Prevalence of obsessive compulsive spectrum disorder in patients seeking dermatological consultation

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Background
Previous studies have reported the relation between some dermatological presentations and obsessive compulsive disorder (OCD). The aim of this study is to estimate the prevalence of OCD in patients with dermatological disorders attending Mansoura University Hospital, as well as describe the different dermatological presentation of the OCD and possible association between dermatological lesions and the severity OCD.

Patients and methods
The study was conducted on 500 patients at the Dermatology Outpatient Clinic of Mansoura University. The patients were assessed by *Diagnostic and statistical manual of mental disorder* V OCD criteria and the Yale Brown Obsessive Compulsive Scale, Arabic version for assessment the severity.

Results
Among 500 patients, 55 (10.6%) were diagnosed as having OCD spectrum, comprising two (3.8%) with skin excoriations, 14 (26.4%) with trichotillomania, two (3.8%) with body dysmorphic disorder, 0 (0.0) with hoarding disorder, and 37 (69.9) with OCD.

Conclusion
There was an increased prevalence of OCD spectrum disorders among patients with dermatological disorders. Detection and diagnosis of comorbid psychiatric problems with skin disease is critical to the optimal management of psychodermatological disorders.

Keywords:
dermatology, obsessive compulsive disorder, outpatients, Yale Brown Obsessive Compulsive Scale

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Introduction

Many patients with obsessive compulsive disorder (OCD) feel embarrassed or guilty about their compulsions and are reluctant to discuss them with family or physicians, which, in addition to, the fact that physicians are often unaware of the skin manifestations of OCD. Most patients with OCD (~80%) present to physicians other than psychiatrists (Kestenbaum, 2013). Obsessive thoughts involving the skin and its related lesions have been reported to be more frequently encountered problems in patients seeking dermatology clinics; they have also been reported to reflect an underlying obsessive compulsive symptoms in patients with dermatological disorders (Fineberg *et al.*, 2003).

It is estimated that almost one-third of the patients seeking dermatological consultations throughout the world have some psychological presentations or comorbidities. Therefore, it is important for the dermatologist to be oriented to this co-occurrence to help their patients to get the proper management (Yadav *et al.*, 2013).

The psychocutaneous disorders can be owing to psychophysiological disorders, where skin lesions are aggravated by stressful factors; primary psychogenic disorders, where the skin lesions are self-induced; secondary psychiatric disorders, where the patient get depressed or anxious about his skin disease; and cutaneous sensory problems as in itching, burning, and stinging sensations without having any skin disorder (Mircea *et al.*, 2015).

Cutaneous manifestations of OCD spectrum in adults are usually neurotic excoriations, acne excoriations, fears of contamination, excessive hand washing, trichotillomania, excessive concern with appearance, and excoriation (Chaudhary *et al.*, 2018). Epidemiological studies report its life-time

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prevalence as 2–3%; however, because of the secretive nature of the signs and symptoms, the actual prevalence may be much higher (CilliÇilli *et al.*, 2004). Almost 25% of patients seeking medical advice from nonpsychiatric physicians with skin problems have obsessive compulsive symptoms. Approximately 20% only of all patients with OCD are seeking psychiatric consultations and are on management plan. Unfortunately, those few receiving treatment remained undiagnosed for many years (Kestenbaum, 2013).

The psychopathology of this association remains unclear. Gupta *et al.* (2005) mentioned that psychiatric pressure associated with dermatology disorders as the reason for OCD (Gupta *et al.*, 2005). However, it is important to consider the relation between OCD and dermatological diseases as skin disorder might have existed before OCD, and sometimes there are overlaps in the symptoms related to OCD and dermatology problems, which could be the secondary complication of OCD. OCD could result in poor body image, which leads to obsessive thoughts regarding physical diseases. Consequently, these patients will consult dermatologists more frequently (Leon *et al.*, 2013).

Patients and methods

This was a descriptive cross-sectional study that was carried out on 500 patients with skin lesions, recruited from the out-patient clinic of dermatology Mansoura University hospital, with seven cases recruited weekly over a duration of 1 year. Patients of either sex with their age ranged from 18 to 65 years old were included in this study. The study was approved by the ethical, scientific committee, and confidentiality of data was kept by the university hospital and the responsible authorities in Mansoura Faculty of Medicine.

Written informed consent was obtained from each patient before being included in the study. A systematic random sample was assessed by a specialized dermatologist. The dermatological diagnosis was confirmed by different methods, such as biopsy, woods light, and dermoscopy. The suspected patients were clinically assessed through history and psychiatric examination using a semistructural interview questionnaire. Those patients who met the diagnostic criteria for *Diagnostic and statistical manual of mental disorder* (DSM-V) received further assessment for the severity of OCD by Yale Brown Obsessive Compulsive Scale (YBOCS), Arabic version. All patients included in the study were classified into OCD group and non-OCD group.

Statistical analysis

Data were fed to the computer, and analysis was done by IBM SPSS software package, version 20.0 (American developer IBM). Qualitative data were described using percent and number. Quantitative data were described using median (minimum and maximum) and interquartile range for nonparametric data and mean and SD for parametric data after testing normality using Kolmogorov–Smirnov test. Significance of the obtained results was judged at the 5% level. The used tests were c^2 test for categorical variables, to compare between different groups. Student *t* test was used for parametric quantitative variables, to compare between two studied groups, and Mann–Whitney test for nonparametric quantitative variables, to compare between two studied groups.

Results

Fischer exact test

The demographic feature of the total sample is shown in Table 1. Of 500 patients, 55 (10.6%) met the DSM-V criteria for OCD.

According to the demographic characteristics, as shown in Table 1, there was no significant difference between the OCD group and the rest of the studied group regarding age and sex, but there was a significant difference between the two groups regarding residence, as living in urban area is significantly associated with OCD group [14 (24.1%) of 55 patients], with *P* value less than 0.001.

According to the occupation (unemployed), there was a significant difference between the OCD group and the rest of studied group [seven (77.8%) of nine], with *P* value less than 0.001.

According to the marital status (single), there was a significant difference between the OCD group and the rest of studied group [13 (22.03%) of 55], with *P* value of 0.008.

There was no significant difference between the OCD group and the rest of the studied group regarding the type of skin diseases, except for some patients with hair diseases in the OCD group [17 (20.7%) of 82], with *P* value of 0.006 (Table 2).

Table 1 Demographic characteristics of the studied groups

Parameters	Total (*N*=500)	OCD group (*N*=55)	Test of significance	Odds ratio (95% CI)
Age (years) [median (minimum–maximum)]	32.0 (16.0–65.0)	30.0 (18.0–60.0)	z=1.36 P=0.18	
Sex [*n* (%)]				
Male (r) (*N*=220)	220	20 (9.1)	χ^2=0.94 P=0.33	1
Female (*N*=280)	280	33 (11.8)		1.33 (0.74–2.4)
Residence				
Rural (*r*) (*N*=442)	442	39 (8.8)	χ^2=12.69 P<0.001*	1
Urban (*N*=58)	58	14 (24.1)		3.29 (1.66–6.52)
Occupation				
Unemployed (*N*=9)	9	7 (77.8)	χ^2=37.8 P=<0.001*	33.7 (6.6–173.7)
Officer (*N*=192)	192	11 (5.7)	χ^2=1.9 P=0.16	0.59 (0.27–1.26)
Housewife (*N*=213) (*r*)	213	20 (9.4)	–	1
Student (*N*=78)	78	13 (16.7)	χ^2=3.01 P=0.08	1.93 (0.91–4.1)
Others (*N*=8)	8	2 (25.0)	χ^2=2.1 P=0.15	3.22 (0.61–17.01)
Marital status				
Single (*N*=59)	59	13 (22.03)	χ^2=11.1 P=0.008*	0.32 (0.16–0.64)
Married (*N*=437) (*r*)	437	36 (8.24)	–	1
Others (*N*=4)	4	4 (100)	–	Undefined

χ^2, χ^2 test; CI, confidence interval; OCD, obsessive compulsive disorder; *z*, Mann–Whitney *U* test. **P* value statistically significant if *P* value less than 0.05.

Table 2 Types of skin diseases diagnosed in the studied groups

Skin disease	Total (*N*=500)	OCD group (*N*=55) [*n* (%)]	Test of significance	Odds ratio (95% CI)
Acne vulgaris	49	7 (14.3)	χ^2=0.78 P=0.38	1.47 (0.62–3.5)
Dermatitis artifacta	6	0		Undefined
Eczema	35	7 (20)	χ^2=3.5 P=0.06	2.2 (0.91–5.32)
Others (psoriasis–lichen-urticaria, etc.)	347	27 (7.8)	χ^2=1.38 P=0.24	0.74 (0.45–1.22)
Hair diseases	82	17 (20.7)	χ^2=7.4 P=0.006*	2.3 (1.25–4.3)

χ^2, χ^2 test; CI, confidence interval; FET, Fischer exact test; OCD, obsessive compulsive disorder. **P* value statistically significant if *P* value less than 0.05.

Table 3 Nail disease diagnosed in the studied groups

Nail disease	Total (*N*=500)	OCD group (*N*=55) [*n* (%)]	Test of significance	Odds ratio (95% CI)
Positive cases	50	11 (22)	P=0.012*	2.48 (1.19–5.18)
Onychomycosis	30	11 (36.7)	P=0.001*	5.09 (2.28–11.38)
Psoriasis	10	0	–	
Nail dystrophy	4	0	–	
Paronychia	6	0	. . . . .	

CI, confidence interval; OCD, obsessive compulsive disorder. **P* value high statistically significant if *P* value less than 0.05.

Table 4 Distribution of obsessive compulsive disorder spectrum disorders

OCD spectrum disorders	OCD (*N*=55) [*n* (%)]
Skin excoriations	
Positive cases	2 (3.8)
Trichotillomania	
Positive cases	14 (26.4)
Body dysmorphic disorder	
Positive cases	2 (3.8)
Hoarding disorder	
Positive cases	0
OCD	
Positive cases	37 (69.9)

OCD, obsessive compulsive disorder.

According to the nail disease, there was a significant difference in onychomycosis between the OCD group and the rest of the studied group. The OCD group had 11 of 30 (36.7%) patients with onychomycosis, with *P* value 0.001 (Table 3).

The OCD spectrum disorder composition in OCD group was two (3.8%) with skin excoriations, 14 (26.4%) with trichotillomania, two (3.8%) with body dysmorphic disorder, 0 (0.0) with hoarding disorder, and 37 (69.9%) with OCD symptoms (Table 4).

The composition of OCD symptoms was 22 (59.5%) with fear of contamination, 10 (27.03%) with

Table 5 Distribution of obsessive compulsive disorder symptoms

OCD symptoms	*N*=37 (69.9%)
Fear of contamination	22 (59.5)
Onychotillomania	10 (27.03)
Checking	3 (8.1)
Counting	1 (2.7)
Religious obsessive thoughts	1 (2.7)

OCD, obsessive compulsive disorder.

onychotillomania, three (8.1%) with checking, one (2.7%) with counting, and one (2.7%) with religious obsessive thoughts (Table 5).

Discussion

OCD spectrum needs to get more attention. Although its lifetime prevalence rate is 2–3%, it is not diagnosed as frequently as anxiety and depression by dermatologists. Several studies have found that OCD is a psychiatric disorder that has a high prevalence in patients seeking consultations in dermatology clinic (Fineberg *et al.*, 2003).

In the current study, 55 of 500 patients with dermatological disorders were diagnosed with OCD, and the prevalence of OCD in patients with dermatological disorders was 10.6%.

Our results were in correlation with previous studies in which patients were assessed by DSM-IV and YBOCS, such as in studies done in Iran by Abkhaz *et al.* (2007), where the prevalence rate was 14%, and Omranifard *et al.* (2007), where the prevalence rate was 22.1%.

In the study by Sheikhmoonesi *et al.* (2014), the prevalence of OCD was found to be 9.1%. They reported the most common symptoms were fear of contamination and hand washing. They concluded that most samples came from villages, towns, or small-sized cities, especially in rural areas. The behaviors related to cleaning and washing are not seen as a problem. Moreover, the fact that ~60% of samples has no insight into their disorder may explain why these patients do not seek correct psychiatry clinics directly (Afkham *et al.*, 2007; Omranifard *et al.*, 2007; Sheikhmoonesi *et al.*, 2014; Ahmadian, 2017). However, the most recent study in Iran was conducted by Ahmadian (2017) at Shahid Beheshti University, where 164 patients with dermatological disorders were assessed by the use of Maudsley OCD scale. The prevalence rate was 49.4%. This prevalence is much higher than other studies, which may be owing to the use of different assessment scale.

Moreover, this issue was assessed with an interest in Turkey by the study of Demet *et al.* (2005) at Celal Bayer University 166 patients assessed by DSM-IV and YBOCS, and the prevalence rate was 24.7% (Demet *et al.*, 2005).

Another study in Turkey was conducted by Ünsalver *et al.*, 2012, in a dermatology clinic, and the prevalence rate was 21.2% (Ünsalver *et al.*, 2012).

The difference in the prevalence of OCD can be explained by difference sample size and cultural and local beliefs. Moreover, the high incidence of referrals to dermatology clinics signifies that clinical symptoms of OCD are very much similar to other psychiatric disorders, which mainly presents by physical discomfort and are referred to nonpsychiatric clinics.

In the current study, no significant difference was found in the prevalence of OCD among male [20 (9.1%) of 220 male patients] and female [33 (11.8%) of 280 female patients], with *P* value of 0.33. The number of male patients was substantially lower than female (male=20 and female=33). These results are in agreement with the study of Afkham *et al.* (2007); Sheikhmoonesi *et al.* (2014), and Ahmadian (2017), where there was no significant difference in the prevalence of OCD among male and female, but they reported the predominance of female patients over men in the overall sample, as well as in OCD-positive cases.

This differential sex distribution reflects that appearance plays an important role for women in the society. It also may reflect differences in help-seeking behavior, which is more characteristic of women than men. In the current study, there was a significantly higher prevalence regarding residence, as in urban areas, the number of patients with OCD was 14 of 58 (24.1%), with *P* value less than 0.001. This may be explained by the nature of lifestyle and the stressful condition in urban than rural areas. In the current study, there was a significant higher prevalence regarding occupation; the number of unemployed in the OCD group was seven (77.8%) out of nine, with *P* value less than 0.001. There was no significant increase in the prevalence of OCD among other occupations, and this is owing to in our locality, most were employed, especially in a governmental job, for example, officer make people feel stable and unthreatened and this may explain the differences between the groups. In contrast to our results, there was no significant difference between relative frequency of OCD and occupation as reported in

the research studies of Demet *et al.* (2005), Omranifard *et al.* (2007), and Ahmadian, (2017). In the current study, there was a significant higher prevalence regarding the marital status, especially having more single patients in the OCD group, [13 (22.03%) of 59], with *P* value of 0.008.

These current results were in agreement with Sadock and Sadock (2009) who reported that OCD was observed more in single population and was considered as one of the main reasons for having no desire for marriage as it could cause problems in relationship (Sadock and Sadock, 2009). However, Omranifard *et al.* (2007) and Sheikhmoonesi *et al.* (2014) reported that no relationship was found between the prevalence of OCD and marital status. The difference in results is probably owing to cultural differences. In the current study, there was no significant difference between the two groups regarding special habits, skin disease characteristics, and types of skin disease.

There was no significant correlation between dermatological diseases (acne vulgaris, dermatitis artifacta, and eczema) and the prevalence of OCD. Although eczema was detected more frequently in OCD group [seven (20%) of 35], this was not statistically significant. This may be explained by the fact that the alkaline detergent is widely used by almost all housewives in our locality. The study of Ünsalver *et al.* (2012) found that eczema was more commonly associated with OCD (23.8%). This was explained by that psychocutaneous reactions and eczema were related to OCD.

This relationship may be owing to neurotransmitters and hormones, which act on keratinocytes, Langerhans cells, or even Merkel cells. Neuropeptides, substance P, substance Y, and melanocyte-stimulating hormone may also play a role in psychocutaneous reactions. In our study, there was significantly higher prevalence of hair disease in OCD group [17 (20.7%) out of 82], with *P* value of 0.006. This was in agreement with the study done by Radmanesh *et al.* (2002), where 50 patients with pathological hair loss were evaluated to determine the presence and level of depression, anxiety, OCD, and obsessive compulsive personality disorder (Radmanesh *et al.*, 2002).

In the current study, according to the nail disease, there was significantly higher prevalence of onychomycosis in the OCD group [11 (36.7%) out of 30], with *P* value 0.001. In the study of Omranifard *et al.* (2007), a significant relationship was detected between nail diseases (fragility, hang nail, paronychia) and OCD. They concluded that obsessive hand washing was probably the main reason triggering nail diseases. Our results were in agreement with that of Sheikhmoonesi *et al.* (2014). The most prevalent complaint of patients with dermatological disorders with OCD was skin appendages (hair and nails), and then dermatitis (contact dermatitis, seborrheic, and atopic) and eczema. It was found that there was no significant correlation between dermatological diseases and the prevalence of OCD. This result was in line with the results drawn from the study of Fineberg *et al.* (2003). Different theories exist on the relationship between OCD and dermatological diseases. In fact, some scholars do not believe OCD as the etiology of some dermatology lesions but argue that dermatological diseases are sometimes accompanied by OCD.

This was in contrast with the study conducted by Demet *et al.* (2005) in which they found significant difference between obsessive compulsive manifestations and diseases of the sebaceous glands (P=0.035), and at that time, future researches focused on individual anxiety, and sensitivity may provide information that better explains this relationship (Demet *et al.*, 2005).

In our study, the prevalence of OCD was 10.6%, according to the DSM-V criteria for OCD spectrum disorders. The composition of the OCD group was as follows: two (3.8%) with skin excoriations, 14 (26.4%) with trichotillomania, two (3.8%) with hoarding disorder, and 37 (69.9%) with OCD. The composition of OCD symptoms was as follows: 22 (59.5%) with fear of contamination, 10 (27.03%) with onychotillomania, three (8.1%) with checking, one (2.7%) with counting, and one (2.7%) with religious obsessive thoughts. The YBOCS questionnaire score in the OCD group was a median of 13, with minimum 5 and maximum 32, which meets the criteria of mild OCD, which shows why large number of cases were passed undiagnosed in the dermatology clinic.

Conclusion

Skin and nervous system arise from a common embryological origin: the embryonic ectoderm. This may be the reason by which the skin gives an account of our mental and emotional state through infections and injuries. This is illustrated by the fact that up to 33% of patients with dermatological disorders have concurrent psychiatric disorders or psychosocial aspects. OCD spectrum is one of the most common psychocutaneous disease. The prevalence of OCD in

a dermatological practice may be much higher than in the general population. Psychocutaneous medicine focuses on the boundary between psychiatry and dermatology. Understanding the psychosocial context of skin disease is critical to the optimal management of psychodermatological disorders and for some aspects of secondary prevention of a wide range of dermatological disorders. Once the comorbidity has been diagnosed, management requires a dual approach, addressing both dermatological and psychological aspects. Consultation-liaison psychiatry is an appropriate setting for an integral biopsychosocial treatment of these patients.

Moreover evidence is mounting for support of a neurobiological basis in the etiology of OCD, and there may be a common factor such as a congenital predisposition to both OCD and dermatology conditions. Further studies of OCD in patients with dermatological disorders may provide new insights into the pathophysiology of both disorders.

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Conflicts of interest
There are no conflicts of interest.

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