

Prevalence of Eating Disorders among Blacks in the National Survey of American Life

Jacquelyn Y. Taylor, PhD,
APRN, BC, PNP, RN^{1*}
Cleopatra Howard Caldwell,
PhD²
Raymond E. Baser, MS³
Nakesha Faison, MS³
James S. Jackson, PhD³

ABSTRACT

Objective: To provide information on the characteristics of eating disorders based on nationally representative samples of African American and Caribbean Black adults and adolescents.

Method: Conducted between 2001 and 2003 the National Survey of American Life (NSAL) interviewed adults ($n = 5,191$) and adolescents ($n = 1,170$) in their homes. Professionally trained interviewers used the WMH Composite International Diagnostic Interview (WMH-CIDI-WHO Organization 2004-modified) to assess DSM-IV TR eating disorders.

Results: Anorexia was the rarest eating disorder among African American adults and adolescents, with age of onset for adults in mid adolescence. No 12-month case of anorexia was found among Carib-

bean Black adults. Binge eating was the most prevalent eating disorder among adults and adolescents. Persistence of disorders was lowest for anorexia and highest for binge eating disorder among adults.

Conclusion: Prevalence of eating disorders within the U.S. Black population varies by type of disorder, age cohort, gender, and ethnic group among adults, and by type of disorder among adolescents. Clinicians need preparation and training to recognize and treat eating disorders in ethnically-diverse patient populations. © 2007 by Wiley Periodicals, Inc.

Keywords: eating disorders; Blacks; prevalence; age of onset; gender differences

(*Int J Eat Disord* 2007; 40:510–514)

Introduction

Few studies have examined eating disorders among Blacks. Those that have found that binge eating disorder occurs with equal or greater frequency for African American and White women,¹ while anorexia nervosa (AN) is rarely found among African American women.² These studies, however, often are limited to specific populations (e.g., college students, women) or regions of the country.³ To address the limitations of previous research specifically among Blacks, the current study comprehen-

sively examined the prevalence, age of onset, persistence and gender differences in eating disorders in a nationally representative sample of African American and Caribbean Black adults and adolescents.

Method

Participants

A national probability sample of households was drawn based on adult population estimates and power calculations for detecting differences in the two adult samples, using the African American sample as the primary core sampling base for the study. Every household that included an adult (18 years and older) participant was screened for an eligible adolescent. Adolescents were selected using a random selection procedure at the household level. In-home personal interviews were conducted with 5,191 adults ($n = 3,570$ African American, $n = 1,621$ Caribbean Blacks) and 1,170 adolescents ($n = 810$ African American and $n = 360$ Caribbean Blacks). The age range of the respondents was 18–94 for adults and 13–17 for adolescents. Gender distributions among the African American (adults = 44% male, 56% female; adolescents = 50% male, 50% female) and Caribbean

Accepted 13 July 2007

Supported by [1P01 MH58565, 1T32 MH67555, U01-MH57716] from [National Institute of Mental Health], by [5R01 AG02020282] from [National Institute on Aging], and by [National Institutes of Health Office of Behavioral and Social Science Research, National Institute on Drug].

*Correspondence to: Jacquelyn Taylor, PhD, APRN, BC, PNP, RN, University of Michigan, School of Nursing, 400 N. Ingalls, Room 3174, Ann Arbor, MI 48109. E-mail: jytaylor@umich.edu

¹ School of Nursing, University of Michigan, Michigan

² School of Public Health, University of Michigan, Michigan

³ Institute for Social Research, University of Michigan, Michigan

Published online 18 September 2007 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20451

© 2007 Wiley Periodicals, Inc.

TABLE 1. Lifetime and 12-month prevalence estimates of DSM-IV eating disorders by gender

	Female			Male			Total		
	<i>n</i> cases ^a	%	(SE)	<i>n</i> cases ^a	%	(SE)	<i>n</i> cases ^a	%	(SE)
Adults									
Lifetime prevalence									
Anorexia nervosa	4	0.14	(0.08)	3	.20	(0.14)	7	0.17	(0.07)
Bulimia nervosa ^b	61	1.90	(0.30)	18	0.97	(0.32)	79	1.49	(0.20)
Binge eating w/hierarchy ^b	70	2.36	(0.37)	18	0.78	(0.25)	88	1.66	(0.24)
Any binge eating ^c	174	5.82	(0.41)	71	4.14	(0.68)	245	5.08	(0.33)
12-month prevalence									
Anorexia nervosa	0	0	(0.00)	1	0.11	(0.11)	1	0.05	(0.05)
Bulimia nervosa ^c	31	1.04	(0.27)	7	0.26	(0.14)	38	0.69	(0.16)
Binge eating w/hierarchy ^c	42	1.11	(0.23)	10	0.38	(0.14)	52	0.78	(0.15)
Any binge eating	84	2.62	(0.32)	31	1.78	(0.42)	115	2.24	(0.26)
(<i>n</i>) ^d	(3,157)			(1,840)			(4,997)		
Adolescents									
12-month prevalence									
Anorexia nervosa	0	0	(0.00)	2	0.15	(0.13)	2	0.07	(0.07)
Bulimia nervosa	2	0.43	(0.31)	3	0.37	(0.34)	5	0.40	(0.23)
Binge eating w/hierarchy	4	0.57	(0.40)	0	0	(0.00)	4	0.28	(0.20)
Any binge eating	8	1.47	(0.61)	10	1.64	(0.54)	18	1.56	(0.40)
(<i>n</i>) ^d	(607)			(563)			(1,170)		

Notes: SE, standard error; IQR, interquartile range.

^aThese (*n*) represent the raw, unweighted frequencies of disorder cases for a given column. Note that while these frequencies are unweighted, the corresponding prevalence estimates are weighted to be nationally representative of the given subgroup in the U.S. population.

^bIndicates marginally statistically significant ($p < .10$) differences between male and female prevalence estimates based upon the complex design corrected Rao-Scott chi-squared statistic.

^cIndicates statistically significant ($p < .05$) differences between male and female prevalence estimates based upon the complex design corrected Rao-Scott chi-squared statistic.

^dThese (*n*) represent the unweighted total number of respondents in the given column for whom diagnostic information was available.

Black samples (adults = 51% male, 49% female; adolescents = 45% male, 55% female) were relatively equal.

Instruments and Procedures

Data collection was from February 2001 to March 2003 and the response rate was 73% among adults and 81% among adolescents. Details of the methodology used for the National Survey of American Life (NSAL) have been previously described,⁴ including details of the sample design, weighting, and variance estimation.^{5,6} The WMH Composite International Diagnostic Interview (WMH-CIDI-WHO Organization 2004 modified),⁷ was used to measure eating disorders. This diagnostic interview schedule met the DSM-IV TR eating disorders criteria for AN and bulimia nervosa (BN).⁸ For the purposes of this report the terms binge eating disorder with hierarchy ("BED") and "any binge eating" also are used. BED is defined as binge eating with no purging or AN. Any binge eating is classified as a behavior rather than a syndrome. These definitions are consistent with the National Comorbidity Survey-Replication (NCS-R) guidelines.⁹ Thus, we examined two DSM-IV TR eating disorders (AN, BN), one proposed disorder (BED), and one entity that partially overlapped with one or more of the disorders (any binge eating).

Analytic procedures were used to properly adjust standard errors, confidence intervals, and significance tests for the complex sample design of the NSAL. All

analyses were weighted to be nationally representative of populations and subgroups of interest. Crosstabulations were used to calculate the prevalence estimates of the eating disorders by ethnicity and by gender. Cox proportional hazards regression was used to estimate the odds ratios of developing the disorders for the ethnic and gender groups.¹⁰ Ages of onset of the eating disorders were ascertained by respondents' retrospective reports. All analyses were conducted using survey procedures of the SAS Version 9.1.3 software package.¹¹ SAS uses the Taylor-series linearization technique for calculating the complex-design-based estimates of variance.

Results

Prevalence of Eating Disorders

As shown in **Table 1**, among the 5,191 adults, the lifetime prevalence estimates were greatest for any eating disorder, followed by BED, BN, and AN, respectively. The 12-month prevalence estimates were less than the corresponding lifetime estimates. No 12-month case of AN was found among Caribbean black adults, and there were no ethnic differences in lifetime or 12-month prevalence estimates for other eating disorders. Cox proportional

TABLE 2. Estimated age of onset of DSM-IV eating disorders (adults only)

		Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder with Hierarchy	Any Binge Eating
Age of onset					
Female	Mean (SE)	15.91 (2.09)	21.11 (1.69)	23.14 (1.23)	23.44 (1.04)
	Median (IQR)	17.0 (12.0–19.0)	18.0 (15.0–25.0)	20.0 (15.0–27.0)	20.0 (16.0–29.0)
Male	Mean (SE)	13.97 (0.04)	15.34 (0.04)	21.35 (1.23)	20.51 (1.38)
	Median (IQR)	14.0 (14.0–14.0)	16.0 (12.0–20.0)	19.0 (13.0–30.0)	18.0 (13.0–23.0)
Total	Mean (SE)	14.89 (1.03)	19.44 (1.35)	22.75 (1.07) ^a	22.37 (1.03)
	Median (IQR)	14.0 (14.0–17.0)	18.0 (14.0–21.0)	20.0 (15.0–27.0)	20.0 (15.0–26.0)
Years with episode					
Female	Mean (SE)	3.44 (1.84)	5.64 (0.72)	7.15 (2.32)	5.81 (1.04)
	Median (IQR)	1.0 (1.0–7.0)	3.0 (2.0–10.0)	2.0 (0.0–9.0)	2.0 (0.0–6.0)
	12-month persistence, % (SE)	0	54.53 (8.75)	47.03 (5.05)	44.92 (4.85)
Male	Mean (SE)	3.23 (1.65)	2.84 (0.04)	4.90 (1.37)	5.24 (0.33)
	Median (IQR)	5.0 (1.0–5.0)	3.0 (1.0–4.0)	2.0 (2.0–4.0)	3.0 (0.0–6.0)
	12-month persistence, % (SE)	55.80 (36.43)	27.05 (11.46)	48.64 (11.32)	42.95 (6.71)
Total	Mean (SE)	3.33 (1.12)	4.90 (0.57)	6.65 (1.77)	5.59 (0.76)
	Median (IQR)	4.0 (1.0–5.0)	3.0 (1.0–7.0)	2.0 (0.0–6.0)	2.0 (0.0–6.0)
	12-month persistence, % (SE)	29.35 (24.85)	46.55 (7.79)	47.37 (4.87)	44.20 (3.89)
(n) ^b		(7)	(75)	(84)	(230)

^a Mean is significantly different from that of anorexia nervosa in the same row based on a .05 level, two-sided *t* test.

^b These (n) represent the unweighted number of respondents diagnosed with the given disorder.

hazards regression models adjusting for ethnicity and gender revealed that males were significantly less likely to develop any binge eating than were females (OR = 0.35, 95%CI: 0.17–0.71).

Among the 1,170 adolescents, the 12-month prevalence estimates were greatest among any binge eating, BN, BED, and AN, respectively. No ethnic differences were found (Table 1).

Age of Onset and Persistence

Adults were most at risk of developing an eating disorder between 12 and 30 years of age. AN had both the lowest mean and median ages of onset compared with other eating disorders; but only the average age of onset for BED was significantly higher than age of onset for AN (Table 2).

The average number of years that an eating disorder lasted among adults was lowest for AN and highest for BED. There were no differences in length of persistence between AN and other eating disorders (Table 2). The 12-month prevalence among adults with a lifetime history was lowest for AN and highest for BED (Tables 1 and 2).

Prevalence of Eating Disorders by Gender

Among adults, women had higher lifetime prevalence of any binge eating and 12-month prevalence of BN, and BED than men. Marginally significant gender differences were found for adults with lifetime prevalence of BN and any binge eating with women experiencing higher prevalence than men. No significant gender differences were found among adolescents; however, it is notable that

more cases of boys than girls were reported with 12-month prevalence for AN, BN, and any binge eating.

Conclusion

This is the first study to examine the prevalence, age of onset, persistence and gender differences in eating disorders in a nationally representative sample of African American and Caribbean Black adults and adolescents. Findings from this study are consistent with previous research that shows that AN is uncommon among African Americans. Although the prevalence rates for AN were low (lifetime = 0.17% adults), our findings for African American adults were consistent with the low prevalence (0.6%) reported in the NCS-R.⁹ Further, the age of onset for AN was during mid adolescence (14.89) for African American adults in the NSAL compared with late adolescence (18.9) in the NCS-R,⁹ with no cases among African Americans occurring after age 19 in the NSAL. Combined with no reports of AN among Caribbean Black adults, these findings suggests that African Americans may be more at risk for AN than Caribbean Blacks, with a younger age of onset than the general US population. This younger age of onset is cause for concern since research consistently indicates that AN is most likely to begin in late adolescence.² The emergence of AN in mid-adolescence in a population that clinicians are not accustomed to treating will result in Black youth going undiagnosed and untreated

for longer periods of time. It is not clear from this study what may have protected Caribbean blacks from developing AN. Future research is needed to examine this issue from a cultural perspective.

BN was more common than AN in both ethnic groups, with higher lifetime prevalence rates for BN (1.49% adults) than that reported by Striegel-Moore et al.,² at 0.4% for Black women. The NSAL data, however, are consistent with findings from the NCS-R for adults overall (1.0%), and with regard to gender (women: NSAL = 1.90, NCS-R = 1.5%; men: NSAL = 0.97, NCS-R = 0.5%). The mean age of onset was 19.44 in the NSAL compared with 19.7 in the NCS-R.⁹ Findings from the current study indicate that the rates of BN among Blacks may not be as uncommon as once believed, with similar age of onset as most previous studies in this area. Because it is often unanticipated among Blacks, it can be easily under diagnosed. Reasons why Blacks are experiencing a higher prevalence in BN have been postulated to be associated with stress, including acculturated stress.¹² That is, the more Blacks feel pressure to assimilate with the dominant culture in America, the greater their risk for body image dissatisfaction and development of BN.¹² Perhaps the positive body self perceptions that once protected Blacks from eating disorders may be beginning to erode.¹³

Consistent with previous research,^{2,9} binge eating was the most prevalent eating disorder among Blacks in the NSAL. Males were significantly less likely to develop binge eating than women, indicating that males may have developed protective mechanisms against this disordered behavior but may have more issues around behaviors that emphasize slim athletic build.¹⁴ While most eating disorders had an age of onset during adolescence, binge eating had the highest age of onset (22.75), which is consistent with the NCS-R (25.4).⁹ This older age of onset may reflect less of a concern for smaller body size than concern with environmental stressors. It is plausible that exposure to economic deprivation and other stressors may have had an effect on the desire to consume more food as a coping mechanism.¹⁵ Once poor dietary habits are formed they are difficult to change. Adults tend to be less active and are involved in less physical activities than their adolescent counterparts.

Persistence of an eating disorder was lowest for AN and highest for binge eating. The persistence for AN in the NSAL was approximately twice that in the NCS-R while BN in the NCS-R was more than 1.5 times that seen in the NSAL.⁹ These data suggest that while AN may be uncommon among Blacks, those that do experience AN have a longer

battle with the disorder. Conversely, Blacks in the NSAL experience shorter durations with BN, binge eating, and BED than other ethnic and racial groups that have been studied.⁹ This suggests that short term duration for these disorders may be indicators for health care providers to prescreen Blacks for eating disorders and not to discount short-term disordered eating behavior as nondiagnostic.

As in previous research, adult women had higher prevalence of eating disorders than men in the NSAL. These findings are supported by results from the NCS-R.⁹ We found no gender difference in eating disorders among the adolescents; however, more boys than girls were affected by eating disorders. Although our numbers are small, they do point to a tendency for boys to exhibit eating disordered behaviors during adolescence. Other studies point to weight restrictions for sports participation (i.e., football, boxing, wrestling, etc.) as one reason for this trend.¹⁴ Our findings provide evidence that Black boys may not be immune to eating disorders. This is an area that future research should be rigorously pursued.

In sum, although the prevalence of most eating disorders among Blacks is uncommon, certain disorders are more prevalent among specific ethnic subgroups of Blacks (e.g., African Americans and AN), age of onset appears to be younger for AN, while persistence of the disorder may be longer for AN and shorter for BN and binge eating disorders. Taken as a whole, these findings suggest that cultural differences must be considered when diagnosing eating disorders in Black populations. Clinicians must be prepared to recognize and treat populations that are often considered to be least likely to develop an eating disorder. This will require training to work with diverse cultural groups to ensure that appropriate treatment is provided. Specialists in adult and pediatric/adolescent health-care should be educated to possible differences regarding prevalence, age of onset, persistence and gender differences in eating disorders to appropriately assess, and diagnose eating disorders among subgroups of Black people. The era, social climate, and subculture in which a person was raised may have significant effects on their risk for developing an eating disorder.

Culturally sensitive criteria need to be incorporated into the DSM-V for eating disorders that consider subcultural, gender, and age variations. Recommendations for DSM-V should include the following: earlier screening for AN among African Americans as young as early to mid adolescence; once diagnosed with AN, African Americans need

longer durations of follow-up and treatment. Although it is unclear why other eating disorders among Blacks such as BN or BED have a shorter duration, earlier and more frequent screening may be necessary to aid in capturing cases of these disorders.

References

1. Striegel-Moore RH, Wilfley DE, Pike KM, Dohm F, Fairburn CG. Recurrent binge eating in Black American women. *Arch Fam Med* 2000;9:83–87.
2. Striegel-Moore RH, Dohm FA, Kraemer HC, Taylor CB, Daniels S, Crawford PB, et al. Eating disorders in White and Black women. *Am J Psychiatry* 2003;160:1326–1331.
3. Striegel-Moore RH, Bulik CB. Risk factors for eating disorders. *Am Psychol* 2007;62:181–198.
4. Jackson JS, Torres MM, Caldwell CH, Neighbors HW, Nesse RM, Taylor RJ, et al. The national survey of American life: A study of racial, ethnic, and cultural influences on mental disorders and mental health. *Int J Methods Psychiatr Res* 2004;13:196–207.
5. Heeringa SG, Torres M, Sweetman J, Baser R. Sample design, weighting and variance estimation for the 2001–2003 National Survey of American Life (NSAL) Adult Sample.” Technical Report. Survey Research Center of the Institute for Social Research at the University of Michigan, 2006.
6. Heeringa SG, Wagner J, Torres M, Duan N, Adams T, Berglund P. Sample designs and sampling methods for the collaborative psychiatric epidemiology studies (CPES). *Int J Methods Psychiatr Res* 2004;13:221–240.
7. Kessler RC, Ustun TB. The World Mental Health (WMH) survey initiative version of the WHO-CIDI. *Int J Methods Psychiatr Res* 2004;13:95–121.
8. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (DSM-IV-TR). Washington, DC: American Psychiatric Association, 2000.
9. Hudson JI, Hiripi E, Pope HG Jr, Kessler RC. The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biol Psychiatry* 2007;61:348–358.
10. Cox DR. Regression models and life-tables. *J R Stat Soc Ser B (Methodological)* 1972;34:187–220.
11. SAS Institute. *SAS/STAT User's Guide*, Version 9.1. Cary, NC: SAS Institute, 2005.
12. Perez M, Voelz ZR, Petit JW, Joiner TE. The role of acculturative stress and body dissatisfaction in predicting bulimic symptomatology across ethnic groups. *Int J Eating Disord* 2002;31:442–454.
13. O'Neil SK. African American women and eating disturbances: A meta-analysis. *J Black Psychol* 2003;29:3–16.
14. Baum A. Eating disorders in the male athlete. *Sports Med* 2006;36:1–6.
15. Jackson JS, Knight KM. Race and self-regulatory behaviors: The role of the stress response and HPA axis in physical and mental health disparities. In: Carstensen LL, Schaie KW, editors. *Social Structure, Aging and Self-Regulation in the Elderly*. New York: Springer, 2006, pp. 189–207.