



Difference in Hospital Outcomes and Demographics of Hospitalized Patients with Obesity Compared to Those Without Obesity

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BACKGROUND

According to United States national surveys, obesity prevalence is 42.4%. It is associated with a variety of cardiometabolic diseases, such as type 2 diabetes mellitus, hypertension, cardiovascular disease, and others. With this association along with other chronic conditions, it could be inferred that individuals with obesity would have more adverse outcomes/complications than normal weight individuals when hospitalized. The purpose of this study is to evaluate the differences in hospital outcomes such as length of stay, total charges, and mortality in hospitalized adults with/without obesity, regardless of their disease or procedure status.

METHOD

We used National Inpatient Sample data from 2013 to 2017. Demographic variables such as age, gender, race, median household income for patient's ZIP Code and hospital outcomes in terms of length of stay, total charges, and mortality was extracted. Descriptive statistics was conducted to examine demographic distribution and assess difference in hospitalized adults with/without obesity using Wilcoxon Rank Sum, Median difference and Chi-sq test.

RESULT

A total of 29,746,406 patient were hospitalized from 2013-2017. Patients with obesity accounted for 13.8% of the total cohort (Table 1). Comparing hospitalized adults with and without obesity, differences in age, gender, race, and median household income of patient's zip code was statistically significant. Female, Black and patients living in low-income zip codes hospitalized with an obesity diagnosis were higher in proportion than those without obesity. Over the study period, percentage of hospitalized adults with obesity increased significantly. Median length of stay and total charges were significantly higher in adults with obesity. Of note, mortality was lower in hospitalized adults with obesity compared to the adults without obesity.

| Variable | | Individuals with Obesity (N = 4126434) | Individuals without Obesity (N = 25619974) | P-value |
|--|--------------|--|--|---------|
| Age | Mean ± SD | 57.5 ± 20.4 | 56.7 ± 16.4 | |
| Gender (%) | Female | 62.0 | 57.9 | |
| | Male | 38.0 | 42.1 | |
| Race (%) | White | 64.5 | 64.9 | |
| | Black | 17.3 | 14.0 | |
| | Hispanic | 9.6 | 10.2 | |
| | Others | 3.9 | 6.1 | |
| Year (%) | 2013 | 18.0 | 20.5 | <.0001 |
| | 2014 | 19.2 | 20.1 | |
| | 2015 | 20.3 | 20.3 | |
| | 2016 | 21.0 | 20.2 | |
| | 2017 | 21.5 | 18.9 | |
| Median Household Income Percentile (%) | 0 - 25th | 31.9 | 29.6 | <.0001 |
| | 26th - 50th | 26.7 | 25.6 | |
| | 51st - 75th | 23.2 | 23.1 | |
| | 76th - 100th | 16.4 | 19.8 | |
| Length of Stay | Median (IQR) | 3 (2 - 6) | 3 (2 - 5) | |
| Total Charges | Median (IQR) | 33745 (18241 - 62697) | 26411 (14156 - 51441) | <.0001 |
| Died (%) | | 1.5 | 2.3 | <.0001 |

Table 1. Descriptive statistics of hospital outcomes in inpatient population with/without obesity, National Inpatients Sample data.

DISCUSSION

As obesity prevalence is increasing in the US, hospitalized adults with obesity are increasing nationally as well. Individuals with obesity had longer length of stay and high total hospital charges, but mortality was lower compared to adults without obesity. The reason for lower inpatient mortality in patients with obesity remain unclear but could be due to unassessed factors inherent in those patients. Studies, looking at specific associated diagnosis or combinations of diagnosis, are needed to completely understand the association of obesity and lower mortality.