



Interaction of Health Insurance Status with Weight-Related Medical Conditions in 58,317 Morbidly Obese Patients with Chronic Excess Caloric Intake

David Abraham, D.O., and Gus J Slotman, M.D.
 Departments of Family Medicine and Surgery, Inspira Health Network, Vineland, NJ.

Introduction

The premier nutritional derangement in the United States today is morbid obesity. Chronic excessive caloric intake causes weight gain to the point of exacerbating and/or causing serious underlying conditions, including diabetes, hypertension, hyperlipidemia and other metabolic conditions, obstructive sleep apnea (OSA), and many others. These medical problems of extreme obesity are known. However, variation in obesity co-morbidities related to the type of health insurance has not been investigated.

Objective

The purpose of this study was to identify differences in the distribution of obesity-related medical and metabolic illnesses according to the health insurance status of morbidly obese patients.

Materials and Methods

Pre-operative data on 58,317 patients from the Surgical Review Corporation's BOLD database who were about to undergo adjustable gastric banding was examined in four groups: Medicaid (n=1,089), Medicare (n=6,455), Private insurance (n=47,114), and Self-Pay (n=3,659). Analysis of variance tested continuous variables. Dichotomous parameter distribution was assessed by the Chi-squared equation.

Results

	Insurance Type				p value
	Medicaid	Medicare	Private	Self	
n	1089	6455	47114	3659	
Age	40+-11	58+-11	44+-11	43+-12	<0.0001
Weight (kg)	128+-25	127+-25	125+-23	125+-27	<0.01
BMI	47+-8	46+-8	45+-7	44+-8	<0.0001
Sex (F/M %)	89/11	73/27	79/21	79/21	<0.0001
CARDIOPULMONARY					
Hypertension	49.86	76.16	53.27	44.3	<0.0001
Angina	3.31	5.02	1.84	1.53	<0.0001
CHF	2.02	6.34	0.99	0.49	<0.0001
DVT/PE	2.75	5.28	2.06	1.34	<0.0001
Ischemic Heart Disease	3.49	12.21	3.19	2.02	<0.0001
Peripheral Vascular Disease	1.56	3.04	0.71	0.3	<0.0001
Pulmonary Hypertension	3.67	4.63	3.59	2.13	<0.0001
Obstructive Sleep Apnea	41.05	52.25	38.11	29.93	<0.0001
Obesity Hypoventilation Syndrome	2.02	3.45	1.37	0.9	<0.0001
Asthma	22.41	21.24	14.4	12.03	<0.0001
ABDOMINAL AND HEPATOBILIARY					
Abdominal Hernia	5.88	7.79	4.31	3.61	<0.0001
Cholelithiasis	21.4	26.06	16.38	13.53	<0.0001
GERD	47.2	49.6	42.05	38.51	<0.0001
Liver Disease	5.05	5.07	4.59	2.57	<0.0001
Stress Urinary Incontinence	24.98	28.58	20.25	19.62	<0.0001
METABOLIC AND HORMONAL					
Diabetes	28.19	49.98	26.36	20.5	<0.0001
Gout	8.26	6.86	2.78	1.69	<0.0001
Hyperlipidemia	32.78	57.15	37.83	33.81	<0.0001
Irregular Menses	19.65	27.65	20.03	15.85	<0.0001
Polycystic Ovarian Syndrome	4.41	1.53	5.07	4.95	<0.0001
Pseudotumor Cerebri	1.84	1.63	1.29	1.04	0.0229
MUSCULOSKELETAL					
Back Pain	54.36	58.05	44.33	39.66	<0.0001
Fibromyalgia	3.86	7.33	2.23	1.83	<0.0001
Lower Extremity Edema	25.07	37.72	21.72	18.34	<0.0001
Musculoskeletal Pain	37.92	55.86	37.87	33.34	<0.0001
PSYCHOLOGICAL					
Mental Health Diagnosis	16.35	14.73	8.5	8.06	<0.0001
Disability	3.03	9.26	1.19	0.87	<0.0001
Depression	40.22	41.41	30.06	31.24	<0.0001
Psychological Impairment	22.77	22.06	12.96	12.74	<0.0001
SOCIOECONOMIC					
Alcohol Use	18.55	21.6	33.91	33.18	<0.0001
Substance Abuse	0.73	0.45	0.36	0.55	0.0543
Tobacco Use	8.54	6.49	6.46	6.81	0.0445
Unemployed	34.62	73.63	8.46	8.66	<0.0001

Conclusions

- ✓ Obesity calorie/protein derangements affect Medicare patients most severely.
- ✓ Medicare BMI is similar to the other insurance groups, but, nevertheless, nearly all metabolic, cardiopulmonary, GI, hepatobiliary, musculoskeletal and psychological sequelae of obesity are manifested most frequently in Medicare patients.
- ✓ The increased Medicare age may contribute to the increased number of co-morbidities, given that they most likely have been exposed to obesity longer than their counterparts (i.e. Obesity Years).
- ✓ High Medicare unemployment may be a consequence of increased co-morbidities.
- ✓ Medicaid patients are the youngest and heaviest, but have co-morbidities similar to Private and Self-Pay patients, as well as high unemployment.
- ✓ Self-Pay has the lowest overall weight, BMI, and co-morbidities.
- ✓ These medical, psychological, and socio-economic variations among the major health insurance categories should be considered when managing the nutritional and medical conditions of morbidly obese patients.
- ✓ Practitioners should have an increased index of suspicion for serious weight-related complications based on insurance status, which could be life-saving.