Prevalence and Correlates of Co-Occurring Obesity and Diabetes in Adults with Serious Mental Illness

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Background

Adults with serious mental illnesses (defined as a diagnosis of schizophrenia spectrum, bipolar, or depressive disorder accompanied by significant functional impairment) have greater health disparities, higher medical morbidity, and a lifespan that averages 10-30 years less than the general population. Their greater risk for conditions such as obesity and diabetes is thought to be due to such factors as use of psychotropic medications, high fat/low fiber diets, and sedentary lifestyles. We sought to examine the prevalence and correlates of co-occurring obesity and diabetes in this population.

Methods

Data were collected from 457 adults attending publicly funded mental health programs who participated in community health screenings in 4 U.S. states: IL, GA, MD and NJ. They were screened for 8 common medical conditions using industry-standard testing procedures. Body mass index (BMI) was calculated using height, weight, and waist circumference. Self-reported medical conditions and health risks, including diabetes and smoking, were assessed via interview using items from the National Health and Nutrition Examination Survey.

Study Sample Demographics (N=457*)

Gender: Female = 54%; Male = 46%;

Race: Caucasian/White = 49%; African American/Black = 39%; Multi-Racial = 4%; Asian American = 1%; American Indian/Alaska Native = 1%; Other Racial Background = 6%

Hispanic/Latino Ethnicity: 7%

Education: No Formal Education/Some HS = 20%; High School/GED = 31%; Voc/Technical = 7%; Some College = 26%; AA = 5%; BA = 6%; Some Graduate School = 2%; MA = 3%; Other Professional = <1%; DK = <1%

Most Recent Diagnosis: Schizophrenia Spectrum = 44%; Bipolar Disorder = 23%; Depression = 25%; Anxiety Disorder = 4%; Personality Disorder = <1%; Other = 3%; DK = <1%

Employed: 31%

Enrolled in School: 11%

Insurance Sources:** Medicaid = 36%; Medicare = 25%; Dual Eligible = 31%; Private Insurance = 10%; Veteran's AHB = 2%; Other = 4%; **No Insurance = 15%**

*Reflects valid percent/excludes missing data
**Values do not add to 100% as participants could report multiple sources

Results

Of 457 individuals screened, 60% (n=270) were obese (BMI≥30), including 18% (n=83) who met criteria for being morbidly obese (BMI≥40). One-quarter (25%, n=112) had diabetes, defined as A1c >6.5 and/or self-reported diagnosis. Co-occurrence of obesity and diabetes in the total sample was 19% (n=87); 78% of those with diabetes were obese, and 32% of obese subjects were diabetic. A significant relationship was found between increasing BMI levels and the likelihood of diabetes; while no (0%) underweight subjects had diabetes, it was found among 8.1% (n=6) of normal weight, 19.0% (n=19) of overweight, 29.4% (n=55) of obese, and 38.6% (n=32) of morbidly obese subjects (p<.001). Associations with mental health were tested using diagnoses of depression, mood disorders (depression, bipolar disorder), and schizophrenia. Mood disorders were more likely among people who were obese (p<.05), but not those with diabetes or co-occurring obesity and diabetes. Diagnoses of depression and schizophrenia were not related to the two conditions or their co-occurrence. Multi-variable logistic regression tested associations between co-occurring diabetes and obesity, and a model including demographic factors (gender, race, age), health behaviors (smoking), mental health (mood disorder, schizophrenia), and perceived health (self-rated physical health), controlling for study site. Compared to their counterparts, African Americans were almost 3 times as likely (OR =2.9) and smokers around half as likely (OR=5.8) to have co-occurring diabetes and obesity. Older individuals and those with poorer self-rated physical health were also significantly more likely to have co-occurring obesity and diabetes. Mental health diagnoses were not significant predictors in the model.

Prevalence of Obesity & Diabetes

Prevalence of Obesity & Diabetes	N (457)	%
CDC Weight Categories (BMI)		
Underweight	7	2%
Normal Weight	75	17%
Overweight	100	22%
Obese	187	41%
Morbidly Obese	83	18%
Diabetes	112	25%
Obese and Diabetic	87	19%

Multi-Variable Logistic Regression Predicting Co-Occurring Diabetes and Obesity*

Variable	Exp(B)	Significance
Female	1.60	.080
Black/African American	2.93	.001
Age	1.03	.007
Smoker	0.58	.049
Schizophrenia Diagnosis	1.79	.209
Mood Disorder Diagnosis	1.40	.449
Poor Self-Reported Health	1.52	.002

*Controlling for study site.

Conclusions

The high prevalence of obesity and diabetes in this population, alone and in combination, suggests the need for integrated health and mental health care, including screening in mental health settings for prevention and early detection. Given the association between mood disorder and obesity, greater efforts are needed to promote weight management among people taking antidepressants and mood stabilizers. Findings also suggest that smokers should be offered cessation options with sensitivity to the potential for weight gain. The strong association between being African American and co-occurring obesity and diabetes suggests that culturally competent efforts to address these conditions are needed.