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ORIGINAL ARTICLE / ÖZGÜN ARAŞTIRMA

Suggestive obsessive-compulsive disorder in students attending a public high school in Istanbul, Turkey

İstanbul'da bir devlet lisesine kayıtlı lise öğrencilerinde muhtemel obsesif kompulsif bozukluk sıklığı

Mikail ÖZDEMİR, Seyhan HIDIROĞLU, Abdullah SARIÖZ, H. Gulnihal ÖZDEMİR, Melda KARAVUŞ

ABSTRACT

Objectives: Obsessive–compulsive disorder (OCD) often starts in childhood and adolescence and can be a chronic disorder with high persistence rates. The prevalence of OCD in this group is between 0.5-4%. It may occur in children as young as 6-7 years of age. The aim of the present study is to explore suggestive OCD in adolescents in a public high school and factors related with suggestive OCD.

Patients and Methods: Ninth, 10th, 11th and 12th grade students attending a public high school were included in the study. In our study, we used a questionnaire made up of a socio-demographic survey form and the Leyton's Obsessional Inventory. The inventory was applied as a self-report questionnaire.

Results: A high suggestive OCD prevalence was found among students (14.3%). Students who declared to be traumatized in childhood had 3,55 times higher odds to exhibit suggestive OCD than those who declared to be not traumatized. Also students who reported to possess a psychological disorder had 2,22 times higher odds to exhibit suggestive OCD than students who reported not having a psychological disorder.

Conclusion: The prevalence of suggestive OCD was high in students who participated to our study. More comprehensive studies are needed to be done.

Keywords: Suggestive obsessive-compulsive disorder, Superstition, Trauma, High school

ÖZ

Amaç: Obsesif-kompulsif bozukluk (OKB) genellikle çocukluk ve ergenlik döneminde başlayabilir ve kronik bir rahasızlık haline gelebilir. OKB'nin çocuk ve yetişkinlerdeki prevelansı 0,5% ile 4% arasında değişmektedir. OKB 6-7 yaşlarında başlayabilmektedir ve her iki cinsiyet grubunda eşit oranda gözlenmektedir. Amacımız bir devlet lisesine kayıtlı öğrencilerde muhtemel OKB sıklığını ve ilişkili faktörleri incelemektir.

Hastalar ve Method: Bir devlet lisesindeki 9, 10, 11 ve 12. sınıf öğrenciler araştırmaya dahil edilmiştir. Öğrencilere sosyodemoğrafik değişkenleri ve Leyton obsesyon skalasını da içeren bir soru formu uygulanmıştır. Anketler öğrencilerin kendi bildirimlerine göre doldurulmuştur.

Bulgular: Çalışmamızda muhtemel OKB sıklığı öğrencilerde yüksek bulunmuştur (14,3%). Çocukluk çağında travma yaşayan öğrencilerde diğerlerine göre 3,55 kat daha yüksek oranda muhtemel OKB mevcut idi. Ayrıca psikolojik bozukluğu olduğunu ifade eden öğrencilerin psikolojik bozukluğu olmadığını bildiren öğrencilere göre muhtemel OKB görülme oranı 2,22 kat daha fazla bulunmuştur.

Sonuç: Araştırmamıza katılan öğrencilerde muhtemel OKB sıklığı beklenenin üzerinde çıkmıştır. Bu sonuç ülkemiz genelinde daha kapsamlı bir çalışmaya ihtiyaç olduğunu göstermektedir.

Anahtar kelimeler: Muhtemel obsesif-compulsif bozukluk, Batıl İnanç, Travma, Lise

Introduction

Obsessive-compulsive disorder (OCD) is an anxiety disorder characterized by persistent, inappropriate intrusive thoughts, ideas, images, or impulses that evoke anxiety and subjective resistance (obsessions) and urges to perform acts to neutralize obsessional fear according to rigidly applied rules (compulsive rituals). Themes in OCD symptoms generally concern contamination, violence, sex, religion, responsibility for harm, hoarding, and symmetry [1,2]. An

Mikail Ozdemir (✉), Seyhan Hidiroglu, Abdullah Sarioz, Melda Karavus
Department of Public Health, School of Medicine, Marmara University, Istanbul, Turkey
e-mail: mikailozdemir@yandex.com
H Gulnihal Ozdemir
Pathology Clinic, Lütfi Kırdar Training and Research Hospital, Istanbul, Turkey

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Australian scientist described it as "a vortex of hell not related to real living-a-whirlpool of suffering, and hell that stops us from living'' [3].

OCD is a chronic psychiatric disorder which has troubling thoughts (obsessions), and/or ritualized repetitive behaviors (compulsions) that are usually, but not always, done in response to the obsessive thoughts [4]. The most common obsessions in both children and adults with OCD are related to the fear of contamination, fear of some terrible happening, and the fear of harming a loved one. The most common compulsive behaviors in response to such thoughts can be washing again and again or checking excessively that everything is "okay" [5]. Other patients with OCD may be concerned with how prayers are said, have undue needs for symmetry or the urge to hold objects for fear of throwing out something "important" Mental acts (praying, counting, repeating words) are aimed at preventing or reducing anxiety. Fortunately, the individual, except with severe forms of OCD, is able to recognize that obsessions are the product of his or her own mind and are not imposed from without, the person with OCD realizes that such concerns and actions are senseless or excessive [6]. Obsessions and compulsions are behaviors that do not feel consistent with the patient's own beliefs about what is reasonable. For a long time, the disorder was thought to be rare in children and adolescents, but we now know that OCD often starts in childhood and adolescence and can develop into a chronic disorder with high rates of persistence [7]. The prevalence of OCD in childhood and adolescence is reported to be between 0,5% and 4% [8-10]. Generally onset is gradual, but acute onset has been noted in some cases.

Although the clinical presentation of OCD in children is usually similar to those in adults it is harder to diagnose in children. Children not always request help and the symptoms may not be ego-dystonic. However, most of the adults with OCD are aware that their obsessions and compulsions are unreasonable, children may be confused about whether their worries could be "true". More often the problem is identified by parents, who bring the child for treatment.

The unavailability of an appropriate psychometric measure the practical and theoretical difficulties differentiating obsessional personality, subclinical and clinical OCD causes it to be hard to diagnose children and the adolescents. In this study, Leyton Obsessional Inventory-Child Version was used to detect "Suggestive" OCD in a high school in Istanbul, Turkey. This inventory is recommended to screen for OCD and to refer the suggestive students for clinical diagnosis [11]. The aim was to work on non referred adolescents to find the frequency of suggestive OCD and to look for some related sociodemographic variables.

Patients and Methods

This descriptive study was carried out on high school students attending to a public high school in the province of Istanbul, Turkey in May 2014. Participants were chosen by using haphazard sampling in a public high school that had composite sociodemographic features. 20-item survey form of Leyton's Obsessional Inventory-Child Version and a self-report questionnaire was applied to 538 students out of 621 students attending all grades of public highschools.

This study was approved by the the Ethic Committee of Marmara University. All participants' parents received an informed consent form; those who did not wish to be included in the research were excluded (83 students, 13%).

The 20-item self-report version of the Leyton's Obsessional Inventory for Children was based on a survey of a country-wide population of high school students. The survey was the first part of a two-stage epidemiological study of obsessive compulsive symptoms in non referred adolescents. On the basis of these scores the students were referred for semistructured clinical interviews, for further clinical investigation. The inventory was applied as a self-report questionnaire. The students were asked not to write down their names, however some of them wrote down their names because they said they wanted to learn about their scores.

The inventory asks for the presence or absence of a number of obsessive preoccupations and behaviors. A sample item on the inventory was like, "Do you often feel like you have to do certain things even though you know you do not really have to ?" . Interference (the degree of intrusion on daily activities) was assessed for all "Yes" responses. "Yes" scores of 15 or more and/or "Interference" Scores of 25 or more were accepted to be suggestive of Obsessive Compulsive Disorder (SOCD). Using a selection criterion of 15 or more on the "Yes" scores gives a sensivity of 88% and a specificity of 77%, whereas using a cutoff score of 25 or more for "Interference" scores the sensitivity decreases to 75% and specificity increases to 84% [11]. Good reliability (= 0.80) for this version was reported in the Turkish community and its validity as a screening test for OCD in a non-clinical population was supported [12]. We have choosen 'Yes' scores because of students' best compliance.

Chi-square tests and Fisher's Exact Chi-square tests were used for the statistical analysis of the collected data to compare categorical variables, and Mann-Whtney U test was used for continuous variables. Yates correction was performed for 2x2 cross-tables. Exact logistic regression was used to obtain an odds ratio for the association between factors which found related with OCD ($p<0.25$). All tests were two-tailed with alpha set at 0.05.

Results

This descriptive study was carried out on 538 students, however 533 questionnaires and inventories were found to be sufficiently completed for evaluation. 298 students were girls (55.9%) and 235 students were boys (44.1%) (Table I). 76 students were found to have suggestive OCD out of 533 students (14.3%). Suggestive OCD Yes Score Count was found to be higher in girls (median:11) as compared to boys (median:10) ($p <0.001$).

Table I. Sociodemographic Variables of the students

Sociodemographic Variables		N (count)	% (percent)
Gender	Girl	298	55.9
	Boy	235	44.1
Grade	9th	238	44.7
	10th	119	22.3
	11th	96	18.0
	12th	80	15.0
Living with Parents	Yes	511	95.9
	No	22	4.1
Family Structure	Living together	457	85.7
	Divorced	76	14.3
Total		533	100

Suggestive OCD remained significantly associated with having a superstition, parents' living together, reporting to be traumatized in childhood, reporting to have a psychological disorder, having another health problem, having a member with psychological disorder in his/her family (all $p < 0.05$) (Table II). When the students having suggestive OCD and not having suggestive OCD were compared to gender and living with family, no statistically significant result was obtained ($p=0.104$; $p=0.538$ respectively). In addition, there were no significant differences found between groups on demographic variables including academic grade of students, father's educational level and mother's educational level.

Table II. Distribution of Suggestive OCD presence among students according to variables

		Suggestive OCD Present N (%)	p
Gender	Girl	49 (16.4%)	0.104*
	Boy	27 (11.5%)	
Having a supersitition	Yes	15 (24.2%)	0.017*
	No	61 (13.0%)	
Parents living together	Yes	58 (12.7%)	0.011*
	No	18 (23.7%)	
Traumatized in childhood	Yes	21 (36.2%)	<0.001*
	No	55 (11.6%)	
Living with family	Yes	72 (14.1%)	0.538†
	No	4 (18.2%)	
Having a psychological disorder	Yes	15 (34.9%)	<0.001*
	No	61 (12.4%)	
Having an another disorder	Yes	20 (25.3%)	0.002*
	No	56 (12.3%)	
Having a member with psychological disorder in family	Yes	11 (33.3%)	0.003†
	No	64 (12.9%)	

*Chi-square test is used † Fisher's Exact Test is used

These factors which were found to be related to suggestive OCD (Table II) are reassessed by logistic regression. The logistic regression model was statistically significant ($\chi 2$: 29.187, $p < 0.001$). Of the seven predictor variables, only two were statistically significant: namely reported 'trauma in childhood' and 'declared a psychological disorder' (Table III). Students who declared to be traumatized in childhood had 3.55 (95% CI: 1,86-6.77) times higher odds to exhibit suggestive OCD than those who declared not to be traumatized. Also students who reported to posses a psychological disorder had 2.22 (95% CI: 1.03-4.75) times higher odds to exhibit suggestive OCD than students who did not.

Table III. Logistic regression predicting likelihood of Suggestive OCD

	B	E.	Wald	Odds Ratio	95% CI for O.R	
					Lower	Upper
Having a psychological disorder	0.799	,388	4.231	2.222	0.038	4.757
Trauma	1.268	,330	14.797	3.552	0.862	6.776
Constant	-2.098	,149	199.013	.123		

Note: Having a psychological disorder compared present to absent, trauma is for traumatized in childhood compared present to absent

We used the four-factor structure of symptom dimensions described by Palulu and Erol (I) cleaning/fastidiousness/ tidiness; (II) repeating/ indecision; (III) lucky number/word; (IV) checking; and found no differences among socio-demographic groups regardless of presence of suggestive OCD [12].

Table IV. Distribution of having a superstition among students according to sex

		Superstition Present N (%)	p
Gender	Girl	46 (15.4%)	0.002*
	Boy	16 (6.8%)	
	Total	62 (11.6%)	

*Chi-square test is used

Having a psychological disorder was relatively low among students who lived with their families and whose parents lived together according to each item's opposite condition (p=0.005 and p<0.001 respectively) (Table V).

Table V. Distribution of having a psychological disorder among students according to variables

		Having a psycho. disorder Present N (%)	p
Gender	Girl	26 (8.7%)	0.530*
	Boy	17 (7.2%)	
Living with parents	Yes	37 (7.2%)	0.005†
	No	6 (27.3%)	
Parents live together	Yes	26 (5.7%)	<0.001*
	No	17 (22.4%)	

*Chi-square test is used † Fisher's Exact Test is used

Girls had a superstition 2.5 times more than boys and this was statistically significant (p=0.002) (Table IV). Superstition type was also asked as an open-ended question. Common answers were; 'If a black cat goes across you, you will have bad luck' and 'if you walk under a ladder, you will have bad luck'.

Discussion

In this descriptive study, 76 students out of 533 students were found to have suggestive OCD. The prevalence of OCD is still largely a hidden epidemic possibly due to the secrecy and denial of the disorder by the individuals.

In the year of 2000, The National Institute of Mental Health (NIMH) suggested that the disorder is more common than previous reports [13]. High OCD frequency (14.3%) reported herein may be explained by the fact that we included 'Suggestive' OCD cases as well. Or it is also possible that the prevalence of OCD is actually higher than previously thought as reported by the NIMH [13]. It is advised not to make comparisons across studies because thresholds for diagnostic sensitivity may differ considerably, as well. The highly competitive educational system in Turkey may be a stress factor among students and that exacerbations of symptoms may be related to stress is defined well in the literature. Our study population consisted students of 14 to 19 years of age and according to Rasmussen and Tsuang ages 12 to 14 are the ages of maximal incidence [14]. Further studies in large scale may be of importance to confirm the high prevalence of OCD among students in Turkey.

In our study suggestive OCD was found to be more frequent in girls (16.4%) as compared to boys (11.5%) (p=0.104) and also 'Yes' score count was significantly higher in girls compared to boys (p<0.001). In some studies OCD is reported to be seen equally common in males and in females and clinical reports of childhood OCD find that males outnumber females [15-17]. This discrepancy requires further investigation as social and cultural factors may be associated with the occurrence of OCD. Another study from Spain addressing the same issue reported a similar prevalence of OCD when adjusted for gender and/or shool grade [18].

The prevalence of SOCD did not differ throughout the studied school grades. The presence of SOCD was found to be statistically significant according to the parents' marital status (ie. living together, living separately or divorced) (p=0.011). Opposite to our finding, in a study significantly fewer OCD patients were reported to come from broken

homes, this may be explained by cultural differences [19]. Results also showed that having a superstition was associated with SOCD, many physicians accept superstition as a parameter of OCD [20-21].

When the SOCD students were compared to the non-SOCD students in terms of their fathers' or mothers' educational level the difference was not statistically significant. However SOCD prevalence was lowest among students whose parents both were not graduates of any school. If one accepts the positive link between the educational level of the parents and their socioeconomic level this finding is surprisingly conflicting with the report by Thomsen et al. [19].

One major finding of this study is that the exposure to psychological trauma in childhood is closely related to SOCD. Similarly, exposure to childhood psychological trauma was associated with an increased risk of having at least one anxiety disorder in a study from Sudan [22]. Furthermore, a relationship between childhood trauma and the subsequent development of panic disorder has been previously described in a number of studies [23,24].

Conclusion

The prevalence of suggestive OCD among high school students reported herein is higher when compared to several previous studies. The prevalence of OCD may be a hidden epidemic possibly due to the secrecy and denial of the disorder by the individuals. Routine screening for OCD's by mental health professionals with validated instruments of OCD such as Leyton Obsessional Inventory, Mausley Obsessional Compulsive Inventory, Yale-Brown Obsessive Compulsive Scale and Diagnostic Interview Schedule (DIS) may reveal a higher than expected prevalence.

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