J. Hum. Environ. Health Promot. 2016: 1(4): 213-219

Journal of Human, Environment and Health Promotion

Journal homepage: www.zums.ac.ir/jhehp

Status of Obsessive Compulsive Disorder among Iranian College Students in Kermanshah, Iran

Marzieh Assareh [a], Tayebeh Rakhshani [b,*], Seyed Mansour Kashfi [c], Maryam Ayazi [d]

[a] *Department of Psychiatry, Bahonar Hospital, Alborz University of Medical Sciences ,karaj, Iran.*
[b] *Nutrition Research Center Department of Public Health, Shiraz University of Medical Sciences, Shiraz, Iran.*
[c] *Department of Public Health, Shiraz University of Medical Science, Shiraz, Iran.*
[d] *Research Assistant, Social Welfare University of Medical Sciences, Tehran, Iran.*

Corresponding author.** ***E-mail address: healthacademic2014@gmail.com

ARTICLEINFO

Article history:
Received June 14, 2016
Accepted August 6, 2016

Article Type:
Original Article
DOI: 10.29252/jhehp.1.4.213

Keywords:
College Students
Disorders
Obsessive Compulsive

ABSTRACT

Background: There is scant evidence regarding the prevalence and main determinants of Obsessive Compulsive Disorder (OCD) in early adulthood, especially at university ages. This study aimed to determine the status of OCD among Iranian college students.
Methods: This cross-sectional study was conducted on 330 medical students at different academic grades studying at Kermanshah University of Medicalsciences. The final diagnosis of subclinical OCD was based on Maudsley Obsessive Compulsive Inventory (MOCI). The data were entered into the SPSS statistical software, version 19.0 and analyzed using independent T-test and chi-square test. $P<0.05$ was considered to be statistically significant.
Results: The students' mean + SD score of MOCI was 8.1 ± 6.9. Besides, 103 students (32.4%) obtained scores higher than 9 and, consequently, were diagnosed with subclinical OCD. Among the baseline characteristics, only family history of OCD showed a significant relationship with the frequency of subclinical OCD ($P<0.05$).
Conclusion: Since family history, as the only determinant of OCD in our study, cannot be modified, students and families have to be trained to control their disorder.

1. Introduction

Obsessive Compulsive Disorder (OCD) is psychiatrically categorized as an anxiety disorder characterized by sudden thoughts leading to uneasiness, presentiment, stress, or worry as well as repetitious behaviors aiming at reducing anxiety [1].

Clinical manifestations of OCD include redundant washing or cleaning, repeated checking, excessive hoarding, preoccupation with sexual, violent, or religious thoughts, relationship-related obsessions, aversion to particular numbers, and nervous rituals [2].

To cite: Assareh M, Rakhshani T, Kashfi SM, Ayazi M. Status of Obsessive Compulsive Disorder among Iranian College Students in Kermanshah, Iran. *J Hum Environ Health Promot*. 2016; 1(4): 213-9.

Various epidemiological studies have estimated the annual prevalence rates of OCD to be between 1.1/100 and 2.0/100 in the general population, which is remarkably consistent among different nations [3, 4]. The incidence of OCD in adults has also been reported to be 0.55 per 1000 person-year, with a relatively higher incidence rate in elderly women [5]. Furthermore, World Health Organization (WHO) has reported differences in the prevalence and incidence of OCD around the world, with figures in Latin America, Africa, and Europe being 2-3 folds higher than those in Asia and Oceania [6]. The observed variations in the global incidence of OCD can be attributed to differences in diagnostic criteria of this disorder, resulting in the inability to identify new cases. In this regard, age and social status should be taken into consideration, as well.

Although OCD does not have a higher affinity to a specific gender, its symptoms tend to appear before the age of 18 years in 80% of individuals [7]. Also, a few evidences are available regarding the prevalence and main determinants of OCD in early adulthood, especially at university ages.

Therefore, the present study aims to determine the status and main determinants of clinical and subclinical OCD among medical students.

2. Materials and Methods

2.1. Study design

This cross-sectional study was performed on medical students at Kermanshah University of Medical Sciences.

2.2. Participants

This study was conducted on 330 students randomly selected from different academic grades. Medical students with the history of OCD who were willing to cooperate were enrolled into the study. On the other hand, the students studying in other majors and those who were not willing to participate were excluded.

Prior to the study, the participants were informed about the study objectives and reassured about the confidentiality of their information. In the initial assessment, the students who were suspected to or had the symptoms of subclinical OCD were referred to a psychiatrist for further evaluations.

2.3. Variables

Baseline information, including demographics, year of entering college, academic grade, number of siblings, family history of OCD, marital status, and place of residence, was collected by a self-administered questionnaire.

2.4. Outcome

Final diagnosis of subclinical OCD was based on DSM-IV criteria and Maudsley Obsessive Compulsive Inventory (MOCI) developed by Hodgson and Rachman (1977).

2.5. Data collection instrument

MOCI is one of the most widely-used tests in clinical psychology for assessing OCD symptoms in psychiatric patients and a screening tool in nonclinical populations [8]. It is a self-report inventory with true-false format and contains 30 dichotomous items. Thus, its total score can range from 0 (absence of symptoms) to 30 (maximum presence of symptoms). The original version of this inventory has four subscales, namely checking (9 items), cleaning (11 items), slowness (7 items), and doubting (7 items). It should be noted that the sum of the items for the four subscales is 34, not 30, because four items are included in two subscales. According to this inventory, students with scores higher than 9 are considered to have subclinical OCD [9]. This test has also been translated into Persian and used in previous studies in Iran [10].

2.6. Statistical analysis

The results were presented as mean ± Standard Deviation (SD) for quantitative variables and as absolute frequencies and percentages for categorical ones. Continuous variables were compared using independent T-test, while categorical ones were compared using chi-square

test. All analyses were performed using the SPSS statistical software for Windows (SPSS Inc., Chicago, IL), version 19.0 and $p<0.05$ was considered to be statistically significant.

3. Results and Discussion

Among the medical students who were initially recruited, 12 were excluded because of failure to respond to inquiries. Among the remaining respondents, 192 were female, 122 were male, and the rest did not indicate their gender. The mean + SD age of the participants was 23.29±3.30 years and 165 students (51.9%) were older than 23 years.

Regarding marital status, 260 participants (81.8%) were single, 50 (15.7%) were married, 1 (0.3%) was widowed or divorced, and the remaining 7 did not state their marital status.

Additionally, 160 students (50.3%) resided at the dormitory. Besides, 108 (34.0%), 34 (10.7%), 91 (28.6%), and other students were passing the basic medical sciences, pathophysiolog, apprenticeship, and internship courses, respectively. Moreover, family history of OCD was revealed in 57 subjects (17.9%); 10.7% in the first-degree relatives and 5.3% in the second-degree relatives.

The students' mean + SD score of MOCI was 8.1±6.9. In addition, 103 students (32.4%) obtained scores higher than 9 and, consequently, were diagnosed with subclinical OCD.

Comparison of the students with and without subclinical OCD regarding the baseline characteristics (Table 1) showed that, except for family history of OCD that was significantly more frequent in those with subclinical OCD, the two groups were similar in terms of other characteristics including gender and age distribution, marital status, number of siblings, residence at dormitory, and academic grade.

According to DSM-IV criteria, the overall prevalence of clinical OCD was 3.46%. Indeed, out of all the students with the initial diagnosis of subclinical OCD, 14.1% were finally diagnosed with clinical OCD. As shown in Table 2, family history of OCD was more revealed in the students who suffered from clinical OCD than in other ones. However, other baseline characteristics were comparable between the two groups.

The present study aimed to determine the status of OCD among Iranian college students in Kermanshah, Iran. The results demonstrated that the overall frequencies of subclinical and clinical OCD were 32.4% and 3.4%, respectively and family history of OCD was the only determinant of the disease in both situations. In a study conducted on 117 medical students at the University of Sydney in Australia, the prevalence of obsessive compulsive symptoms was estimated to be 66.7%, which is higher compared to the present study [11]. However, another study conducted in Japan reported the prevalence of OCD to be 1.7%, which is considerably lower compared to our study [12]. The differences among the studies can be due to variations in data collection tools, statistical methods, and age distributions as well as social and cultural variations.

Sulkowski et al., conducted a study in the United States and indicated relatively common clinical OCD symptoms among American college students [13]. In another observation by Sher et al., among college students in Colombia, compulsive checkers were more likely to meet the criteria for clinical OCD than were non-checkers [14].

Overall, the previous reports on the prevalence of these psychiatric conditions in young adolescents showed considerably lower rates, indicating the probable upward trend of both subclinical and clinical OCD at university ages.

The results of the research performed by Bryńska and Wolańczyk in Poland revealed a frequency of 0.38% for clinical OCD and 2.7% for subclinical OCD among young adolescents [15].

Similarly, another study on students in grades 7 to 9 in southeastern US indicated the one-year incidence of OCD and subclinical OCD to be 0.7% and 8.4%, respectively. They also referred to studies on clinical OCD in adolescents, with the community prevalence of 0.2-1.2% [16]. Apter et

al., (1996) also carried out a research on 16-17-year-old Israeli army inductees using DSM-IV criteria and indicated the prevalence of clinical and subclinical OCD to be 2.3% and 3.9%, respectively. They also pointed to studies showing the prevalence of clinical and subclinical OCD to be 0.35% and 2%, respectively among high school students [17].

Up to now, a few studies have assessed the prevalence and main determinants of clinical OCD

Table 1: Comparison of the students with and without subclinical OCD regarding the baseline characteristics.

Characteristics		Student with Sub clinical OCD (n = 103)	Student without sub clinical OCD (n = 215)	*P*-value
Age	< 23 Years	62 (60.2)	103 (47.9)	0.25
	> 23 Years	39(28.7)	97(71.3)	0.35
Female gender	Female	59 (57.3)	133 (61.9)	0.69
	Male	46	72	0.59
Marital status	Married	16 (32)	34 (68)	0.95
	Single	86(33.1)	174(66.9)	0.12
	Divorce	0	1(100)	0.51
Academic grade	Basic sciences	44 (42.7)	70 (32.6)	0.23
	Physiopathology	12 (11.7)	22 (10.2)	0.73
	Apprenticeship	29 (28.2)	62 (28.8)	0.92
	Internship	18 (17.4)	61 (28.4)	0.09
Number of siblings	None	1 (1.0)	3 (1.4)	0.99
	One	14 (13.6)	17 (7.9)	0.15
	Two	25 (24.3)	49 (22.8)	0.81
	Three	17 (16.5)	35 (16.3)	0.96
	Four	14 (13.6)	28 (13.0)	0.90
	Five	15 (14.6)	28 (13.0)	0.74
	More	10 (9.7)	30 (14.0)	0.34
	Unknown	7 (6.7)	25 (11.6)	0.22
Residence at dormitory	Yes	48 (46.6)	112(52.1)	0.59
	No	52(53.4)	103(47.9)	0.41
Family history of OCD	Yes	31(30.0)	26 (12.1)	0.00
	No	72(70.0)	189(87.9)	0.07

in college students. Comparison of evidences in this population and younger groups emphasizes the existence of specific risk factors that lead to occurrence of clinical and subclinical OCD in the former group. Review of the literature also implicates various behavioral, cognitive, genetic, and neurobiological factors involved in the occurrence of this disorder in young adults.

Considering the key role of some underlying psychological and behavioral factors as triggers of clinical OCD and because of the higher rate of mood disorders and even suicide in college student in comparison to the general population [18-20], the prevalence of clinical and subclinical OCD is expected to be higher at university ages.

The findings of the current study indicated no statistically significant relationship between age and OCD frequency. However, Qureishi et al., conducted a study on medical students of Zanjan University, Iran and found a significant relationship between age and frequency of OCD [21]. Our study also showed no significant relationship between female gender and OCD frequency, while this relationship was significant in the study by Qureishi et al. [21].

According to our survey, the frequency of family history of OCD was higher in the students affected by clinical or subclinical OCD. This suggests the role of this characteristic in prediction of the occurrence of clinical OCD in students.

Limited evidences from genetic studies in families and in twins have also indicated that genetic factors might be involved at least in some groups suffering from OCD [22-25]. Some researchers, too, concluded that having a parent with OCD put children at risk of emotional and behavioral disorders, and that the findings were stable during a 2-year follow-up. Moreover, parents with symptomatic children had a greater number of OCD symptoms themselves and were more likely to have family problems [26, 27].

Thus, in addition to the factors related to entering the university, genetic and familial factors should also be taken into account.

Table 2: Comparison of the students with and without clinical OCD regarding the baseline characteristics.

Characteristics		Student with clinical OCD (n = 11)	Student without clinical OCD (n = 307)	*P*-value
Age	< 23 years	6 (54.5)	159 (51.8)	0.92
	> 23 years	5(45.5)	148(48.2)	0.61
Gender	Female	8 (72.7)	184 (59.9)	0.68
	Male	3(27.3)	123(40.1)	0.43
Marital status	Married	1 (9.1)	49 (16.0)	0.99
	Single	9(3.46)	251(96.54)	0.55
	Divorce	0	1(0.2)	0.13
Academic grade	Basic sciences	3 (27.3)	105 (34.2)	0.99
	Physiopathology	2 (18.2)	32 (10.4)	0.36
	Apprenticeship	3 (27.3)	88 (28.7)	0.99
	Internship	3 (27.3)	76 (24.8)	0.99
Number of siblings	None	1 (9.1)	3 (1.0)	0.14
	One	1 (9.1)	30 (9.8)	0.99
	Two	2 (18.2)	72 (23.4)	0.99
	Three	2 (18.2)	50 (16.3)	0.70
	Four	2 (18.2)	40 (13.0)	0.65
	Five	0 (0.0)	43 (14.0)	0.37
	More	2 (18.2)	38 (12.4)	0.64
	Unknown	1 (9.1)	31 (10.1)	0.99
Residence at dormitory	Yes	6 (54.5)	154 (50.2)	0.87
	No	5(45.5)	153(49.8)	0.91
Family history of OCD	Yes	6 (54.5)	51 (16.6)	0.03
	No	5(45.5)	256(83.4)	0.11

4. Conclusion

The results of the current study showed that among the demographic variables, family history was the only determinant of OCD in college students. Unfortunately, family history is a variable that cannot be changed through educational interventions. Therefore, families have to be provided with training programs in order to prevent the severity of the disease symptoms.

Acknowledgments

The authors would like to express their gratitude to the medical students at Kermanshah University of Medical Sciences and all individuals who cooperated in the study. They are also grateful to Ms. A. Keivanshekouh at the Research Improvement Center of Shiraz University of Medical Sciences for improving the use of English in the manuscript .

Conflict of interest

None declared.

Funding

None declared.

References

1. Stewarta1 SE, Rosariob MC, Brown TA, Carter AS, Leckman JF, Sukhodolsky D. Principal Components Analysis of Obsessive Compulsive Disorder Symptoms in Children and Adolescents. *Biol Psychiatry*. 2007; 61(3): 285-91.

2. Markarian Y, Larson MJ, Aldea MA, Baldwin SA, Good D, Berkeljon A, et al. Multiple Pathways to Functional Impairment in Obsessive-Compulsive Disorder. *Clin Psychol Rev*. 2010; 30 (1): 78–88.

3. Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu HG, Lee CK, et al. The Cross National Epidemiology of Obsessive Compulsive Disorder. The Cross National Collaborative Group. *J Clin Psychiatry*. 1994; 55: 5-10.

4. Sasson Y, Zohar J, Chopra M, Lustig M, Iancu I, Hendler T. Epidemiology of Obsessive-Compulsive Disorder: A World View. *J Clin Psychiatry*. 1997; 58 (12): 7-10.

5. Nestadt G, Bienvenu OJ, Cai G, Samuels J, Eaton WW. Incidence of Obsessive-Compulsive Disorder in Adults. *J Nerv Ment Dis*. 1998; 186 (7): 401-6.

6. Ayuso-Mateos JL. Global Burden of Obsessive-Compulsive Disorder in the Year 2000. *WHO*. 2013:1-10.

7. Kenézloi, E, Nemoda Z. Genetic Factors in Obsessive-Compulsive Disorder: Summary of Genetic Studies. *Psychiatr Hung.* 2010; 25 (5): 378-93.

8. Hodgson RJ, Rachman S. Obsessional-Compulsive Complaints. *Behav Res Ther*.1997; 15: 389-95.

9. Sánchez-Meca J, López-Pina JA, López-López JA, Marín-Martínez F, Rosa-Alcázar AI, Gómez-Conese A. The Maudsley Obsessive-Compulsive Inventory: A Reliability Generalization Meta-Analysis. *Int J Clin Health Psychol*. 2011; 11: 473-93.

10. Assareh M, Tabrizi R, Firouzkouhi-Moghaddam M, Rakhshani T. Epidemiological Survey on the Status of Obsessive-Compulsive Disorder among School-Age Children in Iran. *Iran J Health Sci.* 2015; 3(4): 1-7. Available from: URL:http://jhs.mazums.ac.ir.

11. Sweet M. Being a Caring Doctor may be bad for you. *BMJ*. 2003: 326-55.

12. Chandavarkar U, Azzam A, Mathews CA. Anxiety Symptoms and Perceived Performance in Medical Students. *Depress Anxiety*. 2007; 24(2): 103-11.

13. Sulkowski ML, Mariaskin A, Storch EA. Obsessive-Compulsive Spectrum Disorder Symptoms in College Students. *J Am Coll Health*. 2011; 59(5): 342-8.

14. Sher KJ, Martin ED, Raskin G, Perrigo R. Prevalence of DSM-III-R Disorders among Nonclinical Compulsive Checkers and Noncheckers in a College Student Sample. *Behav Res Ther*. 1991; 29(5): 479-83.

15. Bryńska A, Wolańczyk T. Epidemiology and Phenomenology of Obsessive-Compulsive Disorder in Non-Referred Young Adolescents: A Polish Perspective. *Eur Child Adolesc Psychiatry*. 2005; 14(6): 319-27.

16. Valleni-Basile LA, Garrison CZ, Waller JL, Addy CL, McKeown RE, Jackson KL, et al. Incidence of Obsessive-Compulsive Disorder in a Community Sample of Young Adolescents. *J Am Acad Child Adolesc Psychiatry*. 1996; 35(7): 898-906.

17. Apter A, Fallon TJ Jr, King RA, Ratzoni G, Zohar AH, Binder M, et al. Obsessive-Compulsive Characteristics: from Symptoms to Syndrome. *J Am Acad Child Adolesc Psychiatry*. 1996; 35(7): 907-12.

18. Richardson M, Abraham C, Bond R. Psychological Correlates of University Students' Academic Performance: A Systematic Review and Meta-Analysis. *Psychol Bull*. 2012; 138(2): 353-87.

19. Rizvi AH, Awaiz M, Ghanghro Z, Jafferi MA, Aziz S. Pre-Examination Stress in Second Year Medical Students in a Government College. *J Ayub Med Coll Abbottabad*. 2010; 22(2):152-5.

20. Zhang X, Wang H, Xia Y, Liu X, Jung E. Stress, Coping and Suicide Ideation in Chinese College Students. *J Adolesc*. 2012; 35(3): 683-90.

21. Ghoreishi A, Nikmanesh N. Prevalence of Obsessive-Compulsive Disorder and its Relationship with Anxiety Symptoms in Students of Zanjan Universities (2009). *J Kermanshah Univ Med Sci*. 2014; 18(5): 303-12.

22. Baer L, Minichiello WE. Behavior Therapy for Obsessive-Compulsive Disorder. In: Jenike MA, Baer L, Minichiello WE, eds. *Obsessive-Compulsive Disorders. St Louis: Mosby*. 1998: 337-67.

23. Steketee GS, Frost RO, Rheaume J, Wilhelm S. Cognitive Theory and Treatment of Obsessive-Compulsive Disorder. In: Jenike MA, Baer L, Minichiello WE, eds. *Obsessive-Compulsive Disorders. St. Louis: Mosby*. 1998: 368-99.

24. Alsobrook JP, Pauls DL. The Genetics of Obsessive-Compulsive Disorder. In: Jenike MA, Baer L, Minichiello WE, eds. *Obsessive-Compulsive Disorders*. *St. Louis: Mosby*. 1998: 276-88.

25. Rauch SL, Whalen PJ, Dougherty D, et al. Neurobiologic Models of Obsessive Compulsive Disorder. In: Jenike MA, Baer L, Minichiello WE, eds. *Obsessive-Compulsive Disorders*. *St. Louis: Mosby*. 1998: 222-53.

26. Black DW, Gaffney G, Schlosser S, Gabel J. The Impact of Obsessive-Compulsive Disorder on the Family: Preliminary Findings. *J Nerv Ment Dis*. 1998; 186: 440-2.

27. Calvocoressi L, Lewis B, Harris M, et al. Family Accommodation and Obsessive-Compulsive Disorder. *Am J Psychiatry*. 1995; 152: 441-3.