Describing a United States Appalachian bariatric surgery patient population

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LIFESTYLE AFTER BARIATRIC SURGERY

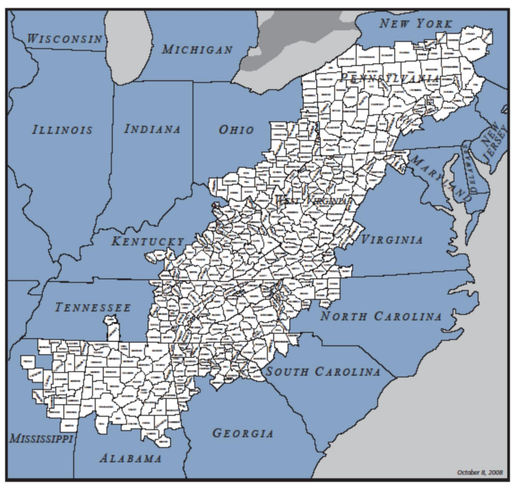
Abstract

Background: Limited data exist on those who receive bariatric and metabolic surgery in a rural population such as Appalachian America. Objective: Characterize an Appalachian bariatric and metabolic surgery population seeking care within a large, academic tertiary medical center. **Methods:** A retrospective electronic medical record (EMR) data extraction was performed on 588 patients who underwent bariatric and metabolic surgery at an academic medical center in West Virginia between 2013-2017. Researchers extracted demographics, health and family medical history, nutrition/dietary habits, psychological questionnaire scores, and anthropometric data from EMRs. Data were then entered into a HIPAA compliant survey database. **Results**: The sample was predominately female (79.8%), Caucasian (92.1%), mostly West Virginia residents (79.9%), with commercial insurance (n=163). Nearly 37% received a high school diploma or less, over 60% were married, and over 70% received Roux-en-Y gastric bypass surgery. Average preoperative weight of patients was 299.2±62.8 pounds (n=585) with a BMI of 48.3±8.1 kg/m2 (n=584); preoperative EBW was 144.5±53.4 pounds (n=585). Most common medical comorbidities in this population included prediabetes (n=207, 35.2%), Type 2 diabetes (n=188, 32%), sleep apnea (n=242, 41.2%), high blood pressure (n=326, 55.4%), high cholesterol (n=222, 37.8%), gastroesophageal reflux disease (n=170, 28.9%), clinical depression (n=267, 45.4%), and diagnosed clinical anxiety or panic disorder (n=169, 28.7%). Validated psychological questionnaires identified the following: average Beck Depression Inventory scores were 10.1+8.6, and Beck Anxiety Inventory scores were 6.1+6.6, falling within minimal range. Average scores on a measure of binge eating, Gormally Binge Eating scale (11.8+7.7), normal limits, along with scores on Audit-C (0.7+0.9), an alcohol screening measure. Dietary behaviors prevalent in this population included highest percentages of eating in front of the TV, rarely skipping meals, eating 2-3 times per day, a meal duration between 5-15 minutes (i.e., rapid eating), and eating in response to emotions 2-4 times per week. **Conclusions:** The current descriptive data underscore the importance of identifying factors that are salient and unique to an Appalachian population in order to improve and inform future lifestyle interventions.

Background

Health issues in the **Appalachian region** are more prominent than other areas of the United States. Issues such as diabetes, depression, and especially obesity. Specifically, morbid obesity plays a large role with influencing other comorbidities.

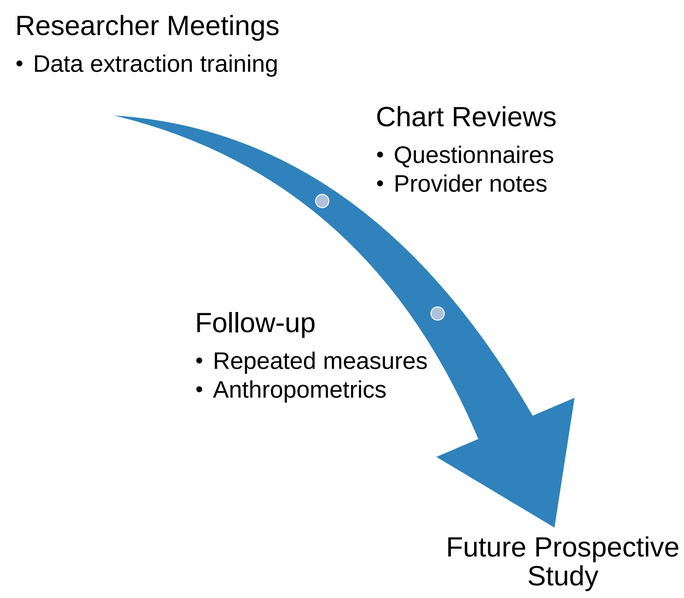
Little work has been done in the Appalachian bariatric population. **Due to the large realm of comorbidities that are associated with obesity, the Appalachian region is a prime area for research among bariatric surgery populations**



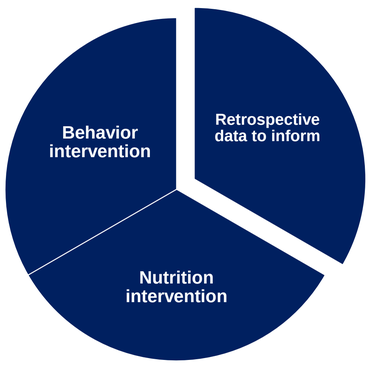
Objectives

- Research is **lacking in the Appalachian region amongst bariatric surgery patients**
- Preliminary EMR data will inform a future study on a lifestyle behavior change intervention among bariatric surgery patients in this Appalachian area
  - Foremost, **understanding the population demographic and characteristics** as well as the need for an intervention

Methods

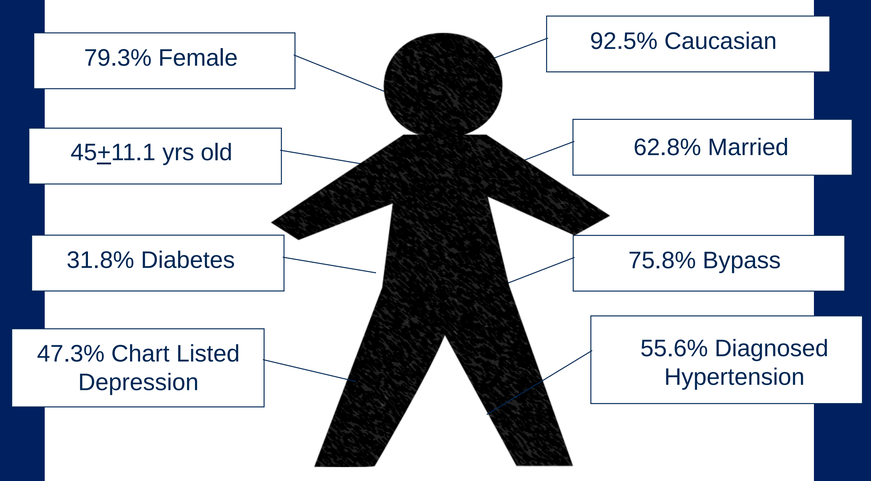


- Over 20 researchers and medical professionals at WVU
  - Multi-disciplinary research intervention to determine nutritional behaviors, lifestyle behaviors, psychological determinants, and health history to define a population of individuals with health problems known to be worse than most of the surrounding United States
- Researchers were trained on data extraction from Electronic Medical Records
- All pertinent health information and behaviors entered into a patients medical chart will be entered into a secure survey for data analysis
- Total 2013-2017 patient population
  - n=673
  - Over 600 data points per patient chart
  - Demographics, nutrition questionnaire, health history, psychological questionnaires (Beck's Anxiety Inventory, Beck's Depression Inventory, AUDIT-C, Gormally Binge Eating, Three Factor Eating, and Brief COPE), and lifestyle behaviors.
- Repeated anthropometric measures
  - Weight, BMI, EBW, %EWL, Blood pressure, labs

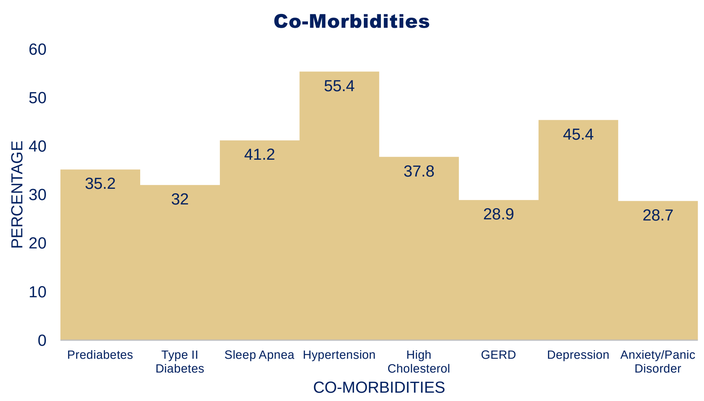


Results

Baseline n=547



Baseline Anthropometrics		n	mean (SD)	n	mean (SD)	p
	Weight (pounds)	407	300.3 (64.2)	127	306.8 (58.3)	0.1312
	BMI (kg/m²)	407	48.5 (8.1)	127	49.4 (7.9)	0.2443
	EBW (pounds)	407	146.7 (55.6)	127	151.7 (52.3)	0.2344
One-year Anthropometrics		**n**	**mean (SD)**	**n**	**mean (SD)**	**p**
	Weight (pounds)	188	199.2 (45.3)	36	227.0 (51.0)	0.0006*
	BMI (kg/m²)	188	32.8 (5.9)	36	37.4 (7.6)	0.0004*
	EBW (pounds)	188	47.1 (37.5)	36	74.2 (46.3)	0.0003*
	%EBWL	188	71.8 (16.8)	36	51.1 (16.6)	<.0001*



Tool	Average Score	Classification
Beck Depression Inventory	10.1+6.6	Minimal
Beck Anxiety Inventory	6.1+6.6	Minimal
Gormally Binge Eating	11.8+7.7	Normal
AUDIT-C	0.7+0.9	Normal

Collaborations

Researchers from West Virginia University and WVU Hospitals WVU Medicine are in collaboration for the completion of this project.

Areas of disciplines include:

- Davis College of Agriculture, Natural Resources, and Design
- WVU School of Medicine Exercise Physiology
- WVU Hospital Bariatric Surgery Clinic
- WVU Medicine Chestnut Ridge Center

WVUMedicine
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