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Prevalence, quality of life and psychosocial function in obsessive-compulsive disorder and subclinical obsessive-compulsive disorder in northern Germany

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Abstract *Background:* Despite the worldwide relevance of obsessive-compulsive disorder (OCD) there are considerable differences in prevalence rates and gender ratios between the studies and a substantial lack of prevalence data on subclinical OCD. Moreover, data on quality of life and on psychosocial function of subjects with OCD and subclinical OCD in the general population are missing to date.

Methods: German versions of the DSM-IV adapted Composite International Diagnostic Interview were administered to a representative sample of 4075 persons aged 18–64 years living in a northern German region. Specific DSM-IV based criteria for subclinical OCD were used.

Results: The life-time prevalence rates for OCD and subclinical OCD were 0.5 % and 2 %, respectively. Twelve month prevalence rates were 0.39 % and 1.6 %, respectively. The gender female:male ratio was 5.7 in OCD and 1.2 in subclinical OCD. In various measures of psychosocial function and quality of life, OCD and subclinical OCD were significantly impaired. However, subclinical OCD subjects did not visit mental health professionals more often than controls.

Conclusion: Due to different epidemiological characteristics subclinical OCD might represent a syndrome distinct from OCD which is also associated with significant impairments in personal and interpersonal functions and in quality of life.

Key words Obsessive-compulsive disorder · Subclinical OCD · Epidemiology · Quality of life

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Introduction

Since Roth and Luton found a prevalence of obsessive-compulsive disorder (OCD) of 0.3 % in 1942 and Rudin described a prevalence of 0.05 % in 1953 the prevalence and the importance of obsessive-compulsive disorder have been underestimated for many decades. Fourteen worldwide studies based on the Present State Examination (Wing et al. 1974) almost omitted the diagnosis of OCD by a very strict diagnostic hierarchy, excluding OCD in the presence of significant depressive symptoms. The Epidemiologic Catchment Area (ECA) (Robins et al. 1984) survey, based on the Diagnostic Interview Schedule (DIS) (Robins et al. 1981) which included the DSM-III (APA 1980) criteria for OCD, was the first epidemiologic study providing relevant information about the epidemiology and comorbidity of OCD. Carried out across five different sites in the US it showed a lifetime prevalence rate for OCD ranging from 1.9 % to 3.3 % diagnosed without DSM-III exclusion criteria and 1.2 % to 2.4 % with such exclusions (Karno et al. 1988). Reviewing nine population surveys which used the DIS Bebbington (1998) recently estimated a six-month prevalence of OCD ranging from 0.7 to 2.1 % underscoring the socioeconomic importance of OCD which is considered to have an early age of onset, and a chronic and disabling course in many patients (Rasmussen & Eisen 1992). Recent population surveys using the Composite International Diagnostic Interview (CIDI) (Robins et al. 1988) found an OCD lifetime prevalence of 0.9 % in the Netherlands (Bijl et al. 1998) and 0.7 % in the group of adolescents and young adults in Munich (Wittchen et al. 1998).

Although it is still generally thought that OCD is equally common in males and females (Rasmussen &

Eisen 1992; APA 1994) epidemiological data point to a gender ratio (female:male) of 1.0 to 2.3 in six month prevalence and of 0.9–3.4 in lifetime prevalence of OCD (Bebbington 1998). Moreover, gender ratios for subclinical OCD have not yet been examined.

Although it is assumed that obsessive-compulsive symptoms not meeting the diagnostic criteria are far more prevalent than OCD, little systematic investigation concerning this "subclinical OCD" has been carried out (Bebbington 1981; 1998). Angst (1993) set up specific DSM-III related criteria for the subclinical diagnosis of OCD and found a lifetime prevalence in subjects (age < 30) of 5.7 % whereas the full DSM-III diagnosis was met in 1 %. Investigating comorbidity patterns of this subclinical OCD in the Zurich Study (Angst et al. 1993), it was found to be associated with depressive disorders as well as with social phobia and agoraphobia. Recently, based on DSM-IV criteria, a 1-month prevalence of 0.6 % of clinical and subclinical OCD was described (Stein et al. 1997).

In our study we present more data on prevalence, quality of life and interference with daily activities of OCD and subclinical OCD to look at syndromes below the current diagnostic threshold.

Sample and methods

Sample

The data come from the baseline cross-section of a longitudinal study as part of the project "Transitions in Alcohol Consumption and Smoking". The survey is based on individuals living in the northern German city of Lübeck or in one of 46 surrounding communities, constituting the catchment area of Lübeck. The aim of the community selection was precise representation with regard to settlement structure. The selection of the 46 surrounding communities was based on a geographic system, clustering and dividing all German communities into so-called BIK-City-Regions (Behrens 1995) (for details see Meyer et al.). The total population living in this area consisted of 325,107 individuals. Considering the inclusion criteria according to age (18–64) and nationality (to avoid language problems, only Germans were included), 193,452 citizens remained in the target population. A random sample of 6447 addresses was drawn from all registration office files. Of these, 619 (9.6 %) turned out as not fulfilling the inclusion criteria (subject moved out of the sampling area; subject was not known under the registered address; subject had non-German nationality; subject was deceased, lived in prison or in another institution). Of the remaining 5829 individuals, a total of 4093 completed the interview which corresponded to a response rate of 70.2 %. Reasons for non-response were refusal (n=979), no contact with the sampled individual (n=668), non-participation due to disease (n=83); incomplete interview or interview obtained by phone (n=9). An analysis of the reasons for non-response revealed that older subjects refused more often and younger ones more frequently moved out of the sampling area or could not be reached (Hess et al. 1998). Due to these compensatory effects, a very small total deviation from the target population and the final sample resulted, which would not justify the methodological problems of weighting procedures. Of the 4093 interviews 18 could not be analyzed due to non-systematic reasons.

Diagnostic assessment

The diagnostic interview was done face to face with the fully structured and standardized M-CIDI (Wittchen et al. 1995; Lachner et al. 1998), the most recent German version of the WHO CIDI (Robins et al. 1988) adapted to DSM-IV. The responses of the participant were directly entered into a portable computer. The interviews were performed by trained freelancer workers, interviewing both as a chief occupation and as a sideline; however, all were experienced in conducting health surveys. To control for a possible interviewer bias, a heterogeneous interviewer crew was selected, consisting of 56 individuals of all age groups (M=36.1; SD=11.2; range 48) and both sex (46.3 % females). After 5 days of initial interviewer training, continuous individual brush up sessions were conducted by WHO-CIDI trainers. A complete hardcopy of all interviews was edited by WHO-CIDI trainers with regard to consistency and clinical relevance of the symptoms. In regular meetings, conducted by experts, uncertain cases were clarified by consensus and homogeneous editing work was guaranteed. Weekly contacts and feedback made it possible to add missing information by immediate inquiry and continuous monitoring of interviewer activities.

Quality of life was measured with the Satisfaction with Life Scale (SWLS) consisting of 5 items (Diener et al. 1985). Additionally, satisfaction with life was assessed with a 5-point rating scale differentiating 8 life domains (work, partnership, family, friends, financial situation, living conditions, health), adopted from the Questionnaire on Health Behaviour (Dlugosch & Krieger 1995). These ratings were summarized in an unweighted way to yield a domain satisfaction composite score.

All diagnoses were made according to DSM-IV by M-CIDI diagnostic software (version 1.0 of 3–3–1997).

The diagnosis of subclinical OCD was also based on DSM-IV criteria. To enter the OCD section of the CIDI, a general question, describing the essential features and examples about obsessions and compulsions must be affirmed. Then the formal features of obsessions and compulsions were considered. These additional questions concern the feeling that the symptoms are foolish or overdone, that the symptoms are repetitive or recurrent and that the symptoms are time consuming or cause a substantial impairment or distress. These formal features correspond to the DSM-IV criteria A, B, C. To meet our criteria for subclinical OCD the formal criteria of obsessions or compulsions were fulfilled only partially (at least 1 criterion but not all). In the last diagnostic step, the contents of obsessions and compulsions of each selected individual were checked according to DSM-IV criterion A2 (exclusion of excessive worries about real-life problems) and criterion D (symptoms restricted to another Axis I disorder).

Analysis procedures

Most of the results were calculated with descriptive statistical procedures. Significance testing was done by chi-square analysis. Multiple comparisons were done by MANOVA procedures. All described computations were performed with the SPSS software package Version 7.5.1.

Results

Two-hundred forty-three subjects (6 %) agreed having experienced distressing or foolish thoughts or fantasies, typically seen in OCD; 160 subjects (3.9 %) agreed having experienced distressing compulsions, typically seen in OCD, repetitively. In all, 355 subjects (8.7 %) agreed to these introducing questions for obsessions and compulsions. This sample comprised 156 male (3.9 %) and 199 female (4.8 %) subjects. From this sample, 3 male (0.1 %) and 17 (0.4 %) female subjects fulfilled the CIDI lifetime diagnosis for OCD (Table 1).

According to our definition of subclinical OCD, 37 (0.9 %) male and 46 (1.1 %) female subjects met our for-

Table 1 Prevalence rates, age of onset and duration of OCD and subclinical OCD in the general population (N=4075). T-test between OCD (N=20) and subclinical OCD subjects (N=78)

	Males N=2045		Females N=2030		Total N=4075		T-test
	OCD	Subclinical OCD	OCD	Subclinical OCD	OCD	Subclinical OCD	
Lifetime prevalence N (%)	3 (0.1)	35 (0.9)	17 (0.4)	43 (1.1)	20 (0.5)	78 (2.0)	
12-month prevalence N (%)	1 (0.02)	27 (0.66)	15 (0.37)	33 (0.8)	16 (0.39)	60 (1.6)	
Age of onset (SD)	22.7 (13)	37.1 (10.7)	25.4 (10.1)	34.1 (14.5)	25 (10.5)	35.5 (12.8)	t=3.8; df=97 p=0.003
Duration of OCD/ subclinical OCD (SD) (years)	6.3 (6)	0.5 (3.1)	9.1 (10.8)	1.2 (6.1)	8.7 (10.1)	0.9 (4.8)	t=–7.3; df=97; p< 0.001

mal criteria. However, when analyzing the content of these symptoms two male subjects were excluded due to the vague and general content of their concerns and three females were excluded because their symptoms met the diagnosis of eating disorder NOS (1) and undifferentiate somatization disorder (2) (Table 1). Thus, the gender female-male ratio for the full diagnosis of OCD was 5.7 (Fisher's exact test, two-tailed: p=0.001), for the subclinical diagnosis 1.2 (Fisher's exact test, two-tailed: p=0.49). The distribution of formal criteria for obsessions and compulsions in subclinical OCD is shown in Figs. 1 and 2.

The onset of OCD compared to subclinical OCD was significantly earlier (t=3.8; df= 97; p=0.003). The interval between the onset of symptoms and the last appearance of symptoms (duration) was significantly longer in subjects with OCD (t=–7.3; df =97; p< 0.001) (Table 1).

The comparison of the sociodemographic characteristics of the OCD and subclinical OCD subjects with the non-affected subjects showed significantly higher rates of unemployment in the OCD subjects than in controls (chi-square: 73.7; df=1; p< 0.0001) (Table 2).

The self-rated degree of impairment at worst episode and during the last month is shown in Table 3. Significant reductions in quality of life were found in OCD and to a minor degree in subclinical OCD subjects (Table 4). OCD subjects showed increased number of consultations of mental health professionals compared to subclinical subjects; however, both groups had significantly more days being off work during the last 12 months than controls (Table 5).

Comment

Our results show a lifetime prevalence of OCD in the general population of 0.5 % and a 12 month prevalence rate of 0.39 % which correspond to the lower range of prevalence rates in previous studies (Bebbington 1998; Bijl et al. 1998; Stein et al. 1997). The gender ratio revealed a predominance of females with a ratio of 5.7. This female preponderance is in line with previous epidemiological reports on

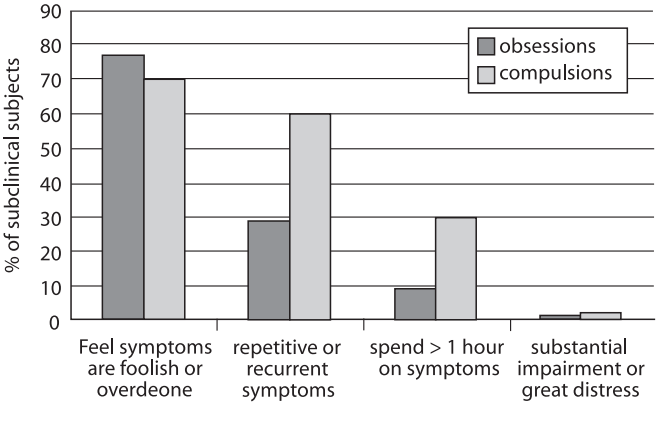

Fig. 1 Female subjects with subclinical OCD (N=43): 33 subjects reported on obsessions, 10 subjects reported on compulsions.

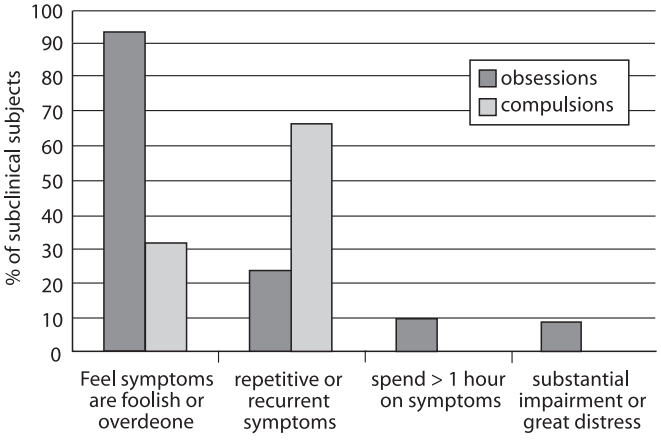

Fig. 2 Male subjects with subclinical OCD (N=35): 33 subjects reported on obsessions, 3 subjects reported on compulsions.

Table 2 Sociodemographic characteristics of the sample. (§ = % of the total sample). Comparison of OCD and subclinical OCD subjects with controls (Chi-square; *=p≤0.05; **=p<0.0001; n. s. = not significant)

	OCD N (%)	Subclinical OCD N (%)	Controls N (%)	Chi-square
N (%)§	20 (0.5)	78 (2)	3977 (97.5)	
Age: mean (SD)	36.7 (13.1)	37.2 (11.7)	41.7 (12.9)	ANOVA: F=6; df=2, 4072; p=0.002
Years of education:				
9	11 (55)	31 (39.7)	1772 (44.5)	n.s
10	5 (25)	26 (33.3)	1253 (31.5)	n.s
12–13	4 (20)	18 (23)	826 (20.8)	n.s
other	–	3 (3.8)	126 (3.2)	n.s
Professional status:				
Employed ≥ 35 h /week	6 (30)*	39 (50)	2083 (52.4)	3.9; df=1; p=0.04
Employed 15–35 h/week	1 (5)	9 (11.5)	411 (10.3)	n.s
Employed up to 15 h/week	2 (10)	2 (2.6)	153 (3.8)	n.s
Professional education	–	1 (1.3)	179 (4.5)	n.s
Unemployed	10 (50)**	3 (3.8)	217 (5.4)	73.7; df=1; p< 0.0001
Homemaker	4 (20)	9 (11.5)	399 (10)	n.s
Retired	–	2 (2.6)*	351 (8.8)	3.77; df=1; p=0.05
Other	2 (10)	13 (16.7)	160 (4.0)	n.s
Familial status:				
Married	6 (30)*	39 (50)	2391 (60.1)	7.5; df=1; p=0.006
Separated	–	1 (1.3)	59 (1.5)	n.s
Divorced	4 (20)*	9 (11.5)	316 (7.9)	3.9; df=1; p=0.04
Widowed	–	2 (2.6)	116 (2.9)	n.s
Never married	9 (45)	27 (34.6)	1099 (27.6)	n.s

Table 3 Self-rated degree of impairment at worst episode and in the past month

	Worst episode (%)		Past month (%)		
			Work/School/Home	Leisure	Social contacts
	Some	Much & very much	Some & much	Some & much	Some & much
OCD (N=20)	35	45	35	25	25
Subclinical OCD (N=78)	23	6.2	15.5	11.5	5

Table 4 Measurements of quality of life in subjects with OCD (N=15), in subclinical OCD (N=51), showing obsessive-compulsive symptoms during the last 6 months and controls (N=3958), adjusted for age

	Controls	OCD/controls MANOVA: WILKS-Lambda: 0.99; F=16.4; df=2, 3971; P<0.001		Subclinical OCD/controls MANOVA: WILKS-Lambda: 0.99; F=10.6; df=2, 4007; P<0.001		OCD/subclinical OCD MANOVA: WILKS-Lambda: 0.91; F= 1.8; df=2,62; P=0.05
	Adj. Mean	Adj. Mean	F; df=1, 3972; p	Adj. Mean	F; df=1, 4008; p	F; df=1; 63; p
SWLS						
General life satisfaction	18.3	12.9	24.5; <0.001	16	14.9; <0.001	4.9; 0.03
Satisfaction in 8 different life domains	31.5	24.1	30; <0.001	28.2	19.8; <0.001	5.7, 0.02

Table 5 Number of consultations and days being off work within the last 12 months in subjects with OCD (N=16), in subclinical OCD (N=60), showing obsessive-compulsive symptoms during the last 12 months and controls (N=3958), adjusted for age

	Controls	OCD/controls MANOVA: WILKS-Lambda: 0.99; F=8; df=4, 3982; P<0.001		Subclinical OCD/controls MANOVA: WILKS-Lambda: 0.99; F=4; df=4, 4024; P<0.001		OCD/subclinical OCD MANOVA: WILKS-Lambda: 0.87; F=1.9; df=4,67; P=0.1
	Adj. Mean	Adj. Mean	F; df=1, 3985; p	Adj. Mean	F; df=1, 4011; p	F; df=1; 70; p
No. of consultations/ last 12 months with family doctor	3	3.7	0.2; 0.66	5.8	11.6; 0.001	0.5; 0.48
No. of consultations/ last 12 months with psychiatrists	0.3	1.9	5.7; 0.02	0.36	0.04; 0.84	5.4; 0.02
No. of consultations/ last 12 months with psychologists	0.2	3.6	32.2; <0.001	0.68	2.5; 0.12	2.5; 0.1
Days/last 12 months being off work due to mental/medical problems	9.1	30	5.3; 0.02	21.7	7; 0.008	0.09; 0.75

Table 6 Comparison of DSM-IV OCD criteria with definitions of subclinical OCD used in different studies

	DSM-IV OCD	Definitions of subclinical OCD		
		Angst et al. (1993)	Stein et al. (1997)	Grabe et al.
1. Obsessions or compulsions (OC)	+	+	+	+
2. Recurrent, persistent or repetitive	+	+	+	At least 1 additional
3. Inappropriate, excessive or unrealistic	+		+	criterion from Nos. 2–6
4. Attempts to ignore, suppress or to neutralize such thoughts/impulses	+	–	+	
5. Marked distress; OC > 1 hour/day	+ or No. 6	+	–	
6. Significant interference with daily life	+ or No. 5	+	–	
7. Content of OC is not restricted to another Axis I disorder	+		+	+
8. OC are not caused by drugs, medication or a general medical condition	+		+	+

OCD (female:male ratios 0.9–3.4); however, the magnitude is unusual. In a comparable survey carried out in the Netherlands, a lifetime prevalence rate of OCD of 0.9 % and a gender ratio of almost 1 were found (Bijl et al. 1998).

The results on subclinical OCD are substantially determined by the definition of the relevant criteria (for different definitions see Table 6). Our criteria included a positive introduction question for obsession and/or compulsions providing numerous examples of typical symptoms *and* at least one additional formal criterion, including the time and distress criteria according to DSM-IV. Three-hundred fifty-five subjects (8.7 %) agreed to the introducing questions; however only 2 % fulfilled our subclinical lifetime diagnosis of OCD. Stein et al. (1997) defined subclinical OCD as to fulfill all DSM-IV criteria for OCD except the time and distress criteria and described a 1-month prevalence of 0.6 %. We did not use this strict definition for subclinical OCD which would have excluded subjects suffering substantially from their "subclinical" symptoms but failed to meet all required formal criteria. However, applying this definition to our data only one subject would have been diagnosed as having subclinical OCD. This indicates that it is relatively unlikely for a subject to fulfill all formal criteria for OCD but not to be severely impaired. From the Zurich Study (Angst 1993; Degonda et al. 1993) a weighted lifetime prevalence of 5.5 % of subclinical OCD was found, defining subclinical OCD to the presence of obsessive-compulsive symptoms *and* a social impairment or distress without additional formal criteria which is in contrast to the definition of Stein.

In subclinical OCD the gender ratio was 1.2 indicating an equal sex-distribution. Subjects with subclinical OCD had a significantly higher age of onset than OCD and a much shorter duration than OCD pointing to lower

chronicity and possibly to a different nature of subclinical OCD (see below). In the Zurich Study, a missing diagnostic stability and a mild stability on the symptom level of subclinical OCD were described which might correspond to the short duration of subclinical OCD episodes.

Psychosocial function and quality of life

Subjects with OCD showed a high degree of social impairment during the worst episode. Subjects with subclinical OCD reported in 23 % some and in 6 % a marked impairment. In comparison with unaffected control subjects, subjects with subclinical OCD had significantly lower scores in general life satisfaction, in satisfaction in different life areas and showed more consultations of family doctors than controls. In general, the subclinical subjects scored between the OCD and the unaffected subjects. However, only subjects with OCD had significantly more consultations of psychiatrists and psychologists during the last 12 months than the control subjects and only OCD subjects showed a higher degree of unemployment and were more often never married or divorced.

From these results we conclude that subclinical OCD is not only associated with an OCD-specific impairment and distress in about 25 % of the subclinical subjects but is also associated with a significant reduction of life satisfaction and quality of life. However, subclinical subjects had not reached the stage of consulting mental health professionals as frequently as the OCD subjects and did not show psychosocial impairments in the sociodemographic characteristics. However, sociodemographics might be insensitive to more hidden and personally experienced symptoms like mild to moderate OCD symptoms which frequently result in dysfunction but not inevitably in non-function.

Are OCD & subclinical OCD manifestations of the same underlying disorder?

If the subclinical OCD represented a milder form of OCD, one would expect subclinical OCD to have the same age of onset, a comparable duration and course of symptoms and the same gender ratio. There were marked differences in these parameters between OCD and subclinical OCD subjects. From this follows that subclinical OCD, at least according to our definition, might represent a syndrome clearly different from OCD and not only a mild form of OCD. Due to the low number of OCD and subclinical OCD subjects, these results need further confirmation. For a follow-up of our sample it would be important to assess the number of subclinical subjects who will develop OCD. However, the higher mean age of onset of subclinical OCD does not suggest that these syndromes typically represent the initial stage of OCD but rather an entity distinct from OCD. Still, we assume the existence of a, at least, partially shared genetic background in both OCD and subclinical OCD. Important evidence comes from family studies which have described aggregation of OCD and subclinical syndromes (Rasmussen & Tsuang 1986; Lenane et al. 1990; Pauls et al. 1995) in families of OCD patients. The association of subclinical OCD with specific phobias and depressive disorders (Angst 1993) also points to the hypothesized shared genetic background with OCD.

Limitations

Sampling procedures aimed to define a representative community sample. Of the selected individuals 70.2 % completed the interview which can be considered as satisfactory. However institutionalized subjects were excluded from sampling. With regard to OCD this might not lead to a serious underestimation of OCD in the community because OCD subjects, at least in Germany, do not tend to be institutionalized because of their disorder.

From a methodological point, lay interviews always present a source of concern. Especially in OCD the differentiation between egosyntonic worries and true obsessions may be difficult. However, our interviewers were experienced in conducting health surveys and were specifically trained to perform the CIDI interview. Regular case supervision was provided. The OCD section of the CIDI was presented with lists of examples of obsessions and compulsions and formal criteria were assessed by structured interview which should be considered to be valid.

The general aim of the survey was not to assess specifically OCD which could have present an additional source of overestimation of OCD and subclinical OCD. However, there may be concerns of underestimation of compulsions, especially subclinical compulsions. Due to the introduction question for compulsions, cases were excluded from further assessment if the interviewer considered the symptom to be of no clinical relevance.

The high difference in prevalence of OCD in males and females might point to a reporting bias in which males could be more reluctant to report shameful OCD symptoms than females. Possibly, more male subjects suffering from OCD could have refused participation in the study. This factor should not lead to major differences between different epidemiological studies. However, in subclinical cases no major gender difference was observed arguing against a general gender-specific reporting bias.

Conclusion

Our results point to relevant reductions in quality of life and in psychosocial function in subjects with OCD and subclinical OCD. It remains to clarify the hypothesis whether subclinical OCD represents a syndrome distinct from OCD. This can be done by investigating epidemiological characteristics and patterns of familial aggregation of OCD and subclinical OCD in general population samples.

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References

1. American Psychiatric Association Committee on Nomenclature and Statistics (1980) Diagnostic and Statistical Manual of Mental Disorders, ed 3. Washington, DC, American Psychiatric Association
2. American Psychiatric Association (1994) Diagnostic and Statistical Manual of Mental Disorders, ed 4. Washington, DC, American Psychiatric Association
3. Angst J (1993) Comorbidity of anxiety, phobia, compulsion and depression. Int Clin Psychopharmacol 8 (suppl.1): 21–25
4. Bebbington PE, Hurry J, Tennant C et al. (1981) The epidemiology of mental disorders in Camberwell. Psychol Med 2: 561–580
5. Bebbington PE (1998) Epidemiology of obsessive-compulsive disorder. Br J Psychiatry 35 (suppl. 35): 2–6
6. Behrens K (1995) Schichtung und Gewichtung-Verbesserung der regionalen Repräsentanz. In: S.Gabler, JHP Hoffmeyer-Zlotnik, D Krebs (eds) Gewichtung in der Umfragepraxis. Westdeutscher Verlag, Wiesbaden
7. Degonda M, Wyss M, Angst J (1993) The Zurich study. XVIII. Obsessive-compulsive disorders and syndromes in the general population. Eur Arch Psychiatry Clin Neurosci 243: 16–22
8. Diener E, Emmons RA, Larsen RJ, Griffin S (1985) The satisfaction with life scale. J Person Assess 49: 71–75
9. Dlugosch GE, Krieger W (1995) Fragebogen zur Erfassung des Gesundheitsverhaltens (FEG), [Questionnaire to assess health behaviour]. Göttingen, Hogrefe
10. Hess D, Gilberg R, Jesske B, Meyer C (1998) Lebensgewohnheiten und Gesundheit in Lübeck und Umgebung. Methodenbericht, Bonn: infas Sozialforschung
11. Karno M, Golding JM, Sorenson SB, Burnam A (1988) The epidemiology of obsessive-compulsive disorder in five US communities. Arch Gen Psychiatry 45: 1094–1099
12. Wittchen HU, Lachner G, Wunderlich U, Pfister H (1998) Testretest reliablilty of the computerized DSM-IV version of the Munich-Composite International Diagnostic Interview (M-CIDI). Soc Psychiatry Psychiatr Epidemiol 33: 568–578
13. Lenane MC, Swedo SE, Leonard H, Pauls DL, Sceery W, Rapoport JL (1990) Psychiatric disorders in first degree relatives of children and adolescents with obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry 29: 407–412
14. Meyer C, Rumpf H-J, Hapke U, Dilling H, John U (2000) Prevalence of alcohol consumption, abuse and dependence in a country with high per capita consumption: Findings from the German TACOS study. (Soc Psychiatry Psychiatr Epidemiol in preparation)
15. Pauls DL, Alsobrook JP, Goodman W, Rasmussen S, Leckman JF (1995) A family study of obsessive-compulsive disorder. Am J Psychiatry 152: 76–84
16. Rasmussen SA, Eisen JL (1992) The epidemiology and clinical features of obsessive-compulsive disorder. Psychiatric Clinics of North America 4: 743–758
17. Rasmussen SA, Tsuang MT (1986) Clinical characteristics and family history in DSM-III obsessive compulsive disorder. Am J Psychiatry 143: 317–322
18. Robins LN, Helzer JE, Croughan J, Ratcliff KS (1981) National Institute of Mental Health Diagnostic Interview Schedule: its history, characteristics and validity. Arch Gen Psychiatry 39: 381–389
19. Robins LN, Helzer JE, Weissman MM, Orvaschel H, Gruenberg E, Burke JD Jr, Regier DA (1984) Lifetime prevalence of specific disorders in three sites. Arch Gen Psychiatry 41: 949–958
20. Robins LN, Wing J, Wittchen HU, Helzer JE, Babor TF, Burke J, Farmer A, Jablenski A, Pickens R, Regier DA (1988) The Composite International Diagnostic Interview: an epidemiologic instrument suitable for use in conjunction with different diagnostic systems and in different cultures. Arch Gen Psychiatry 45: 1069–1077
21. Roth WF, Luton FH (1942) The mental health program in Tennessee. Am J Psychiatry 99: 662–675
22. Rudin E (1953) Beitrag zur Frage der Zwangskrankheit insbesondere ihrer heriditären Beziehungen. Arch Psychiatr Nervenkr 191: 14–54
23. RV Bijl, Ravelli A, van Zessen G (1998) Prevalence of psychiatric disorder in the general population: results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS). Soc Psychiatry Psychiatr Epidemiol 33: 587–595
24. Stein MB, Forde DR, Anderson G, Walker JR (1997) Obsessive-compulsive disorder in the community: an epidemiologic survey with clinical reappraisal. Am J Psychiatry 154: 1120–1126
25. Wing JK, Cooper JE, Sartorious N (1974) The Measurement and Classification of Psychiatric Symptoms. Cambridge: Cambridge University Press
26. Wittchen H-U, Nelson CB, Lachner G (1998) Prevalence of mental disorders and psychosocial impairments in adolescents and young adults. Psychological Med 28: 109–126
27. Wittchen HU, Beloch E, Garczynski E (1995) Münchener Composite International Diagnostik Interview (M-CIDI), Version 2.2, München: Max-Planck-Institut für Psychiatrie