

Typical and Atypical Restrictive Anorexia Nervosa: Weight History, Body Image, Psychiatric Symptoms, and Response to Outpatient Treatment

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ABSTRACT

Objective: Few studies have examined the characteristics of atypical restrictive anorexia nervosa (AN) with a well-powered design. The study aims to explore this issue, with particular attention paid to psychopathology and response to outpatient treatment.

Method: The sample consists of 365 participants with restrictive AN and 204 with atypical AN. Three types of atypical AN were included: subthreshold (all the criteria except weight); partial (AN without amenorrhea); and participants with AN without fear of gaining weight.

Results: Participants with AN without fear of weight gain reported the lowest lifetime BMI and subthreshold AN the highest. Participant with partial AN

reported the highest levels of psychiatric symptoms and novelty seeking. All types of atypical AN showed high rates of dropout, whereas participants with subthreshold AN showed the highest level of full remission after treatment.

Discussion: Before considering a revision of the diagnostic criteria of AN, further studies on adequately large samples are needed. © 2009 by Wiley Periodicals, Inc.

Keywords: anorexia nervosa; amenorrhea; temperament; eating disorders not otherwise specified; response to treatment

(*Int J Eat Disord* 2009; 42:464–470)

Introduction

Atypical anorexia nervosa (AN)—or eating disorder not otherwise specified (EDNOS) with AN features—includes all cases with clinically significant symptoms, which do not completely fulfill the diagnostic criteria of AN. DSM-IV¹ gives two examples: (1) cases with all symptoms of AN except amenorrhea (partial AN) and (2) cases with all symptoms of AN except that, despite significant weight loss, current weight is in the normal range (subthreshold AN). In addition, participants with AN who deny fear of weight gain or without overevaluation of weight and shape² can be included among the atypical presentations of AN.

The restrictive subtype is usually considered the ‘classic’ or ‘pure’ form of AN, with a characteristic phenotype distinct from that of the other types of eating disorders and more useful in terms of

etiopathogenetic research.^{3,4} Although the subtype distinction in AN has recently been the object of discussion,^{5,6} the diagnostic validity of restricting AN has been confirmed both by empirical classification studies using latent class or cluster analysis^{7,8} and by taxometric studies.⁹ Notwithstanding this, no study has been undertaken concerning the relationship between typical and atypical restrictive AN. Most studies, which explored the characteristics of atypical AN, have included participants who displayed binge eating and/or purging behaviors in their samples,^{2,10–12} whereas others did not clarify this point.^{13,14} In the presence of recurrent binge eating, the differential diagnosis between atypical AN and bulimia nervosa is difficult, especially for some forms of atypical AN such as subthreshold AN, because a lot of patients with bulimia nervosa display loss of weight and amenorrhea without reaching the weight threshold to fulfill the diagnostic criteria of AN. On the contrary, for partial AN, the most studied form of atypical AN, the inclusion of participants with features of bulimia nervosa is less problematic.

In the general population, atypical AN has been estimated to be at least as common as the full syndrome AN.^{11,15–17} Those studies that considered both cases of partial and subthreshold AN found an overall point prevalence ranging from 0.4 to

Accepted 31 March 2009

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Published online 7 May 2009 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20706
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0.7%¹⁵⁻¹⁷ and a lifetime prevalence of 2.6%.¹⁶ Those studies that specifically explored the prevalence figures of partial AN found a point prevalence that ranged from 0.25 to 0.6%^{16,17} and a lifetime prevalence ranging from 1.0 to 1.6%.^{10,11,16} No study to date has estimated the prevalence of participants with AN who did not report fear of weight gain.

Available studies concerning the clinical characteristics of participants with atypical AN usually rely on samples of small sizes. In a community sample, Garfinkel et al.¹⁰ found no differences between full and partial AN as regards age of onset, minimum and maximum weight, parental psychiatric history, sexual abuse, and presence of current/lifetime psychiatric comorbidity. Only lifetime social phobia significantly differentiated the two groups, being more prevalent in participants with partial AN.¹⁰ In another community sample of young women, Favaro et al.¹⁶ found no differences as regards age of onset and duration of illness between full AN, partial AN, and subthreshold AN. As expected, however, the last group differed from the other two because of a significantly higher minimum and maximum lifetime body mass index. Other studies, based on clinical samples, found no significant differences between atypical and full AN as regards eating and general psychopathology.^{13,14,18-20}

Finally, few studies are available about the outcome and/or response to treatment in participants with atypical AN. Three studies considered the response to inpatient treatment in patients with typical and atypical AN^{2,12,21} and found no differences between the groups.

The aim of the present study was to provide further information about the clinical characteristics of restricting atypical AN, with particular attention to the history of weight, body image disturbance, psychiatric symptoms, temperamental features, and response to outpatient treatment.

Method

The sample of the present study was recruited among participants consecutively referred to our outpatient Eating Disorder Unit from September 1993 and December 2007. Participants with binge eating and/or purging behavior at assessment were excluded. We considered the following as the eligibility criteria for the study: (a) all female participants with a current diagnosis of AN restricting subtype, according to DSM-IV criteria; (b) female participants who fulfilled all the diagnostic criteria for AN (restricting type) with the exception of the amenorrhea criterion (partial AN); (c) female participants who fulfilled

all the criteria for AN (restricting type) except that, despite a significant weight loss, the individual's weight is in the normal range; and (d) female participants who fulfilled all the diagnostic criteria for AN (restricting type) except that they completely deny fear of gaining weight and fear of losing control on their body weight.

All participants underwent a routine baseline assessment that included the administration of the ED section of the Structured Clinical Interview for DSM-IV,²² a semi-structured interview investigating clinical characteristics, and some self-report questionnaires. The Eating Disorders Inventory²³ was administered to measure aspects of eating and body image psychopathology. The Hopkins Symptoms Checklist²⁴ was used to study the presence and severity of psychiatric symptoms. The Tridimensional Personality Questionnaire²⁵ was used to measure temperamental variables. For the purposes of our study, we considered the following variables: EDI Drive for Thinness, Interceptive Awareness, and Body Dissatisfaction subscales to study body image disturbance; SCL Somatization, Obsession-Compulsion, and Depression subscales to study psychiatric symptoms; Novelty Seeking, Harm Avoidance, Reward Dependence, and Persistence to study temperament. Body image distortion was measured by assessing the difference between the way patients perceived themselves (using a seven-point scale from very thin to very fat) and their actual weight status.

After at least three sessions of assessment and motivation to therapy, each patient began outpatient nutritional rehabilitation and cognitive-behavioral therapy (CBT). Treatment consists of a first stage of intensive CBT (once a week), followed by a period of follow-up sessions. The number of sessions was very variable, ranging from 11 to 136 sessions (mean 32 ± 22), depending on symptoms severity and, in some cases, unplanned interruption of therapy. Antidepressant treatment was used in patients with high levels of depression and/or obsessive-compulsive symptoms. Clinical data regarding weight, diagnostic status, and general outcome were prospectively recorded from presentation to the end of treatment. In the present study, we considered the following variables: dropping out of treatment, body mass index (BMI) after 6 and 12 months of treatment, BMI at the end of treatment, total duration of contact, number of visits, diagnostic status at the end of treatment. End of treatment was defined as the last contact with the patient, independently from the reason of interruption. Dropping out of treatment was defined as any unplanned interruption of therapy not due to logistic reasons and independent from diagnostic status. Diagnostic status was defined as follows: (1) complete remission: absence of symptoms in the last month; (2) partial remission: presence of one of the following: amenorrhea (if not explained by other medical reasons), BMI lower than 18, presence of binge eating, purging, or severe body image disturbance; (3) no remission: pres-

TABLE 1. Weight and clinical characteristics in restricting anorexia nervosa (AN) and atypical AN

	Mean (SD)				<i>F</i> (3,565)	<i>p</i>
	Full Restricting AN (<i>n</i> = 365)	Partial AN (<i>n</i> = 77)	Subthreshold AN (<i>n</i> = 85)	AN Without Fear of Weight (<i>n</i> = 42)		
Age	22.1 (6.5)	22.5 (6.0)	21.2 (5.0)	23.0 (8.5)	0.95	ns
Age of onset	18.5 (5.1)	18.7 (4.5)	18.6 (4.4)	18.6 (5.4)	0.05	ns
Duration of illness (months)	30.7 (46.5)	31.6 (38.4)	18.7 (21.2)	38.0 (80.7)	2.17	ns
Body mass index (BMI)	15.6 (1.5)	16.4 (1.0)	18.8 (1.0)	14.9 (1.6)	130.73	.001
Maximum BMI	21.1 (2.8)	19.8 (2.8)	23.3 (3.2)	19.0 (1.8)	30.67	.001
Minimum BMI	15.0 (1.7)	15.5 (1.4)	17.8 (1.4)	14.0 (1.9)	77.61	.001
BMI at amenorrhea	17.9 (1.9)	—	19.3 (1.8)	16.7 (1.5)	26.78	.001
Amount of BMI loss	6.1 (2.7)	4.3 (2.5)	5.5 (3.1)	5.0 (2.1)	10.25	.001
Excessive exercise (h/week) ^a	3.8 (3.6)	3.4 (3.7)	5.1 (4.6)	3.3 (3.5)	$\chi^2 = 11.2$.011

^a Kruskal–Wallis analysis of variance.

ence of at least two of the previous criteria. Data about treatment were available for 328 patients (58%). In the four subgroups, we found no significant difference between participants whose data about treatment were available and those whose data were not, with the exception of the full AN group where the first group had a significantly lower age of onset (17.8 ± 4.0 vs. 19.2 ± 6.1 ; $t = 2.46$; $p < .02$). From the final analysis about treatment outcome, we also excluded 34 participants who decided to start treatment in other units and all patients who dropped out before the first 10 sessions. Participants who needed inpatient treatment but refused it were included in the final analysis if they maintained contact with our unit for at least 10 sessions.

All participants gave informed consent for the use of data in anonymous form. The study was conducted according to the principles of the “Declaration of Helsinki” (as amended in Tokyo, Venice and Hong Kong and Somerset West) and in accordance with the Guideline for Good Clinical Practice (CPMP/ICH/135/95—17th July 1996).

Statistics

SPSS software was used. Parametric and nonparametric analysis of variance and chi-square tests were performed to compare groups. Our sample was able to detect an effect size of 0.2 (that is considered small-medium) with a power of 0.98 for chi-square analyses and 0.99 for analysis of variance. Given the exploratory nature of the study, we reported in the tables all statistics and probabilities without correction. However, the use of Bonferroni correction to avoid α -type errors would mean using a significance level of $p < .005$.

Results

A total of 2,117 female participants with clinically relevant eating disorders were evaluated in the period considered. Of this sample, 365 participants (17%) fulfilled the criteria for restrictive AN and 204 (10%) for atypical AN. Restrictive AN was present in

27% of the participants presenting with a full syndrome eating disorder (AN + bulimia nervosa), and atypical AN diagnoses constituted 27% of all the participants with an EDNOS at assessment (including binge-eating disorder).

Among atypical restrictive AN, we observed 85 cases of subthreshold AN, 77 cases of partial AN, and 42 participants with AN who deny experiencing fear of gaining weight. The rate of atypical AN was 31% among participants visited in the period 1993–2000, and 41% among those referred between 2001 and 2007 ($\chi^2 = 5.67$; $df = 1$; $p < .02$). **Table 1** shows the characteristics of the four groups as regards age, age of onset, duration of illness, body mass index (BMI), and excessive exercise. Subthreshold AN differed from the other two groups because of a shorter duration of illness, higher BMI, higher minimum and maximum BMI (and BMI at amenorrhea), and a significantly higher rate of excessive exercise per week. The four groups significantly differed as regards the presence/absence of body image distortion: 81 restrictive AN (24%), 19 partial AN (26%), 28 subthreshold AN (36%), and 29 AN who denied fear of weight gain (69%) did not report body image distortion ($\chi^2 = 39.34$; $df = 3$; $p < .001$).

Table 2 shows the questionnaire scores reported by the groups. The post-hoc tests revealed that EDI Drive for Thinness scores were significantly different between the four groups, whereas no differences emerged for Body Dissatisfaction. The partial AN group reported significantly higher scores as regards SCL Somatization and Novelty Seeking.

Table 3 shows the rate of dropout and response to treatment in the four groups. All types of atypical AN showed significantly higher levels of dropout than full AN, particularly for dropout in the first sessions of treatment. Participants with subthreshold AN reported the highest rate of full and partial remission, whereas partial AN and AN who deny fear of weight gain reported the lowest. The analyses showed similar findings when performed in an

TABLE 2. Questionnaires' scores in restricting anorexia nervosa (AN) and atypical AN

	Mean (SD)				F(3,519)	p
	Full Restricting AN (n = 336)	Partial AN (n = 71)	Subthreshold AN (n = 81)	AN Without Fear of Weight (n = 35)		
EDI drive for thinness	9.4 (6.9)	6.1 (7.2)	11.8 (7.1)	1.7 (1.6)	22.71	.001
Interoceptive awareness	7.7 (6.0)	8.0 (6.8)	7.5 (6.4)	4.1 (5.0)	3.82	.01
Body dissatisfaction	10.0 (7.4)	9.2 (7.1)	11.0 (8.4)	10.1 (4.5)	0.80	ns
	Full Restricting AN (n = 330)	Partial AN (n = 70)	Subthreshold AN (n = 80)	AN Without Fear of Weight (n = 36)	F(3,512)	p
SCL somatization	1.04 (0.78)	1.32 (0.93)	1.02 (0.76)	0.64 (0.74)	5.89	.001
Obsessionality	1.32 (0.86)	1.46 (0.96)	1.31 (0.79)	0.82 (0.79)	4.69	.003
Depression	1.52 (0.90)	1.71 (0.90)	1.47 (0.90)	0.99 (0.87)	5.27	.001
Anxiety	1.28 (0.86)	1.53 (0.99)	1.25 (0.81)	0.94 (0.83)	3.84	.010
	Full Restricting AN (n = 260)	Partial AN (n = 53)	Subthreshold AN (n = 77)	AN Without Fear of Weight (n = 28)	F(3,414)	p
Novelty seeking	14.1 (4.9)	16.9 (6.0)	13.9 (5.1)	13.7 (5.4)	4.76	.003
Harm avoidance	21.1 (6.1)	22.8 (6.6)	20.4 (5.7)	18.8 (8.2)	2.88	.04
Reward dependence	13.7 (3.9)	14.4 (4.0)	13.5 (3.5)	13.3 (3.7)	1.83	ns
Persistence	6.0 (1.8)	5.6 (1.8)	6.3 (1.8)	6.0 (2.1)	1.83	ns

TABLE 3. Response to treatment in restricting anorexia nervosa (AN) and atypical AN

Dropout	Full Restricting AN (n = 173)	Partial AN (n = 49)	Subthreshold AN (n = 46)	AN Without Fear of Weight (n = 25)	χ^2	p
Total dropout	48 (28%)	24 (49%)	23 (50%)	15 (60%)	18.24	.001
Early dropout (before 10 sessions)	18 (10%)	14 (29%)	13 (28%)	8 (32%)	17.01	.001
	Mean (SD)				F(3,565)	p
Weight change	Full Restricting AN (n = 155)	Partial AN (n = 35)	Subthreshold AN (n = 33)	AN Without Fear of Weight (n = 17)		
BMI at presentation	15.7 (1.4)	16.4 (1.1)	19.0 (0.9)	14.8 (1.2)	66.16	.001
BMI after 6 months	17.1 (2.2)	17.3 (1.4)	19.9 (1.6)	17.0 (1.7)	16.83	.001
BMI after 12 months	18.4 (2.6)	17.8 (1.8)	20.8 (2.2)	18.5 (1.9)	6.21	.001
Final BMI	18.4 (2.5)	17.9 (1.5)	20.2 (2.0)	18.3 (1.9)	7.31	.001
Response to Treatment	Full Restricting AN (n = 155)	Partial AN (n = 35)	Subthreshold AN (n = 33)	AN Without Fear of Weight (n = 17)	χ^2	p
Complete remission	65 (42%)	14 (40%)	23 (70%)	8 (47%)	9.01	.03
No remission	44 (28%)	11 (31%)	3 (9%)	5 (29%)	5.96	.11
Response to Treatment (Intent-to-Treat Analysis)	Full Restricting AN (n = 173)	Partial AN (n = 49)	Subthreshold AN (n = 46)	AN Without Fear of Weight (n = 25)	χ^2	p
Complete remission	66 (38%)	14 (29%)	28 (61%)	8 (32%)	11.95	.008
No remission	59 (34%)	22 (45%)	9 (20%)	13 (52%)	10.14	.02

intent-to-treat fashion (Table 3). We analyzed the differences in duration of treatment and number of sessions in the four groups as a whole and only in those who reached a full remission at the end of treatment. No differences in the mean duration of treatment and number of sessions was observed among the four groups, with the exception of the subthreshold AN group who needed a shorter treatment and a lower number of sessions (21 ± 12 vs. 34 ± 24 sessions; z = 3.19; p < .005 in all participants who underwent treatment; 21 ± 14 vs. 36 ± 21 sessions; z = 3.65; p < .001 in participants in full remission at the end of treatment). During the pe-

riod of observation, seven participants with partial AN (14%) and six participants with subthreshold AN (13%) fulfilled all the criteria for full restrictive AN. In participants with partial AN, the development of amenorrhea represented a positive prognostic factor for response to treatment, because 71% of these participants reported a complete remission at the end of treatment (five out of seven), whereas only 21% of the remaining participants (9 out of 42) reached full remission ($\chi^2 = 7.35$; df = 1; p < .008). Among participants with subthreshold AN, participants who fulfilled all the criteria for AN during treatment have the same rate of

full remission at the end of treatment of the remaining participants (67 vs. 60%; $\chi^2 = 0.10$; $df = 1$; ns). The occurrence of binge eating and/or purging behavior during treatment was similar in the four groups (10% in full AN, 6% in partial AN, 4% in sub-threshold AN, and 12% in AN who denied fear of weight gain; $\chi^2 = 2.13$; $df = 3$; ns). In the four diagnostic groups, presence/absence of body image distortion did not show significant relationships with rates of drop-out, full or partial remission.

Discussion

The present study compared a large sample of patients with restricting AN to patients with atypical AN. Although the topic of the classification of atypical eating disorders has received considerable attention in the recent literature,^{26–28} few studies to date have investigated the characteristics and response to treatment of the different types of EDNOS using an adequate sample size. In our consecutive sample of participants referred to an Outpatient Eating Disorders Unit, atypical AN with restricting features represented about one-fifth (22%) of all the clinically significant eating disordered participants whose characteristics did not fulfill the diagnostic criteria for AN or bulimia nervosa. This is an important factor to be considered when interpreting data derived from studies that include all the participants with EDNOS in a single group.²⁹ Since EDNOS participants with features of bulimia nervosa represent the majority of EDNOS, it is probable that in these studies the clinical characteristics associated with bingeing and/or purging could prevail over the characteristics of restrictive atypical AN. In community samples, epidemiological studies have found prevalence figures of atypical AN that are similar or higher than those of full AN.^{11,16,17} This probably means that the rate of referral among atypical AN is lower than that among the full syndrome AN, and the characteristics of samples recruited in clinical settings might be affected by a referral bias. Together with a probable low rate of referral, atypical AN is characterized by a high rate of dropping out of treatment, another sign that a low awareness of the problem is typical of these disorders. Dalle Grave et al.²¹ observed a longer duration of illness in patients admitted for partial AN, providing support to the idea that the absence of amenorrhea can delay the request for treatment.

It is important to acknowledge that our Eating Disorder Unit is the only public facility in the area that receives patients of all types of severity, providing outpatient treatment, urgent general

psychiatric admissions, and brief medical admissions for severe complications. In the present study, we have included all patients referred to our unit who underwent the routine assessment, including those who refused treatment or those coming because obliged by parents. This recruitment approach is characterized by a high dropout rate, but also provides a 'naturalistic' point of view that can provide therapists with some useful indicators.

As regards the clinical characteristics of the diagnostic subgroups, participants with subthreshold AN reported the highest body mass index both at presentation and in their previous history, the highest levels of excessive exercise and drive for thinness, and the highest rate of remission after outpatient treatment. With the exception of these variables, our analyses revealed a remarkable similarity between restricting and subthreshold AN as regards all the other considered variables, such as body dissatisfaction, psychiatric symptoms, and temperamental characteristics. This group, in conclusion, seemed to display levels of psychopathology that are similar to those of restricting AN, but with a lower degree of severity, as demonstrated by the good response to treatment (61% of complete remission in the intent-to-treat analysis). Patients with AN without fear of weight gain, on the contrary, seemed to be a group with characteristics of extreme severity as regards body weight and denial of illness. At presentation, they completely denied fear of weight gain and body image distortion and reported low scores of psychiatric symptoms, eating psychopathology, and harm avoidance. However, the severity of their condition is confirmed by the high rate of dropout and poor response to treatment. This finding is in contradiction with a previous study³⁰ that observed that the absence of both weight phobia and body image distortion was a positive predictor of response to inpatient treatment. A comparison between this previous study and our data is difficult because of the differences in age at intake (less than 18 years in the Strober et al. study, from 12 to 56 years in our study), type of treatment (inpatient vs. outpatient), diagnostic criteria (DSM-III vs. DSM-IV), and duration of follow-up. However, data seem to suggest that patients with AN who deny fear of gaining weight could represent a group for which inpatient treatment would be particularly suitable.^{2,30}

The participants diagnosed as partial AN are characterized by a higher tendency toward somatization, obsessive-compulsive symptoms, anxiety, and novelty seeking, in comparison with the other groups. In addition, similarly to participants with AN who denied fear of weight gain, they reported

low weekly levels of excessive exercise. These findings are not in contradiction with the previous literature. Garfinkel et al.,¹⁰ for example, found higher rates of lifetime social phobia (32 vs. 8%), major depression (30 vs. 17%), and anxiety disorders (50 vs. 29%) in partial AN in comparison to full AN. In their study, however, only the first difference reached statistical significance, due to the small sample size. Watson and Andersen¹⁴ found results similar to ours as regards the EDI drive for thinness (see Table 7 of their paper). Finally, Gendall et al.³¹ and Pinheiro et al.³² found that underweight eating disordered participants without amenorrhea had lower levels of excessive exercise and higher levels of novelty seeking in comparison with full AN. Concerning treatment variables, partial AN reported a high dropout rate, as with all cases of atypical AN, and poor response to treatment, especially if those participants who developed amenorrhea during treatment were excluded. In conclusion, partial AN seemed to differ from the other two groups as regards several aspects of psychopathology and temperament that might negatively affect their outcome and response to treatment. These observations suggest that the absence of amenorrhea in an underweight patient should require a detailed investigation of present and lifetime psychiatric comorbidity to understand which the primary disorder is and to provide an adequate treatment.

The present study has methodological advantages, but also has important limitations that should be taken into consideration. First of all, study participants were recruited in a clinical setting, and it is possible that they are not representative of all individuals with eating disorders in the community. In addition, male participants were not included in the study. Second, a structured assessment of Axis I and II psychiatric comorbidity was not performed. Although the routine collection of data about psychiatric comorbidity using structured diagnostic interviews is not easily feasible in large samples, future studies should provide further data about the relationship between atypical AN and other Axis I psychiatric diagnoses. Finally, the power of our study allows the detection of effect sizes of the small–medium range, but not very small effects.

Although in the present study we have used a categorical approach, our aim was not the proposal of new diagnostic categories or a new classification schema in the field of eating disorders. It is our opinion that, before proposing any change in the classification or in the diagnostic criteria, a large quantity of data should be available.³³ Indeed, to date, studies about atypical eating disorders are few, and they do not have the power to detect the

presence of small and medium differences between samples. In addition, this is the first study, to our knowledge, that reports data about temperament and response to outpatient treatment in a sample of patients with atypical restricting AN.

In conclusion, with the exception of subthreshold AN, atypical patients with restricting AN are on average a group with characteristics of severity that often exceed that of the group with full restricting AN. In addition, they showed higher rates of dropout and a poorer response to treatment in comparison to full AN. For this reason, it is not correct to consider atypical AN as a ‘mild’ form of AN, and it is important to improve our knowledge about these groups of patients to reduce their dropout rates and improve response to treatment.

Clinical Implications

Most participants with atypical restricting AN show clinical characteristics of severity that are similar or even greater than those of full AN. Our data suggest that these participants have low awareness of their psychopathology, as shown by their low referral rates and high dropping out. With the exception of subthreshold AN, we need to consider their specific characteristics to improve their response to outpatient treatment.

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References

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. Washington, DC: American Psychiatric Association, 1994.
2. Dalle Grave R, Calugi S, Marchesini G. Underweight eating disorder without over-evaluation of shape and weight: Atypical anorexia nervosa? *Int J Eat Disord* 2008;41:705–712.
3. Kaye WH, Lilienfeld LR, Berrettini WH, Strober M, Devlin B, Klump KL, et al. A genome-wide search for susceptibility loci in anorexia nervosa: Methods and sample description. *Biol Psychiatry* 2000;47:794–803.
4. Strober M, Freeman R, Lampert C, Diamond J, Kaye W. Controlled family study of anorexia nervosa and bulimia nervosa: Evidence of shared liability and transmission of partial syndromes. *Am J Psychiatry* 2000;157:393–401.
5. Eddy KT, Dorner DJ, Franko DL, Tahilani K, Thompson-Brenner H, Herzog DB. Diagnostic crossover in anorexia nervosa and bulimia nervosa: Implications for DSM-V. *Am J Psychiatry* 2008;165:245–250.
6. Favaro A, Santonastaso P. The value of anorexia nervosa subtypes. *Am J Psychiatry* 2008;165:772–773.

7. Keel PK, Fichter M, Quadflieg N, Bulik CM, Baxter MG, Thornton L, et al. Application of a latent class analysis to empirically define eating disorder phenotypes. *Arch Gen Psychiatry* 2004;61:192–200.
8. Clinton D, Button E, Norring C, Palmer R. Cluster analysis of key diagnostic variables from two independent samples of eating disorder patients: Evidence for a consistent pattern. *Psychol Med* 2004;34:1035–1045.
9. Williamson DA, Gleaves DH, Stewart TM. Categorical versus dimensional models of eating disorders: An examination of the evidence. *Int J Eat Disord* 2005;37:1–10.
10. Garfinkel PE, Lin E, Goering P, Spegg C, Goldbloom DS, Kennedy S, et al. Should amenorrhoea be necessary for the diagnosis of anorexia nervosa? Evidence from a Canadian community sample. *Br J Psychiatry* 1996;168:500–506.
11. Wade TD, Bergin JL, Tiggemann M, Bulik CM, Fairburn CG. Prevalence and long-term course of lifetime eating disorders in an adult Australian twin cohort. *Aust N Z J Psychiatry* 2006;40:121–128.
12. Roberto CA, Steinglass J, Mayer LE, Attia E, Walsh BT. The clinical significance of amenorrhea as a diagnostic criterion for anorexia nervosa. *Int J Eat Disord* 2008;41:559–563.
13. Ricca V, Mannucci E, Mezzani B, Di Bernardo M, Zucchi T, Paionni A, et al. Psychopathological and clinical features of outpatients with an eating disorder not otherwise specified. *Eat Weight Disord* 2001;6:157–165.
14. Watson TL, Andersen AE. A critical examination of the amenorrhea and weight criteria for diagnosing anorexia nervosa. *Acta Psychiatr Scand* 2003;108:175–182.
15. Cotrufo P, Barretta V, Monteleone P, Maj M. Full-syndrome, partial-syndrome and subclinical eating disorders: An epidemiological study of female students in Southern Italy. *Acta Psychiatr Scand* 1998;98:112–115.
16. Favaro A, Ferrara S, Santonastaso P. The spectrum of eating disorders in young women: A prevalence study in a general population sample. *Psychosom Med* 2003;65:701–708.
17. Machado PP, Machado BC, Goncalves S, Hoek HW. The prevalence of eating disorders not otherwise specified. *Int J Eat Disord* 2007;40:212–217.
18. Abraham SF, Pettigrew B, Boyd C, Russell J, Taylor A. Usefulness of amenorrhoea in the diagnoses of eating disorder patients. *J Psychosom Obstet Gynaecol* 2005;26:211–215.
19. Crow SJ, Agras WS, Halmi K, Mitchell JE, Kraemer HC. Full syndromal versus subthreshold anorexia nervosa, bulimia nervosa, and binge eating disorder: A multicenter study. *Int J Eat Disord* 2002;32:309–318.
20. Cachelin FM, Maher BA. Is amenorrhea a critical criterion for anorexia nervosa? *J Psychosom Res* 1998;44:435–440.
21. Dalle Grave R, Calugi S, Marchesini G. Is amenorrhea a clinically useful criterion for the diagnosis of anorexia nervosa? *Behav Res Ther* 2008;46:1290–1294.
22. First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured Clinical Interview for DSM-IV Axis I Disorders*. New York: Biometrics Research Department, 1995.
23. Garner DM, Olmstead MP, Polivy J. Development and validation of a multidimensional Eating Disorder Inventory for anorexia nervosa and bulimia. *Int J Eat Disord* 1983;2:15–35.
24. Derogatis LR, Lipman R, Rickels K, Uhlenhuth E, Covi L. The Hopkins Symptoms Check List (HSCL): A self-report symptoms inventory. *Behav Sci* 1974;19:1–15.
25. Cloninger CR. A systematic method for clinical description and classification of personality variants. *Arch Gen Psychiatry* 1987;44:573–588.
26. Wilfley DE, Bishop ME, Wilson GT, Agras WS. Classification of eating disorders: Toward DSM-V. *Int J Eat Disord* 2007;40 Suppl:S123–S129.
27. Fairburn CG, Cooper Z. Thinking afresh about the classification of eating disorders. *Int J Eat Disord* 2007;40 Suppl:S107–S110.
28. Faravelli C, Ravaldi C, Truglia E, Zucchi T, Cosci T, Ricca V. Clinical epidemiology of eating disorders: Results from the Sesto Fiorentino study. *Psychother Psychosom* 2006;75:376–383.
29. Fairburn CG, Cooper Z, Bohn K, O'Connor ME, Doll HA, Palmer RL. The severity and status of eating disorder NOS: Implications for DSM-V. *Behav Res Ther* 2007;45:1705–1715.
30. Strober M, Freeman R, Morrell W. Atypical anorexia nervosa: Separation from typical cases in course and outcome in a long-term prospective study. *Int J Eat Disord* 1999;25:135–142.
31. Gendall KA, Joyce PR, Carter FA, McIntosh VV, Jordan J, Bulik CM. The psychobiology and diagnostic significance of amenorrhea in patients with anorexia nervosa. *Fertil Steril* 2006;85:1531–1535.
32. Pinheiro AP, Thornton LM, Plotnicov KH, Tozzi F, Klump K, Berrettini WH, et al. Patterns of menstrual disturbance in eating disorders. *Int J Eat Disord* 2007;40:424–434.
33. Wonderlich SA, Crosby RD, Mitchell JE, Engel SG. Testing the validity of eating disorder diagnoses. *Int J Eat Disord* 2007;40 Suppl:S40–S45.