WITHDRAWN: Prevalence of personality traits and disorders among KSU medical students. Obsessive-compulsive personality disorder: a survival mechanism or a prerequisite?

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EDITORIAL NOTE:

The full text of this preprint has been withdrawn by the authors while they make corrections to the work. Therefore, the authors do not wish this work to be cited as a reference. Questions should be directed to the corresponding author.

Abstract

Background:

A personality disorder (PD) is defined in the DSM-5 as a persistent pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture. This study aimed to determine the prevalence and characteristics of personality traits/disorders among medical students.

Methods:

This is a cross-sectional study conducted at the outpatient clinic, Psychiatry Department, King Khalid University Hospital, Riyadh, Saudi Arabia. The data were collected during an interview conducted by trained assessors under the supervising principal investigator, using a Structured Clinical Interview for DSM-V (SCID-5, produced by the American Psychiatry Association).

Results:

The prevalence of PDs among 252 medical students was determined including 44.05% males and 55.95% were females from 1st year to internship year. It was found that following personality disorders prevailed in the medical students; OCPD (21.8%), avoidant (6.7%), paranoid (2.8%), narcissistic, schizoid and borderline (2% each), dependent (0.8%), histrionic and schizotypal (both 0.4%), and antisocial (0%).

Conclusion:

The prevalence of PDs amongst medical students was remarkable. Approximately one in every five students had OCPD. It is recommended to implement screening tests for PDs in the students' clinic.

Introduction:

A personality disorder (PD) is defined in the DSM-5 as a persistent pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture. The essential criterion for PDs are defined as (a) impairments of self and interpersonal functioning and (b) pathological personality traits [1]. Pathological personality traits are defined by the "Big Five" domains including negative effect, detachment, antagonism, disinhibition, and psychoticism; which are inclusive of 25 traits used to define PDs [2].

DSM- 4 divides PDs into 3 broad clusters based on descriptive similarities of traits within each cluster. Cluster A (characterized as odd and eccentric) includes paranoid, schizoid and schizotypal traits; cluster B (characterized by unstable mood, behavior and relationship) includes histrionic, borderline, narcissistic and antisocial traits; and cluster C (share anxiousness and fearfulness) includes avoidant, dependent and obsessive compulsive traits [3].

Although all aspects of personal functioning should be assessed in the process of diagnosing PDs, it is simpler and more efficient to use a formulation to measure the severity of dimensions or traits, and whether or not their thresholds are reached [4]. In other words, when the threshold of a specific disorder is not reached, and the criteria are not met as a disorder, it is referred to as a personality trait. The importance of personality traits/disorders arises when determining predisposition to, and features of psychiatric illnesses. Taking obsessive compulsive personality disorder (OCPD) as an example, many studies have found a strong association between OCPD and suicidal behaviors, such as suicidal thoughts, non-suicidal self-injury and suicide attempts independent of depression [5]. Moreover, a study conducted on a group of people, it was found that people with OCPD and depression had more suicidality behavior and ideation than people with depression alone [6]. Individuals with obsessive compulsive disorder and panic disorder reported higher rates of comorbid OCPD and those people with OCPD had more depression than people without OCPD [7].

Multiple researchers have cited the likelihood of PDs to negatively affect an individual's social abilities in personal relationships, and occupational abilities in the workplace. A PD could also affect the productivity of the employee, as well as that of co-workers and supervisors. People with PDs have trouble finding jobs, and are more often fired or laid-off, and have more troublesome relationships with colleagues compared to people with no PDs. People with obsessive compulsive, paranoid, schizoid and antisocial PDs have more problems and adverse outcomes at the workplace compared to people with avoidant, histrionic and dependent PDs [8]. Moreover, impairments at the workplace, and impairments with social relationships and leisure time are more associated with schizotypal and borderline PDs compared to OCPD and major depressive disorder [9].

This study was focused on medical students due to the distressing medical field and the variety of subspecialties within different working environments. A systematic review which analyzed 40 studies concluded that medical students had a higher prevalence of depression and anxiety compared to the general population [10].

Another study stated that medical school is not the end, as they evaluated the prevalence of burnout among medical students, interns, residents/fellows and young physicians. At each period, the medical field students/workers were more likely to burnout compared to the general population [11]. Thus, it is important to screen medical students in order to provide them with the opportunity to explore their options within a more adaptable working environment.

The main objective of this study was to determine the prevalence and characteristics of personality traits/disorders among medical students. Further, secondary objectives were to compare the personality traits/disorders between academic years of medical school; to measure the prevalence of clinically significant personality traits among medical students; to determine previously diagnosed or current psychiatric disorders reported by medical students; to determine the most upsetting period in the lives of medical students, and its associated factors; and to determine the symptoms which made medical students think about seeking psychiatric assessment.

Methods:

After obtaining IRB approval from King Khalid University Hospital, Riyadh, Saudi Arabia

This cross-sectional study was conducted at the outpatient clinic, Psychiatry Department, King Khalid University Hospital, Riyadh, Saudi Arabia during June 2018 to January 2019.

Two-hundred and fifty two medical students enrolled at King Saud University from first year through to internship year took part in the study. Invitation letters with details of the interview were sent to the students, and those willing to participate were recruited to the interview. The interview was carried out in the outpatient clinic of the Psychiatry Department. Data were collected by trained assessors under the supervision of the principal investigator. Written consent was taken before the interviews, students' names were not recorded, and all information was kept confidential.

All medical students who responded to the invitation letters were included. The exclusion criteria included the students of other specialties and other universities.

Data were collected via Structured Clinical Interview for DSM-5 (SCID-5), which is a semi-structured diagnostic interview for clinicians and researchers to assess the 10 DSM-V PDs across clusters A-C, as well as the criteria for each of the 10 PDs including avoidant, dependent, obsessive-compulsive, schizoid, paranoid, schizotypal, borderline, histrionic, narcissistic and antisocial personality disorders. The SCID-V-PD could be used in the process of PD diagnosis, either by categorical (present or absent) or dimensional (by summing the ratings 0, 1, or 2 for each diagnosis and treating these sums as dimensions) way. In the present study, the SCID-5-PD was preceded by the administration of a self-report screening questionnaire (SCID-5-SPQ).

The scoring system consisting of three assessment scales was used. The first determines the presence or absence of PD. It is composed of 119 items representing the diagnostic criteria which are rated during the interview (i.e., "0" = absent, "1" = sub threshold, and "2" = threshold). Next, for each criterion, the number of relevant items, which reached the threshold was counted to determine whether or not it qualified as a disorder. If it qualified, it was scored 'YES' (i.e. there are 7 criteria for avoidant PD, if a participant scores "2" in more than 4 of them, then the criteria is met as a disorder). If the categorical threshold was not met for a particular PD, the interviewer was asked to look for clinically significant subthreshold features of that PD by asking the participant about their ability to maintain one prolonged relationship and the ability to function effectively at home, work and school. Finally, by summing the ratings of each PD (both threshold and subthreshold ratings for the criteria) the dimensional profile was determined. A number exceeding half of the dimensional profile is said to be a trait of that personality.

Data was analyzed using Statistical Package for Social Studies (SPSS 22; IBM Corp., New York, NY, USA). Continuous variables (e.g. age) were expressed as mean ± standard deviation and categorical variables (e.g. traits) were expressed as percentages. Chi square test and Fisher exact test were performed for categorical variables. A p-value < 0.05 was considered statistically significant.

Results:

Out of 252 students, the distribution throughout different academic years was 31 (12.30%) from first year, 38 (15.08%) from second year, 38 (15.08%) from third year, 71 (28.17%) from fourth year, 60 (23.81%) from fifth year, 13 interns (5.16%) and 1 resident (0.40%).

The resident was excluded from the study because this study focuses on medical students and undergrads.

The average age of the sample was 21.84 ± 1.7 years old. (Table 1)

Table 1: Characteristics of the participants

		Number (252)	%
Gender	Male	111	44.05
	Female	141	55.95
Age (Mean, SD)		21.84	1.70
Academic Year	First	31	12.30
	Second	38	15.08
	Third	38	15.08
	Fourth	71	28.17
	Fifth	60	23.81
	Intern	13	5.16
	resident	1	0.40

Thirty-eight participants (15.08%) reported seeing a specialist for a psychiatric problem. Nine of them (23.68%) reported being diagnosed with generalized anxiety disorder (GAD)/anxiety, 11 (28.95%) with depression, 2 (5.26%) with OCD, one (2.63%) with panic attacks, one (2.63%) with adjustment disorder, two (5.26%) with OCPD, one (2.63%) with social anxiety, three (7.89%) were counseled for stress and one (2.63%) for speech impairment.

Two participants (5.26%) were comorbid with GAD and depression, 1 (2.63%) with GAD and adjustment disorder, 1 (2.63%) with depression and OCD, 1 (2.63%) with GAD and agoraphobia, and 2 (5.26%) refused to disclose the diagnosis (Table 2).

Table 2: Psychiatric History of the participants

		Number (251)	%
Seen for psychiatric problem			
	Yes	38	15.14%
	No	213	84.86%
psychiatric problem	Anxiety (GAD)	9	23.68
	Depression	11	28.95
	OCD	2	5.26
	Panic Attack	1	2.63
	Adjustment	1	2.63
	OCPD	2	5.26
	Social Anxiety	1	2.63
	Nothing specific\refuses to tell	2	5.26
	Stressed\overwhelmed	3	7.89
	speech impairment	1	2.63
	Anxiety (GAD) and Depression	2	5.26
	Anxiety (GAD) and Adjustment	1	2.63
	Depression and OCD	1	2.63
	Anxiety (GAD) and Agoraphobia	1	2.63

Ninety participants (35.86%) thought that they needed psychiatric assessment. The majority reported the cause of low mood 27 (30.00%), anxiousness 12 (13.33%), stressed/overwhelmed were 12 (13.33%), checkup/reassurance were 8 (8.89%), social impairment was in 6 (6.67%), family conflict were experienced by 5 (5.56%) of them, dissatisfaction of self-performance by 4 (4.44%), recurrent thoughts/obsessions also by 4 (4.44%), and family history of psychiatric illness was observed in 3 (3.33%). (Table 3)

Table 3
Con: Psychiatric History of the participants

		Number (251)	%
If Never seen a psychiatrist: ever thought of ?	No	162	64.54%
	Yes	90	35.86%
What for: (n=90)	Anxiousness	12	13.33
	Low mood	27	30.00
	Stressed\Overwhelmed	12	13.33
	Family conflict	5	5.56
	Check up\reassurance	8	8.89
	Family History	3	3.33
	Someone else suggested	1	1.11
	Inability to control anger	2	2.22
	Social impairment	6	6.67
	Dissatisfaction of self performance	4	4.44
	Recurrent thoughts\ obsessions	4	4.44
	Sleep disturbances	1	1.11
	Loneliness\Isolation	1	1.11
	Anxiousness and Low mood	3	3.33
	Anxiousness and Stressed\Overwhelmed	1	1.11

Around 17.86% students reported that the most upsetting period of their life was the third year of medical school, and 16.27% reported that it was the first year (16.27%). Approximately half of the students (46.80%) chose medical school related stress as the factor that made them upset, while 13.55% specified personal reasons/refused to tell/nothing specific, followed by family conflict (8.73%), low mood (7.94%) and because a loved one left/passed away/got sick (5.95%) (table 4).

Table 4: The most upsetting period and its associated factors

		Number (251)	%
Most upset	Childhood	8	3.17
	Adolescence (12-18yrs)	38	15.08
	Pre Year	13	5.16
	First year	41	16.27
	Second year	27	10.71
	Third year	45	17.86
	Fourth year	23	9.13
	Fifth Year	15	5.95
	Internship	3	1.19
	?/never	33	13.15%
	Prep Year & First year	1	0.40
	First year & Second year	2	0.79
	Second year & Third year	1	0.40
	Third year & Fourth year	1	0.40
About	Medical school stress	118	46.80
	Family conflict	22	8.73
	Low mood	20	7.94
	Loved one left\passed away\got sick	15	5.95
	Bullied in school	5	1.98
	Overloaded	9	3.57
	Ended relationship \ broke up	2	0.79
	Anger	5	1.98
	Anxiousness	4	1.59
	Personal\refuse to tell\Nothing specific	34	13.55%
	Low self-esteem	2	0.79
	related to Psychiatric condition\health concern	4	1.59
	loneliness\Isolation	2	0.79
	medical school stress & Family conflict	2	0.79
	medical school stress & low mood	2	0.79
	low mood & Loved one left\passed away\got sick	1	0.40
	Family conflict & Overloaded & anxiousness	1	0.40
	medical school stress & Family conflict & low mood	1	0.40
	low mood & Overloaded & anxiousness	1	0.40
	medical school stress & Family conflict & related to Psychiatric condition\health concern	1	0.40

The overall prevalence of PDs and personality traits were also determined.

out of 251 participants 30.2% have personality disorders, while 17.1% have personality traits

The prevalence of different types of PDs, OCPD 21.8%, avoidant 6.7%, paranoid 2.8%, narcissistic, schizoid and borderline 2% each, dependent was 0.8%, both histrionic and schizotypal 0.4% and antisocial was 0%.

The most prevalent personality trait among medical students was obsessive compulsive (8.3%), followed by avoidant (4%), narcissistic (3.2%), paranoid (1.2%), borderline (0.8%), dependent, schizoid and histrionic (each 0.4%), schizotypal and antisocial (each 0%). (Table 5)

Of the sample, the prevalence of personality disorder based on the cluster were 29.3% medical students had PDs from cluster C, 5.2% from cluster A and 4.4% from cluster B (Table 6)

Table 5
Prevalence of personality traits / personality disorders among medical students

	Personality disorders		Personality traits	
	Number	Prevalence (%)	Number	Prevalence (%)
Overall prevalence	76	30.2	43	17.1
Avoidant	17	6.7	10	4.0
Dependent	2	0.8	1	0.4
Obsessive compulsive	55	21.8	21	8.3
Paranoid	7	2.8	3	1.2
schizotypal	1	0.4	0	0
Schizoid	5	2.0	1	0.4
Histrionic	1	0.4	1	0.4
Narcissistic	5	2.0	8	3.2
Borderline	5	2.0	2	0.8
Antisocial	0	0.0	0	0

Table 6
Prevalence of personality disorders and traits among medical student based on the personality cluster

	Personality disorders %	Personality Traits
Cluster A: (Paranoid, schizoid, schizotypal)	5.2	1.6
Cluster B: (Borderline, Narcissistic Histrionic, Antisocial)	4.4	5.0
Cluster C: (Avoidant, Dependant, Obsessive compulsive)	29.3	12.7

The prevalence of PDs among medical students in relation to academic year was only significant in the case of avoidant and borderline PDs. Prevalence of avoidant PDs were found to be 6.5% in 1st year, 7.9% in 2nd year, 5.3% in 3rd year, 4.2% in 4th year, 8.3% in 5th year and 7.7% in internship (p value 0.02). Prevalence of borderline PDs were 3.2% in 1st year, 2.6% in 2nd year and 3rd year, 1.4% in 4th year, 0% in fifth year and internship (p value 0.001). (Table 7)

Table 7 : Prevalence of personality disorders among medical students by academic year

	Academic year											
	First		Second		Third		Fourth		Fifth		Intern	
	Number	Prevalence (%)	Number	Prevalence (%)	Number	Prevalence (%)	Number	Prevalence (%)	Number	Prevalence (%)	Number	P (%
Avoidant	2	6.5	3	7.9	2	5.3	3	4.2	5	8.3	1	7
Dependent	1	3.2	0	0	0	0	0	0	1	1.7		
Obsessive compulsive	6	19.4	12	31.6	9	23.7	18	25.4	8	13.3	2	1
Paranoid	1	3.2	0	0	2	5.3	1	1.4	3	5.0	0	0
schizotypal	0	.0	0	0	0	0	0	0	1	1.7	0	0
Schizoid	1	3.2	1	2.6	2	5.3	0	0	0	0	1	7
Histrionic	0	.0	0	0	0	0	0	0	1	1.7	0	0
Narcissistic	1	3.2	0	0	0	0	1	1.4	3	5.0	0	0
Borderline	1	3.2	1	2.6	1	2.6	1	1.4	0	0	0	0
Antisocial	0	0.0	0	0	0	0	0	0	0	0	0	0

* Significant p value

Discussion:

This study was performed with an intention to help distressed students, in which OCPD would be the most common diagnosis. Additionally, lectures were organized for the students to provide them with an overview of PDs, and to explain defense mechanisms and suitable working environments for each disorder. Furthermore, counseling sessions with a psychiatrist were provided for students who showed interest or needed urgent help. These students included those with significant academic impairments, depressive symptoms, and suicidal thoughts or attempts.

In this study, the overall prevalence of PDs among medical students was 30.2%, which is considerably higher than the general population of, for example, the US, Poland or Norway (9.1%, 9% and 13.4%, respectively). Unfortunately, there is no data relating to local populations available for comparison [12–14]. Satisfactory literature is also not available about PDs among medical students, which uses the same measurement used in this study (SCID-V-PD). It was found that the most prevalent PDs among medical students were OCPD, avoidant, and paranoid PD at 21.8%, 6.7%, and 2.8%, respectively. According to the literature, OCPD is one of the most common PDs. However, the prevalence of OCPD in the general population ranges from 3% to around 8–9%, revealing a large difference to that of medical students [15].

With regards to personality traits, the overall prevalence was 17.1%, OCPD was also the most common with a prevalence of 8.3%, and only 0.4% were clinically significant.

Extreme perfectionism, preoccupation with an organization, excessive attention to details and the obligation to manage self and environment are all characteristics of OCPD. If a student applies these practices, he/she might be more likely to achieve high marks. Acceptance into medical school is highly dependent on high grades in both high school and in the common first year. It might be during these periods of high stress and anxiety that students develop obsessive behaviors. Students generally get to medical school at the age of 18, when the personality has only recently developed. They are then exposed to a highly stressful and competitive environment in which those who do not meet a threshold of excellence would not survive.

Previous studies have found that paranoid PDs are more prevalent in black and Hispanic populations than white populations, whilst avoidant PD is more prevalent in Native Americans [16]. The current study's population is solely Saudi Arabians, which is a point to consider. Besides race, personality is affected by many factors including sociocultural factors, developmental histories and current social content of the individual. Working within the medical field might be an environmental factor, which causes distress and leads to the development of an avoidant personality. In such a competitive and harsh environment, junior doctors are more prone to criticism from both supervisors and colleagues. According to the current results, avoidant and paranoid PDs were the second and third most prevalent among medical students at 6.7% and 2.8%, respectively. The prevalence of the avoidant personality trait was 4%, which was the second most common overall, and the most prevalent clinically significant trait [17]. In the general population, the prevalence of avoidant PD was reported at 2.6%. A possible explanation for the higher prevalence among the current study population is the comorbidity of avoidant PD with OCPD. Both are in cluster C (anxious and fearful) and therefore have overlapping criteria and shared susceptibility[18]. The prevalence of paranoid PD ranges from 1.2–4.4% [19]. It is plausible that Arab culture might be a risk factor for increased the prevalence of the paranoid PD in the current study, since some of the criteria asked in the interview were culturally subjective. For instance, privacy is a valuable matter among Arab people and especially Saudis. This emphasizes the need for an Arabic version of the SCID that accounts for cultural variations.

Schizoid, narcissistic and borderline PDs all were equally prevalent among medical students at around 2% each. The narcissistic personality trait is the third most prevalent (3.2%) following obsessive-compulsive and avoidant. The lifetime prevalence of borderline PD is 5.9%. A lower prevalence among medical students (2%) highlighted the extent of the dysfunction associated. Borderline personality trait prevalence was 0.8%, of which, all were clinically significant. Moreover, to emphasize the dysfunction associated with a borderline PD; the prevalence varied over the years, decreasing from the 1st year to the 4th year and then disappearing completely by the senior years which might be explained by the tendency to drop-out from the college. Dependent PD had the lowest prevalence among cluster C PDs at 0.8%. This was in line with the general population [20].

Of the participants, 15.14% reported that they had previously been or were currently diagnosed with a psychiatric disorder. Depression was the most reported followed by anxiety. It was expected that cases were under-reported due to psychiatry-related stigma, and therefore, further research is suggested with proper assessment considering previous studies around the world which have found that 40% medical students have common mental illnesses [21,22]. A local study in Saudi Arabia, at King Abdulaziz University in Jeddah found that the prevalence of anxiety was 34.9%, while the prevalence of depression was 14.7% [23]. Compared to the general population, the prevalence of depression for an adult aged between 30–44 years old, who attended primary care clinics in Riyadh, was 49.9% [24]. Another study from Eastern Saudi Arabia for men who attend primary care clinics found that the prevalence of depression and anxiety was 32.8% and 22.3%, respectively [25].

Medical students are susceptible to psychiatric illnesses, which is reflected by the fact that 35.86% thought that they required psychiatric visits and assessments at least once during their medical school life. There are various causes leading them to consider seeking help. Low mood (30%), followed by anxiousness and being stressed/overwhelmed (13.33% each) were the most commonly reported causes by participants. The third year was the most upsetting year in medical school (as reported by 45/252, 17.86% of students), followed by the 1st year (as reported by 41/252, 16.27% of students). The most reported cause of being distressed was medical school-related stress (as reported by 118/252, 46.80% of students). This could be explained by the fact that these are clinical years associated with extending clinical responsibility and patient contact. In addition, with specific regards to the KSU curriculum, the third year is the busiest year of medical school and includes an obligatory research placement [26].

However, there are some limitations in this study including sources of bias such as culture and behavioral adjustment by the medical students to manage college requirements were hard to eliminate.

Conclusion:

PDs are significantly prevalent among medical students. Approximately one in every five medical students had OCPD. Early identification of personality traits/disorders would reduce students' suffering and improve their quality of life. To this end, it is recommended to implement a PD screening test in the students' clinic. Further research to assess the changes that PDs cause on the performance of post-graduate medical specialists is also recommended. Since the prevalence of PDs and psychiatric illnesses among medical students is significant, regular psychiatric assessment is recommended as well as arranging workshops and sessions to help the students out. It is also recommended that those in charge should review the curriculum of the third year since half the students found this to be the most stressful and upsetting year of medical school.

Abbreviations

DSM	Diagnostic and statistical manual of mental health
SCID-5	Structure clinical interview for DSM -V
PD	Personality disorder
OCPD	Obsessive compulsive personality disorder
OCD	Obsessive compulsive disorder
GAD	Generalized anxiety disorder
SD	Standerd deviation
KSU	King Saud university

Declarations

Ethics approval and consent to participate:

Ethics approval was approved by the Institutional Review Board committee, college of medicine, King Saud University.

Consent for publication:

Written consent was taken before the interviews, students' names were not recorded, and all information was kept confidential.

Availability of data and material:

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests:

The authors declare that they have no competing interests.

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Authors' contributions:

SA is the corresponding author of the study. All authors contributed to the data collecting interviews, data management, and manuscript writing. They read and approved the final manuscript.

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