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**Annotation**

# Is Anorexia Nervosa an Obsessive–Compulsive Disorder?

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Although anorexia nervosa may vary widely in its severity and outcome, it is usually regarded as an illness in its own right, as patients do not display major changes in the form of the illness over time (Russell, 1970). It readily lends itself to being accorded clear-cut diagnostic criteria (Russell, 1977) and this is reflected in ICD–10 (World Health Organization, 1987). However, the nosological independence of anorexia nervosa has undergone vigorous assault since its classic description by William Gull (1874). For example, the psychological nature of anorexia nervosa was obscured for 30 years by Simmond's (1914) description of anterior pituitary lesions and cachexia, and Kay & Leigh's (1954) influential study of anorexia nervosa concluded with their doubts about its status as a 'psychiatric entity'.

More recently, Cantwell *et al* (1977) hypothesised a strong relationship between anorexia nervosa and affective disorders on the basis of a five-year follow-up study showing that up to 67% of a series of 26 anorectics had persistent dysphoric mood, and that a maternal history of depression was common. Since this study, the debating of this hypothesis has widened, but the nature of the relationship between the two conditions remains uncertain (Winokur *et al*, 1980; Eckert *et al*, 1982; Garfinkel & Garner, 1982; Herzog, 1984; Swift *et al*, 1986).

## An obsessive–compulsive hypothesis?

The suggestion that anorexia nervosa was basically a manifestation of obsessive–compulsive disorder (OCD) was first made by Palmer & Jones (1939). Du Bois (1949) proposed the renaming of anorexia nervosa as 'compulsion neurosis with cachexia' and considered that "the imperative, regularly recurring, and persistent thoughts of food conform with the typical pattern of obsessive thinking in the same way that the imperative urges to avoid food in a repetitive, illogical, and uncontrolled way conform with the typical pattern of compulsive acting".

In a review of 11 previously reported series of patients with anorexia nervosa, Rothenberg (1988) has again proposed evidence for this hypothesis. All 11 series of patients met DSM–III criteria for anorexia nervosa, although the severity of weight loss had to be estimated in some studies. Concentrating on symptoms other than those of anorexia nervosa, Rothenberg found depressive symptoms or disorders were reported most frequently in six of the studies, and that obsessive–compulsive symptoms or disorders were most frequently reported in three. Together, depressive and obsessive–compulsive symptoms and disorders were more frequently reported than any others. Rates of reporting varied widely in the original studies, but only small differences were found between rates for obsessive–compulsive and depressive symptoms. Four out of the seven studies that gave data on pre-morbid and intercurrent personalities reported highest rates for obsessive–compulsive personality.

Rothenberg (1986) had earlier proposed that the connection between depressive disorders and anorexia nervosa may not be primary but secondary to a more intrinsic relationship with obsessive–compulsive conditions: when obsessive–compulsive defences break down, depressive symptoms result. He considers that the persistent preoccupation with food early in anorexia nervosa, before starvation, together with rituals involving starvation, vomiting, food fads, laxatives or diuretics make the obsessive–compulsive hypothesis at least as plausible as the affective disorder theory.

Rothenberg's findings should not be accepted uncritically, as they are based on a wide comparison of studies which used different methodology, criteria, and ratings of symptoms. Widely differing conditions such as dysphoric mood and major affective disorders are assumed to be comparable, and for some of the studies percentage rates for symptoms had to be estimated. In assessing personality factors, pre-morbid and intercurrent personalities are inappropriately considered together.

While accepting that obsessional traits and symptoms are a prominent feature in anorexia nervosa, Garfinkel & Garner (1982) are impressed by the role of severe starvation in the genesis of these. In the Minnesota studies (Keys *et al*, 1950), 36 psychologically normal subjects were studied in conditions of semistarvation and were seen to develop a range of 'anorexic' and obsessional features. Garfinkel & Garner (1982) also caution that as a recognised poor prognostic feature, obsessionality is likely to be prominent in chronic cases of anorexia nervosa, and that patient selection may be a cause of discrepancy between studies.



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### Relationship with obsessive–compulsive disorders

How closely does the phenomenology of anorexia nervosa fit with that of OCD? ICD–10 defines OCD (F42) according to the central symptoms of recurrent obsessional thoughts or compulsive acts. These obsessional symptoms must have the following characteristics:

(a) they must be recognised as the patient's own thoughts or impulses
(b) there must be at least one thought or act that is still resisted unsuccessfully, even though others may be present which the patient no longer resists
(c) the thought or carrying out of the act must not in itself be pleasurable (simple relief of tension or anxiety is not regarded as pleasure in this sense)
(d) the thoughts, images, or impulses must be unpleasantly repetitive.

Rachman *et al* (1971) considered that patients with OCD become particularly sensitised to noxious stimuli in the form of the recurrent ruminations arising out of an altered mood state, and are unable to resist these. Rituals are attempts to escape the unpleasant rumination, but they only temporarily reduce anxiety and positively reinforce the occurrence and expression of both rumination and ritual.

Although difficult to define (Robson, 1988), low self-esteem may be regarded as central to the phenomenology of anorexia nervosa (Garfinkel & Garner, 1982), leading to distorted self-image in which anorectic patients perceive themselves to be fat and unattractive as an externalisation of their worthlessness. They ruminate about their perceived fatness (or fears of becoming fatter). These ruminations lead to food avoidance and ritualised behaviour. In parallel they have ruminations about food, induced and enhanced by the state of starvation, and these are associated with resistance (Gormally, 1984; Wardle, 1987). Eventually, resistance gives way to bulimic behaviour followed by rituals of vomiting, purging or exercise which give temporary relief of anxiety and positive reinforcement.

The extent to which the above descriptions of anorectic psychopathology fulfil the criteria for obsessive–compulsive phenomenology is open to debate, and will vary between individual patients. Garfinkel & Garner (1982) argue that obsessive–compulsive symptoms are ego alien, and that while the anorectic is preoccupied by weight, body shape and food, only the latter is ego alien. There must be grave doubts as to whether anorectic psychopathology ever fully meets the criteria of resistance and absolute absence of pleasure that were described in the classic European definition of OCD started by Westphal and carried on by Aubrey Lewis (1935) and others. Other authors, such as Stern & Cobb (1978), would place low emphasis on resistance and more on the recognition of the senselessness of rituals in their definition of OCD. However, even if it is felt that anorectic symptoms meet the criteria of resistance, repetition and unpleasantness, they remain very much secondary phenomena to low self-esteem distorted body image and starvation.

### Relationship with obsessional personality

Obsessional or anankastic personalities are described by Hamilton (1985) as rigid and inflexible, loving order and discipline because they cannot bear to live outside a known framework. They are indecisive, highly moral and inclined to parsimony punctuated by episodic excessive generosity. Similar descriptions might also be applied to typical patients with anorexia nervosa in their dealings with food. Slater (1943) explored the relationship between obsessional traits and obsessional symptoms in 400 neurotic patients and found a positive correlation of 0.76, the closest in the neurotic spectrum.

Kay & Leigh (1954) estimated that 50% of their 38 anorectics had obsessional traits in their pre-morbid personalities while King (1963) found these present in all 12 of his cases of primary anorexia nervosa. Dally (1969) defined three subgroups within anorexia nervosa, an obsessional group, a hysterical group, and a group of 'mixed aetiology', although his criteria were wider than personality traits alone. He found 81% of his 140 anorectics to have obsessional personalities. In contrast, Morgan & Russell (1975) found only 27% had obsessional pre-morbid personalities, while Norris (1979) described 31 of 54 cases (60%) as pre-morbidly obsessional according to their parents.

Assessment of pre-morbid personality, through necessity, has been retrospective and subjective. A number of studies have made objective investigations of intercurrent personality during anorexia nervosa. Smart *et al* (1976) studied 22 female anorectics, using the Eysenck Personality Inventory (EPI), Leyton Obsessionality Inventory (LOI), and Cattell's 16 Personality Factor Questionnaire (16PF). The EPI revealed significantly more neuroticism and introversion, and the 16PF, significantly more anxiety, less extraversion, and more independence. Anorectics had higher LOI scores for symptom, trait, resistance and interference than controls, but lower scores

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for symptom, resistance and interference than obsessional patients. A retrospective study by the same authors (Beaumont *et al*, 1976) divided 31 anorectic females into 'dieters' and 'vomiters and purgers', the former being found to be more obsessional than the latter.

Stonehill & Crisp (1977) studied 45 females with untreated anorexia nervosa using the EPI and the Middlesex Hospital Questionnaire (MHQ). Similar results were found, with the EPI revealing high introversion and neuroticism and the MHQ showing obsessionality. However, it is noteworthy that after weight restoration, anxiety and obsessionaltiy tended to decrease, suggesting the aetiological importance of starvation in intercurrent obsessionality traits. Ben-Tovim *et al* (1979) studied 21 currently anorectic females using the Present State Examination (PSE), EPI and Hostility and Direction of Hostility Questionnaire (HDHQ). They found no substantial differences between abstainers and vomiters, but 48% of the whole sample showed obsessional symptoms on the PSE. The EPI gave the same results as the previous studies.

Strober (1980) studied anorexia nervosa using the EPI, LOI and Hopkins Symptom Check-list. The results of Smart *et al* (1976) were replicated, with patients showing an obsessional character structure but no difference in personality between restricters and bingers. Patton (1988), studying an initial cohort of 1010 schoolgirls, found 17 cases of anorexia nervosa at an initial survey, and 26 cases at follow-up. Obsessional personality traits, as measured by the LOI and Cattell's High School Personality Questionnaire, were shown to be a risk factor for the initial 17 cases, but not for the cases persisting at follow-up.

In summary, a substantial proportion of anorectic patients have, subjectively, an obsessional premorbid personality, and during the illness obsessional traits are accentuated, possibly as a consequence of starvation.

## Genetic evidence

Murray & Reveley (1981) reviewed the genetics of neurosis including OCD. Non-psychotic psychological symptoms have been reported in 48% of parents, 39% of siblings, and 16% of probands with OCD. Five out of 12 monozygotic twins showed concordance for obsessive–compulsive symptoms compared with only one out of 12 dizygotic twins. Murray *et al* (1983) studied 404 normal twins using the LOI and found that heredity accounted for 44% of the variance for obsessional traits and 47% of that for obsessional symptoms. There was a high genotypic correlation between obsessional symptom scores and neuroticism scores. Hence the contribution of heredity to OCD may be through both influencing the development of obsessional personality traits and the transmission of a general neurotic tendency.

Similarly, genetics may play a role in the aetiology of anorexia nervosa. Holland *et al* (1984) studied 34 pairs of twins and one set of triplets with anorexia nervosa. In the 30 female twin pairs, 9 out of 16 of the monozygotic twins were concordant for anorexia nervosa and only one out of 14 of the dizygotic twins. Similar results were found in a further study (Holland *et al*, 1988) in which 56% of the 25 female monozygotic twin pairs and 5% of the 20 female dizygotic twin pairs were concordant for anorexia nervosa. These studies suggest that up to 80% of the variance in liability to anorexia nervosa may be accounted for by genetic factors.

If there is a true nosological relationship between OCD and anorexia nervosa, then some overlap in the findings of the genetic studies would be expected. There is little evidence for this with the notable exception of Holland *et al* (1984) finding one monozygotic co-twin of an anorectic proband who developed a severe obsessional handwashing disorder in the absence of an eating disorder.

Family-history studies of those with anorexia nervosa have mainly concentrated on affective disorders. However, Cantwell *et al* (1977) found that while 23 first-degree relatives of 26 patients with anorexia nervosa had affective disorders, three had histories of OCD and one had anorexia nervosa. Hudson *et al* (1983), looking at 89 probands with eating disorders (including bulimia), reviewed 420 first-degree relatives using DSM–III criteria and found that 15 had anxiety disorders (including four with OCD) nine had anorexia nervosa (22 had eating disorders in total), and 76 had affective disorders.

## Epidemiological evidence

If closely related, it might be expected that OCD and anorexia nervosa would share similar epidemiological profiles. Schwab (1979) estimated that 14% of the normal USA population had obsessional symptoms. The prevalence of OCD in the general population has been estimated as 0.05% (Woodruff & Pitts, 1964). Males and females are equally affected and 68% of patients develop symptoms before the age of 25 years, the mean being 21.6 years in females and 20 years in males (Pollitt, 1957). Obsessional illness accounts for about 2% of psychiatric admissions in Europe and the USA, patients are often 'strikingly intelligent', and about half remain single (Cooper, 1975).

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The incidence of anorexia nervosa was reported by Kendell (1973) as between 0.37 and 1.6 per 100 000 population per year. Its prevalence among girls, 16 years and over, attending independent schools was 1 in 100 (Crisp *et al*, 1976). The mean age of onset is 17.3 years (Crisp *et al*, 1980) and patients are described as having higher than average intelligence. The ratio of males to females was estimated as one to 15 (Crisp & Toms, 1972). Hence both conditions are rare in the general population and occur in those who are younger and more intelligent. However, there are as many differences as similarities and, to date, epidemiological studies add no weight to the arguments for a strong relationship between the two conditions.

## Conclusions

Summarising the evidence, a number of positive statements can be made. Pre-morbid obsessional personality traits are over-represented in those with anorexia nervosa, and the illness process, especially starvation, serves to exaggerate these. Mild obsessional symptoms are common in the population at large, and during starvation 'normal' individuals suffer obsessional symptoms relating to food. There is some overlap between the phenomenology of obsessional and anorectic symptoms.

Any further hypotheses about the relationship of anorexia nervosa and OCD remain highly speculative. It is only the particular combination of symptoms which makes a syndrome specific, and ultimately the classification of disease must be based on aetiology (Hamilton, 1985). Russell (1970) argued for anorexia nervosa as a disease entity. In spite of the likelihood of a multifactorial aetiology this diagnosis currently has relevance to understanding, management and prognosis. There can be little advantage in undermining this position in favour of unification with either OCD or affective disorders until more definite evidence about fundamental aetiology is discovered, or linkage of the syndromes is shown to have meaningful benefits for management.

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