering, and washing. The 18 items have five possible answers ranging from 0=not at all to 4=extremely with a maximum total score of 72, and since OCD patients usually have more than 27 points (Foa et al., 2002), it is used to differentiate people who have Obsessive-compulsive symptoms to those who do not. Two valid questions were used to assess the depressive symptoms within medical students and were taken from the Diagnostic and Statistical Manual of Mental Disorders (DSM-5®) of the American Psychiatric Association (American Psychiatric Association et al., 2013).

Data Management and Analysis

For data entry, Microsoft Excel had been used.And exclusion of participants with exclusion criteria was conducted. Then, data were coded, and SPSS version 24 was used for data analysis. For categorical variables such as age, gender, and OCD prevalence, we used frequency and percent, while for continuous variables such as OCD scores; we used mean and standard deviation. Finally, Chi-test and t-test were conducted to understand the relation between demographic factors of participants and the prevalence of OCD. All statement was significant if the p-value was lower or equal to 0.05.

3. RESULTS

In this study, we collected 312 responses for our questionnaire, of which 69.2% were males. Also, we found that 90.4% of participants were aged between 18-24 years old, 27.6% were in the third year, 20.8% were in the first year, and 18.3% were in the fourth year. In addition, data showed that 93.9% were single, and 88.5% lived with their families while 8% lived alone (Table 1).

Table 1 demographic factor of participants

		Count	Column N %
Gender	Male	216	69.2%
	Female	96	30.8%
Age	<18	12	3.8%
	18-24	282	90.4%
	25-34	16	5.1%
	>34	2	0.6%
Academic level:	First	65	20.8%
	Second	51	16.3%
	Third	86	27.6%
	Fourth	57	18.3%
	Fifth	30	9.6%
	Intern	23	7.4%
Marital status	Single	293	93.9%
	Married	14	4.5%
	Other	5	1.6%
Place of residence	Alone	25	8.0%
	with family	276	88.5%
	At student's dormitory	6	1.9%
	Other	5	1.6%

In addition, 64.7% of students were pleased with their academic performance, 74.7% were generally happy with their social life, and 60.9% did not have difficulties adapting to medical college. On the other hand, We observed that over half of the participantsdid not feel happy with their current body image 51.9% while 40.1% of them indicated that they had been consistently depressed or down most of the day nearly every day and 50.6% of them had been less interested in most things or not being able to enjoy the things they used to enjoy before as shown in figure 1.

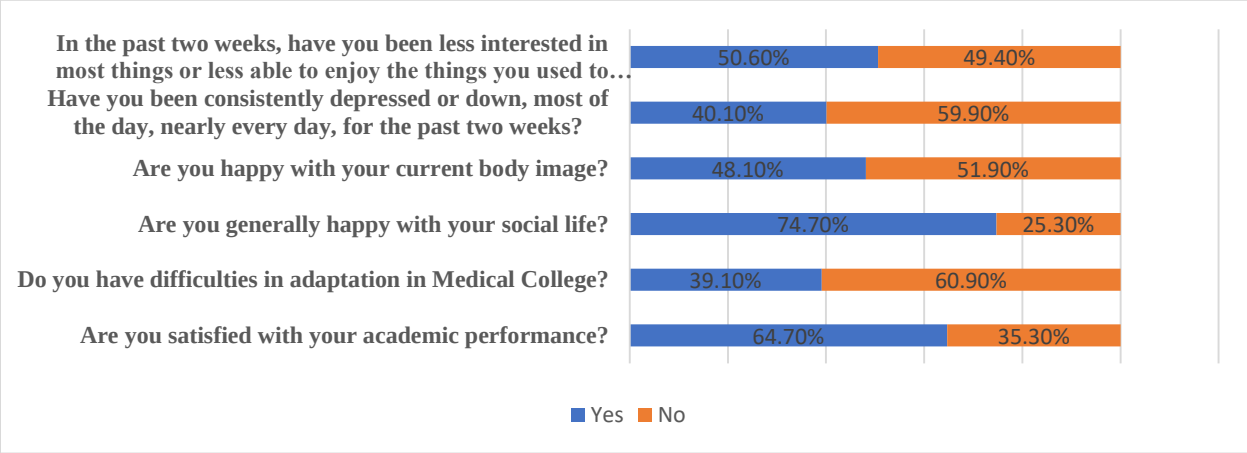

Figure 1 The distribution of some of depressive issues among students

According to the Obsessive-Compulsive inventory used in this study, The prevalence of OCD was shown to be36.2%, with a total mean score of 22.3 and a standard deviation of 12.68, where the mean score of participants without OCD was 14.32 in participants with OCD was 36.3 (figure 2).

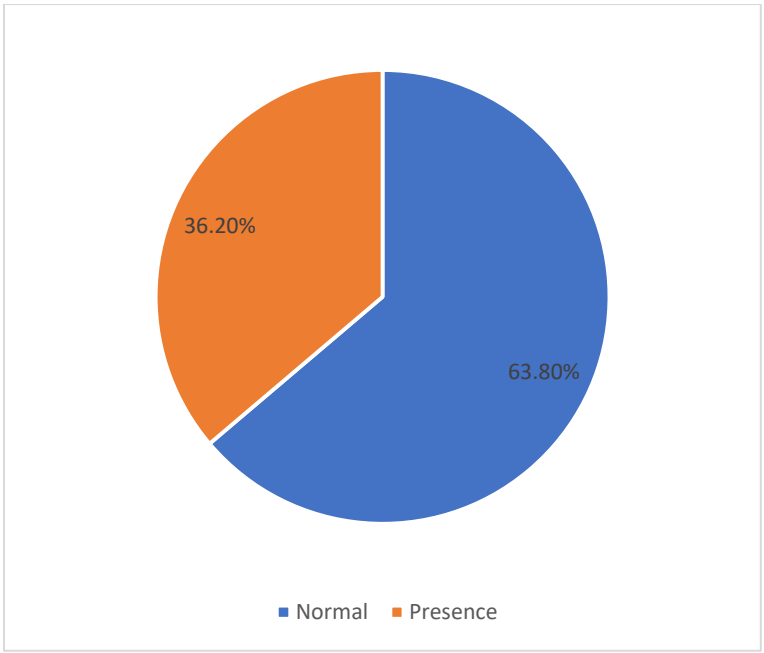

Figure 2 Distribution of students according to their score in Obsessive-Compulsive Inventorywhere students with score over 27 would be considered having OCD

According to our findings, there was a considerable difference between males and females considering the presence of OCD where it was found that the prevalence of OCD was higher in females significantly than males (47.9 % in females compared with 31 % of males. P=0.004). Considering age, we found that the symptoms of OCD were higher in younger participants; however, we could not find a significant difference between older and younger participants (P=0.115). Moreover, we did not find a significant difference among participants in their OCD prevalence according to their marital status or place of residence (P=0.984, 0.169);

however, it seems that participants who lived alone had the lowest mean scores compared with students who lived in student's dormitory (table 2).

Table 2 The relation between demographic factors and OCI scores

		Obsessive-Compulsive Inventory					
		Mean	Normal		Presence		
			Count	Row N %	Count	Row N %	
Gender:	Male	20.30	149	69.0%	67	31.0%	0.004*
	Female	26.69	50	52.1%	46	47.9%	
Age	<18	31.58	4	33.3%	8	66.7%	0.115
	18-24	21.97	182	64.5%	100	35.5%	
	25-34	20.88	12	75.0%	4	25.0%	
	>34	18.50	1	50.0%	1	50.0%	
Academic level:	First	24.48	38	58.5%	27	41.5%	.165
	Second	25.45	28	54.9%	23	45.1%	
	Third	21.56	57	66.3%	29	33.7%	
	Fourth	20.65	37	64.9%	20	35.1%	
	Fifth	14.53	25	83.3%	5	16.7%	
	Intern	25.65	14	60.9%	9	39.1%	
Marital status	Single	22.33	187	63.8%	106	36.2%	0.984
	Married	22.43	9	64.3%	5	35.7%	
	Other	17.60	3	60.0%	2	40.0%	
Place of residence	Alone	18.52	15	60.0%	10	40.0%	0.169
	with family	22.30	180	65.2%	96	34.8%	
	At student's dormitory	29.33	3	50.0%	3	50.0%	
	Other	30.40	1	20.0%	4	80.0%	
* Significant at *pvalue*<0.05							

By the same token, we found in this study that symptoms of OCD were slightly higher in those students who did not feel pleased with their academic scores and those who had difficulties adapting to medical college; however, this was not significant (p=0.594, 0.497). We also found that the frequency of OCD was slightly lower in participants who indicated that they are happy with their social life (P=0.045) and those who were happy with their current body image with no significant difference (P=0.136). We also found that the OCD prevalence was significantly higher in students who reported being depressed or down in the last two weeks (51.2% of depressed patients compared with 26.2% of the other participants had OCD, p=0.000) and 45.6 % of participants indicated losing of interest in things showed symptoms of OCD which is significantly higher than those who indicated that they did not lose interest (26.6 %, P=0.000) as shown in table 3.

Table 3 The relation between depressive symptoms and OCI scores

		Obsessive-Compulsive Inventory					
		Mean	Normal		Presence		
Are you satisfied with your academic performance?	No	22.57	68	61.8%	42	38.2%	0.594
	Yes	22.09	131	64.9%	71	35.1%	
Do you have difficulties in adaptation in Medical College?	No	22.05	124	65.3%	66	34.7%	0.497
	Yes	22.59	75	61.5%	47	38.5%	
Are you generally happy with your social life?	No	24.51	43	54.4%	36	45.6%	0.045*
	Yes	21.50	156	67.0%	77	33.0%	

Are you happy with your current body image?	No	24.22	97	59.9%	65	40.1%	0.136
	Yes	20.15	102	68.0%	48	32.0%	
Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?	No	19.44	138	73.8%	49	26.2%	0.000*
	Yes	26.48	61	48.8%	64	51.2%	
In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time?	No	19.34	113	73.4%	41	26.6%	0.000*
	Yes	25.11	86	54.4%	72	45.6%	
* Significant at p value <0.05							

4. DISCUSSION

This study, up to our knowledge, is the first study to assess the prevalence of obsessive-compulsive disorder among medical students in Al Imam Mohammad Ibn Saud Islamic University. In our study, the prevalence of OCD in our population was 36.2 % which is similar to the results of a study conducted by Almutairi et al., (2021) in King Saud bin Abdulaziz University for Health Sciences in which the prevalence of probable OCD was 35.3 %. However, our prevalence is higher than reported in other studies, including the study of Sultan et al., (2021) which was conducted among medical students in Faculty of Applied Medical Sciences, Umm-Al-Qura University, Saudi Arabia, and showed the OCD prevalence among medical students was 20%. Nevertheless, another study conducted by Yoldascan et al., (2009) among Turkish university students showed a lower prevalence of OCD (29.9%).

According to the findings of our study, the number of medical students who are at high risk of developing OCD symptoms was drastically high. One of the reasonable explanations for this result is the population itself. The study of Torres et al., (2016) with the Brazilian population, found that the OCD prevalence is more common among medical students than the general population and that these students are more likely to acquire depressive symptoms. Besides, the same study showed a need for more efforts to recognize OCD in the community, especially among medical students, and to provide health care when needed. Additional explanation of why our result was higher than other results conducted among the same population of medical students is the time of conducting the study where our study was conducted during the COVID-19 pandemic where there is a necessity for more attention for cleaning and washing, which may increase the symptoms of OCD among medical students. This explanation was reinforced with the results of Taher et al., (2021) among medical students in Iraq in the time of the COVID-19 pandemic which showed a high prevalence of OCD (43%). This was significantly higher than the results of a previous study conducted among a similar population in the same country, but in 2018, OCD prevalence was just 6 % (Hama et al., 2018). One factor that had a significant affect was the gender of participants, where the prevalence of OCD was significantly higher in females than males, and the female to male ratio was 1.5:1. This result was similar to the results of Yoldascan et al., (2009) who found a female to male ratio of 2.6/1. However, many other studies showed no difference in the prevalence of OCD between male and female students.

Moreover, other study found insignificant difference between gender where prevalence of OCD was higher in females (Assareh et al., 2016; Opakunle et al., 2017). We must not forget that anxiety disorders are typically a two-to-threefold more likelihood to be experienced by young women than young men. In addition, everyone exhibits a different sensitivity to stress and anxiety disorders. Our results show that females are more susceptible to stress than males, confirming the results of previous epidemiological studies in seven different countries (Horwath et al., 2000). Considering age, we found that the symptoms of OCD were higher in younger participants than older ones. However, we could not find a significant difference between them.

Our result is similar to the results of Sultan et al., (2021) who found that age did not significantly affect the prevalence of OCD. Additionally, in our study, we found that satisfaction about academic performance and ability to adapt to medical college had no effect on the prevalence of OCD; however, we found in this study that symptoms of OCD were slightly higher in those students who felt unsatisfied with their academic scores and those who had difficulties with adaptation in medical college. These results are similar to the results of Sultan et al., (2021). In addition, depression, dissatisfaction with social relationships, and a lack of interest in doing things were revealed to be major contributors in raising the prevalence of OCD in our research. Many previous studies have agreed with the statement that the OCD prevalenceis significantly associated with stress and depression (Torres et al., 2016; Opakunle et al., 2017; Abba-Aji et al., 2020), and other studies had shown that the increased prevalence of depression and stress in the time of the COVID-19 pandemic (Lai et al., 2020; Wang et al., 2020; Magnavita et al., 2020) added another reason for the increased prevalence of OCD.

This study included some limitations. One, using self-administered questionnaire, which may lead to some personal bias where some participants may not answer all questions honestly. Moreover, in this study we depended on survey in diagnosis of OCD and however, this survey is a reliable tool in detecting of OCD in targeted population but still clinical examination and collecting of medical history of patients are the lead tool in diagnosis of OCD, thus, developing in the methodology of the same study in future to include clinical examinations should be conducted.

5. CONCLUSION

In conclusion, we found that the OCD prevalence is high among medical students at Imam University. Higher prevalence was associated with females, depressive symptoms, and stress. Therefore, continuous examination of medical students to assess OCD is needed to provide the students with psychological assistance.

Author's Contributions

SKA and RA contributed to the design and idea of the study. FBB and AMK contributed to the data collection and interpretation of the result. SAA and SKA contributed to drafting of the manuscript. RA, NA and FB contributed to reviewing and editing the manuscript. All authors approved the final version of the manuscript.

Ethical approval

The study was approved by the Medical Ethics Committee ofImam Mohammad Ibn Saud Islamic University (ethical approval code: HAPO-01-R-001, Project No. 10-2020, session no. 30).Verbal and written informed consent were obtained from all participants in the study.

Consent for publication

Informed consent was obtained from all the participants.

Acknowledgement

The authors are grateful to Imam Mohammad Ibn Saud Islamic University for providing access to the Saudi Digital Library facility for this research study. The authors would also like to thank all the subjects who participated in this study voluntarily.

Funding

This study has not received any external funding.

Conflict of Interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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