

Introduction

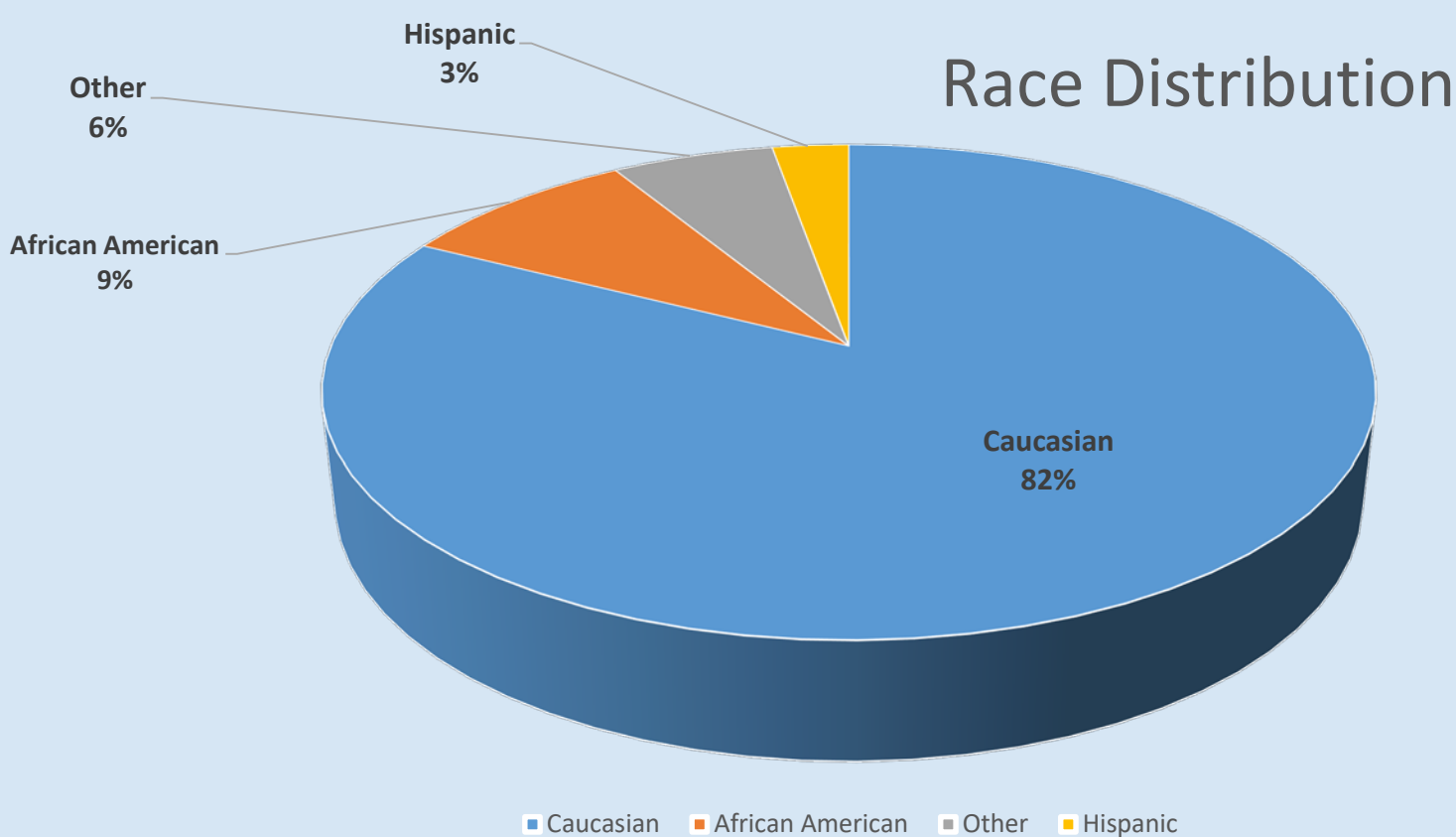
Obesity co-morbidities and their management have been described and are understood. However, clinically significant variations between racial groups in the distribution of weight-related medical problems and demographic data in superobese women have not been well established.

Objective

To evaluate variation by race in clinical characteristics, including weight-related co-morbidities and demographic data among superobese female patients.

Methods

Pre-operative data from 1,212 patients in the Surgical Review Corporation's BOLD database who were about to undergo Biliopancreatic Diversion/Duodenal Switch (BPD/DS) was analyzed retrospectively in four groups: African-American (n=106), Caucasian (n=1,000), Hispanic (n=34) and Other (Pacific Islander, Native American, or >1 race listed in BOLD; n=72). Age, weight and Body Mass Index (BMI) were compared by analysis of variance. Dichotomous variable distribution was assessed by the Chi-squared equation. An array of medical diseases and demographic data were evaluated to find areas of statistical significance.



N	African American	Caucasian	Hispanic	Other	P-value
1212					
Age (SD)	40.34 (10.26)	45.32 (11.25)	41.71 (10.81)	41.92 (12.42)	< 0.0001
BMI (SD)	56.34 (10.09)	50.96 (9.15)	52.79 (11.42)	51.14 (8.98)	< 0.0001
Weight in kg (SD)	152.9 (27.98)	138.5 (27.01)	136.2 (27.75)	138.8 (26.43)	< 0.0001

Results

Cardiopulmonary	African American	Caucasian	Hispanic	Other	P-value
Hypertension	53.77% (57/106)	60.1% (601/1000)	52.94% (18/34)	51.39% (37/72)	0.3039
Angina	2.83% (3/106)	3.1% (31/1000)	2.94% (1/34)	6.94% (5/72)	0.4944
CHF	6.6% (7/106)	3.1% (31/1000)	0% (0/34)	2.78% (2/72)	0.271
DVT/PE	4.72% (5/106)	3.5% (35/1000)	2.94% (1/34)	6.94% (5/72)	0.6064
Ischemic Heart Disease	3.77% (4/106)	2.3% (23/1000)	0% (0/34)	0% (0/72)	0.3387
Peripheral Vascular Disease	1.89% (2/106)	2.1% (21/1000)	2.94% (1/34)	2.78% (2/72)	0.983
Pulmonary Hypertension	6.6% (7/106)	13.8% (138/1000)	17.65% (6/34)	5.56% (4/72)	0.001
Hyperlipidemia	24.53% (26/106)	44.9% (449/1000)	50% (17/34)	33.33% (24/72)	0.0005
Obstructive Sleep Apnea	59.43% (63/106)	55.4% (554/1000)	44.12% (15/34)	36.11% (26/72)	0.0128
Obesity Hypoventilation	0.94% (1/106)	2.2% (22/1000)	0% (0/34)	0% (0/72)	0.53
Asthma	22.64% (24/106)	26% (260/1000)	17.65% (6/34)	26.39% (19/72)	0.7722
Pseudotumor cerebri	0% (0/106)	1.2% (12/1000)	8.82% (3/34)	4.17% (3/72)	0.0011

Musculoskeletal	African American	Caucasian	Hispanic	Other	P-value
Back Pain	54.72% (58/106)	60.6% (606/1000)	52.94% (18/34)	62.5% (45/72)	0.5398
Fibromyalgia	2.83% (3/106)	6.9% (69/1000)	5.88% (2/34)	8.33% (6/72)	0.5037
Lower Extremity Edema	36.79% (39/106)	48.4% (484/1000)	52.94% (18/34)	48.61% (35/72)	0.1016
Musculoskeletal Pain	53.77% (57/106)	50.6% (506/1000)	38.24% (13/34)	51.39% (37/72)	0.601

Psychological & Social	African American	Caucasian	Hispanic	Other	P-value
Mental Health Disease	6.6% (7/106)	14.6% (146/1000)	2.94% (1/34)	2.78% (2/72)	0.0022
Disabled Functional Status	7.55% (8/106)	7% (70/1000)	2.94% (1/34)	4.17% (3/72)	0.714
Depression	25.47% (27/106)	49.2% (492/1000)	38.24% (13/34)	18.06% (13/72)	< 0.0001
Psychological Impairment	12.26% (13/106)	18.8% (188/1000)	8.82% (3/34)	4.17% (3/72)	0.0047
Alcohol Use	33.96% (36/106)	33.3% (333/1000)	26.47% (10/72)	13.89% (10/72)	0.0132
Substance Abuse	1.89% (2/106)	0.8% (8/1000)	0% (0/34)	1.39% (1/72)	0.7709
Tobacco Use	3.77% (4/106)	5.7% (57/1000)	5.88% (2/34)	4.17% (3/72)	0.5645

Gastrointestinal & Hepatobiliary	African American	Caucasian	Hispanic	Other	P-value
Abdominal Hernia	11.32% (12/106)	11.1% (111/1000)	5.88% (2/34)	0% (0/72)	0.0342
Abdominal Skin Pannus	16.98% (18/106)	23.7% (237/1000)	38.24% (13/34)	4.17% (3/72)	0.0002
Cholelithiasis	14.15% (15/106)	27.4% (274/1000)	26.47% (9/34)	25% (18/72)	0.032
Gastroesophageal Reflux Disease	38.68% (41/106)	57.3% (573/1000)	52.94% (18/34)	41.67% (30/72)	0.0008
Liver Disease	2.83% (3/106)	5.8% (58/1000)	5.88% (2/34)	2.78% (2/72)	0.3157
Stress Urinary Incontinence	27.36% (29/106)	47.4% (474/1000)	44.12% (15/34)	48.61% (35/72)	0.0027

Endocrine	African American	Caucasian	Hispanic	Other	P-value
Glucose Metabolism	32.08% (34/106)	39.9% (399/1000)	50% (17/34)	29.17% (21/72)	0.0959
Gout	0.94% (1/106)	3.3% (33/1000)	0% (0/34)	0% (0/72)	0.2424
Irregular Menses	29.25% (31/106)	39.7% (397/1000)	26.47% (9/34)	6.94% (5/72)	< 0.0001
Polycystic Ovarian Disease	5.66% (6/106)	11.9% (119/1000)	2.94% (1/34)	1.39% (1/72)	0.0086

Conclusions

Distribution of obesity co-morbidities varied significantly, both statistically and clinically, between African-American, Caucasian, Hispanic and Other race patients.

- African Americans had the highest BMI, sleep apnea, alcohol use and abdominal hernia (n=3) and were lowest in dyslipidemia, pseudotumor cerebri, cholelithiasis and GERD (n=4).
- Caucasians were eldest and had the highest incidences of obstructive sleep apnea, irregular menses, polycystic ovarian disease, cholelithiasis, GERD, mental health diagnosis, depression and psychological impairment (n=8) and were lowest in none.
- Hispanic pulmonary hypertension, dyslipidemia, abdominal panniculitis and pseudotumor cerebri were highest (n=4) and none were lowest.
- Other pulmonary hypertension, obstructive sleep apnea, irregular menses, polycystic ovarian disease, abdominal hernia and panniculitis, mental health diagnosis, depression, psychological impairment and alcohol use were lowest. None were highest.
- Caucasian superobese women carry the greatest number of weight-related medical problems, and, thus, the highest surgical risk. The Other group was healthiest, with African Americans and Hispanics in a median risk category.
- This advance knowledge of clinical variation of superobese women by race may increase surgical index of suspicion in all specialties and possibly help improve outcomes.