

Appendix Table 1. Operationalization in the CIDI of criteria for DSM-IV eating disorders and related entities

Criteria*	Operationalization from CIDI†
<i>Anorexia Nervosa</i>	
A. A refusal to maintain body weight at or above a minimally normal weight for age and height (e.g. weight loss leading to a maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).	Yes on EA1. Was there ever a time in your life when you had a great deal of concern about or strongly feared being too fat or overweight? AND Lowest body weight less than 85% of ideal body weight (by Metropolitan Life tables, mid-point of medium frame) as determined by the following two questions: EA2. What was the lowest body weight you ever purposefully had after the age of twelve? EA3. How tall were you at that time?
B. Intense fear of gaining weight or becoming fat, even though underweight.	Yes on EA6. At the time you weighed (WEIGHT REPORTED IN EA2) were you very afraid that you might gain weight?
C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.	Yes on at least one of the following 4 questions: EA10. Did you feel like you were heavier than you should have been or heavier than you wanted to be? EA10b. Did you think that some parts of your body were too fat? EA10c. Did you feel like your self-esteem or confidence depended on your ability to stay thin or to lose even more weight? EA10d. Did anyone tell you that your low weight was bad for your health?
D. In postmenarchal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)	For females, Yes on EA9. Around the time you weighed (WEIGHT REPORTED IN EA2 [above]) did you ever have <u>three months</u> or more in a row when you stopped having your menstrual periods?
<i>Bulimia Nervosa</i>	
A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following: (1) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances	Yes on EA16. The next question is about “eating binges” where a person eats a large amount of food during a short period like two hours. By “a large amount” I mean eating so much food that it would be like eating two or more entire meals in one sitting, or eating so much of one particular food – like candy or ice cream—that it would make most people feel sick. With that definition in mind, did you ever have a time in your life when you went on eating binges (READ SLOWLY) <u>at least twice a week for several months or longer?</u>
A (2) a sense of lack of control over eating	Yes on at least one of the following four questions indicative of loss of control

during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating)

B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Binge Eating Disorder

A. Same as criterion A for bulimia nervosa (see above)

B. Binge eating episodes are associated with three or more of the following:
(1) Eating much more rapidly than normal
(2) Eating until feeling uncomfortably full
(3) Eating large amounts of food when not physically hungry
(4) Eating alone because of being embarrassed by how much one is eating
(5) Feeling disgusted with oneself, depressed, or very guilty after overeating

EA17h. Did you often get upset both during and after binges that your eating was out of your control?

EA17a. Did you usually eat until you felt uncomfortably full?

EA17b. Did you usually continue to eat even when you didn't feel hungry?

EA17c. Did you usually eat alone because you were embarrassed by how much you ate?

Yes on at least one of the following:

EA23a. Did you ever do any of the following things regularly after bingeing in order to control your weight: Did you fast by not eating at all or only taking liquids for 8 hours or longer?

EA23b. Did you take water pills, diuretics, or weight-control medicines?

EA23c. Did you make yourself vomit?

EA23d. Did you take laxatives or enemas?

EA23e. Did you exercise excessively?

Yes on EA25, assessing compensatory regularity of compensatory behaviors. You (KEY PHRASES FROM "YES" RESPONSES EA23 SERIES^s [above]). Did you ever do (this/ either of these things/ any of these things) at least two times a week for three months or longer?

Yes on at least one of the following:

EA17e. Around the time you were binge eating, were you very afraid that you would gain weight?

EA17f. Did you feel like your self-esteem and confidence depended on your weight or body shape?

EA1. Was there ever a time in your life when you had a great deal of concern about or strongly feared being too fat or overweight?

In cases that met criteria for anorexia nervosa, as defined above, there was evidence that bulimia nervosa was present at times when anorexia nervosa was absent, as evidenced by:

1. Onset of compensatory behaviors, twice weekly or more associated with binge eating, at least one year prior to onset of anorexia nervosa
2. Most recent compensatory activities twice weekly or more associated with binge eating, at least one year after most recent episode of anorexia nervosa, or
3. total duration of regular compensatory behaviors associated with binge eating that was at least one year longer than the period encompassed by anorexia nervosa.

Same as that corresponding to criterion A for bulimia nervosa (see above)

Yes on at least three of the following five questions:

EA17. During the binges did you usually eat much more quickly than usual?

EA17a. Did you usually eat until you felt uncomfortably full?

EA17b. Did you usually continue to eat even when you didn't feel hungry?

EA17c. Did you usually eat alone because you were embarrassed by how much you ate?

EA17d. Did you feel guilty, very upset with yourself, or depressed after you binged?

C. Marked distress regarding binge eating is present

Yes on at least one of the following four questions indicative of distress:

EA17d. Did you feel guilty, very upset with yourself, or depressed after you binged?

EA17e. Around the time you were binge eating, were you very afraid that you would gain weight?

EA17g. Did you worry about the long term effects of binging on your health, on your weight, or on your body shape?

EA17h. Did you often get upset both during and after binges that your eating was out of your control?

D. Binge eating occurs, on average, at least 2 days a week for six months

Acknowledging that binge eating occurred at least two times a week for at least three months, as reflected by providing of age of onset in EA19a or EA19b.[§]

E. The binge eating is not associated with the regular use of inappropriate compensatory behavior (i.e. purging, excessive exercise, etc.) and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

In cases that met criteria for anorexia nervosa or bulimia nervosa, as defined above, there was evidence that binge eating was present at times when anorexia nervosa and bulimia nervosa were absent, as evidenced by:

1. Onset of binge eating twice weekly or more at least one year prior to onset of anorexia nervosa or bulimia nervosa;

2. Most recent binge eating twice weekly or more at least one year after most recent episode of anorexia nervosa or bulimia nervosa; or

3. Total duration of binge eating twice weekly or more that was at least one year longer than the period encompassed by anorexia nervosa or bulimia nervosa.

Subthreshold Binge Eating Disorder

A. Same as criterion A for bulimia nervosa (see above)

Same as that corresponding to criterion A for bulimia nervosa (see above)

B. Binge eating occurs at least two times a week for at least three months

Acknowledging that binge eating occurred at least two times a week for at least three months, as reflected by providing of age of onset in EA19a or EA19b.

C. The binge eating is not associated with the regular use of inappropriate compensatory behavior (i.e. purging, excessive exercise, etc.) and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

Same as that corresponding to criterion E for binge eating disorder

D. The binge eating does not occur during the course of binge eating disorder

No lifetime diagnosis of binge eating disorder, as defined above

Any Binge Eating

A. Same as criterion A for bulimia nervosa (see above)

Same as that corresponding to criterion A for bulimia nervosa (see above)

B. Binge eating occurs at least two times a week for at least three months

Acknowledging that binge eating occurred at least two times a week for at least three months, as reflected by providing of age of onset in EA19a or EA19b.

Abbreviations: *CIDI*, *Composite International Diagnostic Interview*.

* *DSM-IV* criteria for anorexia nervosa, bulimia nervosa, and binge eating disorder; research criteria that we propose in the paper for subthreshold binge eating disorder and any binge eating

† *CIDI*, version 3.0, in NCS-R Interview Schedule and Respondent Booklet, Section 24: Eating Disorders (<http://www.hcp.med.harvard.edu/ncs/replication.php>)

‡ The *CIDI* includes other questions in the 23 series, but only answers to the questions listed here qualify as fulfilling criterion B for bulimia nervosa.

§ Note that the *CIDI* assesses binge eating twice weekly or more for three months or longer, whereas *DSM-IV* criteria specify binge eating two days a week on average for six months or longer.

Appendix table 2. Lifetime prevalence estimates of DSM-IV eating disorders and related behavior by age and sex

	Anorexia Nervosa		Bulimia Nervosa		Binge-eating Disorder		Subthreshold Binge-eating		Any binge-eating behavior		(n)
	%	(se)	%	(se)	%	(se)	%	(se)	%	(se)	
A. Males											
18-29	0.0	...	0.1	0.1	1.4	0.7	2.7	(1.0)	4.1	(1.2)	(288)
30-44	0.6	(0.4)	0.1	0.1	2.5	0.8	2.1	(1.0)	4.6	(1.3)	(403)
45-59	0.0	...	1.3	0.9	2.7	1.2	1.6	(0.8)	4.4	(1.6)	(339)
60+	0.3	(0.3)	0.3	0.3	0.9	0.5	1.1	(0.9)	2.3	(1.0)	(190)
Total	0.3	(0.1)	0.5	0.3	2.0	0.5	1.9	(0.5)	4.0	(0.7)	(1220)
χ^2_3 (age)	2.5 ¹		5.2		3.8		1.4		1.9		
B. Females											
18-29	1.1	(0.6)	2.2	0.5	4.2	0.8	0.8	(0.4)	6.2	(0.9)	(417)
30-44	0.9	(0.5)	2.0	0.6	3.7	1.0	0.8	(0.3)	5.9	(1.2)	(564)
45-59	0.6	(0.3)	1.6	0.5	3.4	0.8	0.4	(0.2)	4.4	(0.9)	(462)
60+	0.8	(0.8)	0.0	--	2.4	1.1	0.5	(0.3)	2.9	(1.1)	(317)
Total	0.9	(0.3)	1.5	0.3	3.5	0.5	0.6	(0.1)	4.9	(0.6)	(1760)
χ^2_3 (age)	2.4		6.9 ²		1.1		1.3		3.3		
C. Total											
18-29	0.6	(0.3)	1.2	0.3	2.9	0.5	1.7	(0.5)	5.2	(0.7)	(705)
30-44	0.8	(0.3)	1.1	0.3	3.1	0.7	1.4	(0.5)	5.3	(0.9)	(967)
45-59	0.3	(0.2)	1.4	0.5	3.1	0.5	0.9	(0.4)	4.4	(0.8)	(801)
60+	0.6	(0.5)	0.1	0.1	1.7	0.7	0.8	(0.4)	2.7	(0.7)	(507)
Total	0.6	(0.2)	1.0	0.2	2.8	0.4	1.2	(0.2)	4.5	(0.4)	(2980)
χ^2_3 (age)	1.8		5.2		2.5		2.2		5.2		

*Significant age difference based on a .05 level, χ^2_3 test.

¹degrees of freedom = 1

²degrees of freedom = 2

Appendix table 3. Twelve-month prevalence estimates of DSM-IV eating disorders and related behavior by age and sex

	Bulimia Nervosa	Binge-eating Disorder	Subthreshold Binge-eating	Any binge-eating behavior	(n)
	% (se)	% (se)	% (se)	% (se)	
A. Males					
18-29	0.0 --	0.1 (0.1)	0.6 (0.4)	0.7 (0.4)	(288)
30-44	0.0 --	0.9 (0.4)	0.9 (0.4)	1.8 (0.6)	(403)
45-59	0.0 --	1.6 (1.1)	0.9 (0.7)	2.6 (1.3)	(339)
60+	0.3 (0.3)	0.4 (0.4)	0.8 (0.8)	1.5 (0.9)	(190)
Total	0.1 (0.1)	0.8 (0.3)	0.8 (0.3)	1.7 (0.4)	(1220)
χ^2_3 (age)	--	5.7	0.9	4.9	
B. Females					
18-29	0.6 (0.3)	2.4 (0.7)	0.6 (0.4)	3.6 (0.7)	(417)
30-44	0.7 (0.3)	1.3 (0.4)	0.4 (0.2)	2.5 (0.6)	(564)
45-59	0.7 (0.4)	1.5 (0.6)	0.1 (0.1)	2.3 (0.7)	(462)
60+	0.0 --	1.2 (0.6)	0.3 (0.2)	1.5 (0.6)	(317)
Total	0.5 (0.2)	1.6 (0.2)	0.4 (0.1)	2.5 (0.3)	(1760)
χ^2_3 (age)	1.1	3.1	1.8	4.0	
C. Total					
18-29	0.3 (0.2)	1.4 (0.4)	0.6 (0.3)	2.3 (0.4)	(705)
30-44	0.4 (0.2)	1.1 (0.3)	0.6 (0.2)	2.2 (0.4)	(967)
45-59	0.4 (0.2)	1.5 (0.3)	0.5 (0.4)	2.4 (0.5)	(801)
60+	0.1 (0.1)	0.8 (0.4)	0.5 (0.4)	1.5 (0.5)	(507)
Total	0.3 (0.1)	1.2 (0.2)	0.6 (0.2)	2.1 (0.2)	(2980)
χ^2_3 (age)	0.9	1.6	0.1	1.7	

*Significant age difference based on a .05 level, χ^2_3 test.

Appendix table 4. Estimated age-of-onset and persistence of DSM-IV eating disorders by lifetime treatment status

	Anorexia Nervosa		Bulimia Nervosa		Binge-eating Disorder	
	Mean	(se)	Mean	(se)	Mean	(se)
I. Means						
A. Treated						
Age-of-onset	17.8	(1.1)	24.8	(2.3)	25.1	(2.0)
Years with episode	1.7	(0.3)	8.0*	(1.9)	12.6*	(2.3)
12-month persistence	0.0	--	44.7	(9.7)	42.1	(7.9)
B. Untreated						
Age-of-onset	19.5	(0.8)	18.1	(1.4)	25.6	(1.6)
Years with episode	1.8	(0.3)	8.6*	(2.1)	4.9*	(0.7)
12-month persistence	0.0	--	19.8	(7.8)	45.8	(8.9)
C. Total						
Age-of-onset	18.9	(0.8)	19.7	(1.3)	25.4	(1.2)
Years with episode	1.7	(0.2)	8.3*	(1.6)	8.1*	(1.1)
12-month persistence	0.0	--	30.6	(7.2)	44.2	(6.0)
II. Medians						
	Median	(IQR)	Median	(IQR)	Median	(IQR)
A. Treated						
Age-of-onset	17.0	(15.0-21.0)	18.0*	(16.0-20.0)	21.0*	(16.0-30.0)
Years with episode	1.0	(1.0-2.0)	4.0*	(2.0-13.0)	5.0*	(2.0-20.0)
12-month persistence	0.0	--	0.0	(0.0-1.0)	0.0	(0.0-1.0)
B. Untreated						
Age-of-onset	21.0	(17.0-22.0)	17.0*	(13.0-20.0)	19.0*	(16.0-32.0)
Years with episode	1.0	(1.0-1.0)	6.0*	(2.0-17.0)	3.0*	(1.0-8.0)
12-month persistence	0.0	--	0.0	(0.0-0.0)	0.0	(0.0-1.0)
C. Total						
Age-of-onset	18.0	(16.0-22.0)	18.0	(14.0-22.0)	21.0	(17.0-32.0)
Years with episode	1.0	(1.0-1.0)	5.0*	(2.0-15.0)	3.0*	(1.0-10.0)
12-month persistence	0.0	--	0.0	(0.0-1.0)	0.0	(0.0-1.0)
	(n)	(23)	(52)	(115)		

*Significantly different from Anorexia Nervosa based on a .05 level, two-sided test.

Appendix table 5. Cross-sectional socio-demographic profile of respondents with lifetime DSM-IV eating disorders and related behavior¹

	Anorexia Nervosa		Bulimia Nervosa		Binge-eating Disorder		Subthreshold Binge-eating		Any binge-eating behavior	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Race-ethnicity										
Non-Hispanic White	1.0	--	1.0	--	1.0	--	1.0	--	1.0	--
Non-Hispanic Black			1.0	(0.4-2.5)	0.7	(0.3-1.2)	1.9	(0.5-7.1)	0.9	(0.4-1.7)
Hispanic	0.3 ²	(0.1-1.4)	2.0	(0.4-11.0)	0.9	(0.3-2.8)	1.0	(0.2-5.2)	1.0	(0.6-2.1)
Other	0.5	(0.1-3.9)	2.0	(0.8-4.5)	0.5	(0.1-2.5)	0.8	(0.2-3.2)	0.7	(0.3-1.8)
χ^2_3 (p-value)	2.7 (.259)		3.2 (.352)		2.8 (.425)		1.3 (.739)		0.8 (.839)	
Education										
Less than high school	0.5	(0.1-2.6)	1.3	(0.4-4.1)	2.1	(0.8-5.2)	1.9	(0.4-10.0)	1.8	(1.0-3.4)
High school graduate	0.8	(0.4-1.7)	0.4	(0.2-0.9)	0.7	(0.3-1.8)	1.7	(0.5-6.7)	0.9	(0.5-1.6)
Some post-HS education	1.1	(0.4-3.3)	1.2	(0.6-2.7)	1.5	(0.8-3.1)	2.2	(0.7-7.0)	1.5	(0.9-2.4)
College graduate	1.0	--	1.0	--	1.0	--	1.0	--	1.0	--
χ^2_3 (p-value)	1.9 (.601)		8.4* (.039)		15.5 (.002)		2.1 (.561)		17.4* (.001)	
Marital status										
Previously married	1.0	(0.2-4.1)	1.8	(0.8-3.9)	1.0	(0.5-1.8)	0.8	(0.3-1.7)	1.0	(0.7-1.6)
Never married	0.4	(0.1-2.0)	0.2	(0.1-0.5)	0.8	(0.6-1.3)	0.6	(0.3-1.2)	0.7*	(0.5-0.9)
Married-cohabitating	1.0	--	1.0	--	1.0	--	1.0	--	1.0	--
χ^2_2 (p-value)	1.8 (.411)		15.3* (.000)		0.8 (.669)		2.1 (.347)		7.2* (.027)	
Employment status										
Employed	1.0	--	1.0	--	1.0	--	1.0	--	1.0	--
Student	3.7	(0.4-37.0)	0.6	(0.1-5.3)	1.2	(0.3-5.5)	4.2	(0.7-24.6)	2.0	(0.9-4.3)
Homemaker	4.3	(1.4-12.7)	1.0	(0.4-2.2)	0.7	(0.3-1.9)	0.7	(0.1-3.2)	0.7	(0.3-1.3)
Retired			7.5	(0.4-142.1)	1.8	(0.2-14.8)	0.2*	(0.0-0.7)	0.8	(0.2-3.6)
Other	0.9 ³	(0.1-6.3)	2.5	(1.1-5.8)	1.9	(0.9-3.8)	2.1	(0.6-7.5)	2.1	(1.4-3.2)
χ^2_4 (p-value)	13.9 (.003)		6.8 (.145)		5.5 (.240)		9.7 (.046)		19.9 (.001)	

*Significant at the .05 level, two-sided test

¹Controlling for age and sex in every model

²Non-Hispanic Blacks and Hispanics were collapsed in this equation because of sparse data.

³Variables Retired and Other were collapsed in this equation because of sparse data.