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CLINICAL AND ECONOMIC BURDEN OF OBESITY AMONG HOSPITALIZED PATIENTS IN THE UNITED STATES

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INTRODUCTION

- Obesity (body mass index [BMI] ≥ 30 kg/m^2) affects over one third of United States (US) adult population and is associated with increased risks of cardiovascular diseases, cancer, and diabetes.
- We previously reported that the prevalence of obesity among hospitalized adult patients was approximately 40% and it increased steadily between 2017 and 2021.

OBJECTIVE

- We aimed to describe the clinical and economic burden of obesity among hospitalized patients in the US.

METHODS

- **Study Design and Data Source**
  Retrospective cross-sectional study using the Premier PINC AI™ Healthcare Database (PHD), a large geographically diverse hospital-based inpatient and outpatient discharge database, which accounts for one in four US inpatient discharges.
- **Study Population**

Inclusion criteria

- Age ≥ 18 years on admission date
- Had an inpatient visit at one of the PHD hospitals between January 1, 2019, and December 31, 2023
- Had valid height and weight records in PHD

Exclusion criteria

- Pregnancy-related visit

- **Variable Definitions:** BMI was calculated using height and weight records.

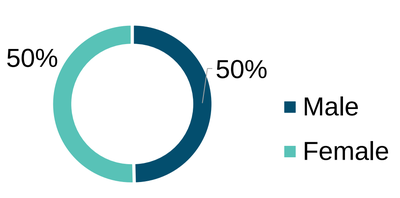
Underweight	BMI < 20 kg/m^2
Normal Weight	20 ≤ BMI < 25 kg/m^2
Overweight	25 ≤ BMI < 30 kg/m^2
Obesity	BMI ≥ 30 kg/m^2

- **Outcomes:** Hospital length of stay (LOS), intensive care unit (ICU) stay, and healthcare cost
- **Statistical Analysis**
  - Mean (standard deviation) was reported for continuous variables; counts and percentages were reported for categorical variables.
  - Two sample t-test for comparison of means and SD; two-way Chi-square test for comparison of proportions (statistical significance level set at p≤0.05).
  - Bonferroni corrections were applied for multiple comparisons.

RESULTS

Baseline Characteristics

1,476,205 Patients
(mean age 62 ± 19 years)



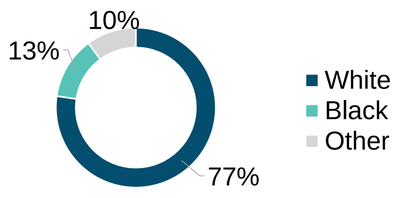
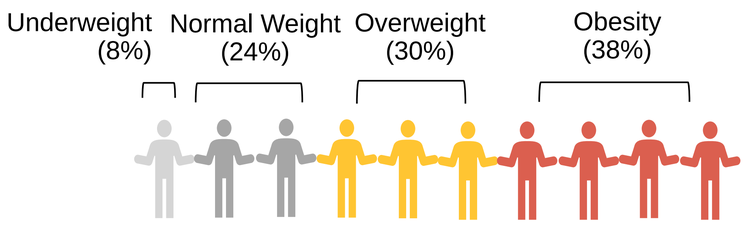


Table 1. Patient demographics

	Underweight (n=119,111)	Normal Weight (n=357,192)	Overweight (n=435,499)	Obesity (n=564,403)
Age in years, mean (std)	61.8 (24.7)	63.7 (21.5)	63.9 (18.4)	59.8 (16.8)
Sex, n (%)				
Female	69,561 (58.4)	176,587 (49.4)	191,621 (44.0)	305,870 (54.2)
Male	49,542 (41.6)	180,580 (50.6)	243,844 (56.0)	258,507 (45.8)
Unknown	8 (0.0)	25 (0.0)	34 (0.0)	26 (0.0)
Race, n (%)				
White	89,280 (75.0)	275,574 (77.2)	342,693 (78.7)	433,108 (76.7)
Black	16,004 (13.4)	41,999 (11.8)	48,340 (11.1)	79,456 (14.1)
Other/Unknown	13,827 (11.6)	39,619 (11.1)	44,466 (10.2)	51,839 (9.2)
Ethnicity, n (%)				
Hispanic or Latino	9,061 (7.6)	30,681 (8.6)	45,189 (10.4)	66,239 (11.7)
Non-Hispanic or Latino	100,022 (84.0)	296,187 (82.9)	354,451 (81.4)	452,669 (80.2)
Unknown	10,028 (8.4)	30,324 (8.5)	35,859 (8.2)	45,495 (8.1)

Figure 1. Distribution of weight status



Most common comorbidities among patients with obesity was:

Diabetes (40%)

Renal disease (30%)

Chronic pulmonary disease (26%)

Figure 2. Proportion of patients requiring an ICU stay during hospitalization

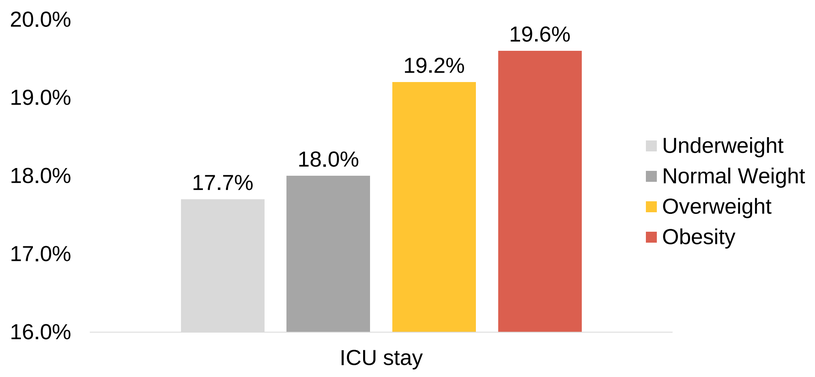
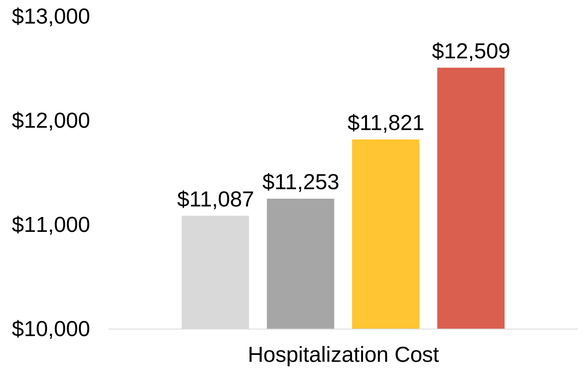


Figure 3. Median total cost of hospitalization in 2023 USD



RESULTS (cont'd)

- Prevalence of hospitalized patients with overweight was 30% and obesity was 38% (Figure 1).
- Patients with obesity were younger and more likely to be women compared to patients with normal weight (Table 1).
- Proportion of patients requiring ICU stay was higher among patients with obesity compared to patients with normal weight (19.6% vs. 18.0%, p<0.001, Figure 2), with wider difference among patients 75 years or older (19.1% vs. 16.2%, p<0.001).
- Although the median LOS was same (4 days), median cost during hospitalization was higher for patients with obesity compared to patients with normal weight ($12,509 vs. $11,253, p<0.001, Figure 3).
- Median hospitalization plus 30-day follow-up cost was also higher for patients with obesity compared to patients with normal weight ($13,856 vs. $12,693, p<0.001).

CONCLUSIONS

- This large, nationally representative study showed that obesity is a prevalent condition among hospitalized patients and is associated with a higher healthcare cost.
- Improved management of obesity can be beneficial for reducing healthcare cost.

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