

Association Between Body Mass Index and Medical Cost Among U.S. Adults in 2022

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Background

- In the United States, approximately 41.9% of adults had obesity in 2017–2020.
- Obesity can adversely affect an individual's quality of life and increase medical expenditures and costs of living.
- Previous studies relied on either self-reported weight and height in survey data or obesity diagnosis information in medical claims data.

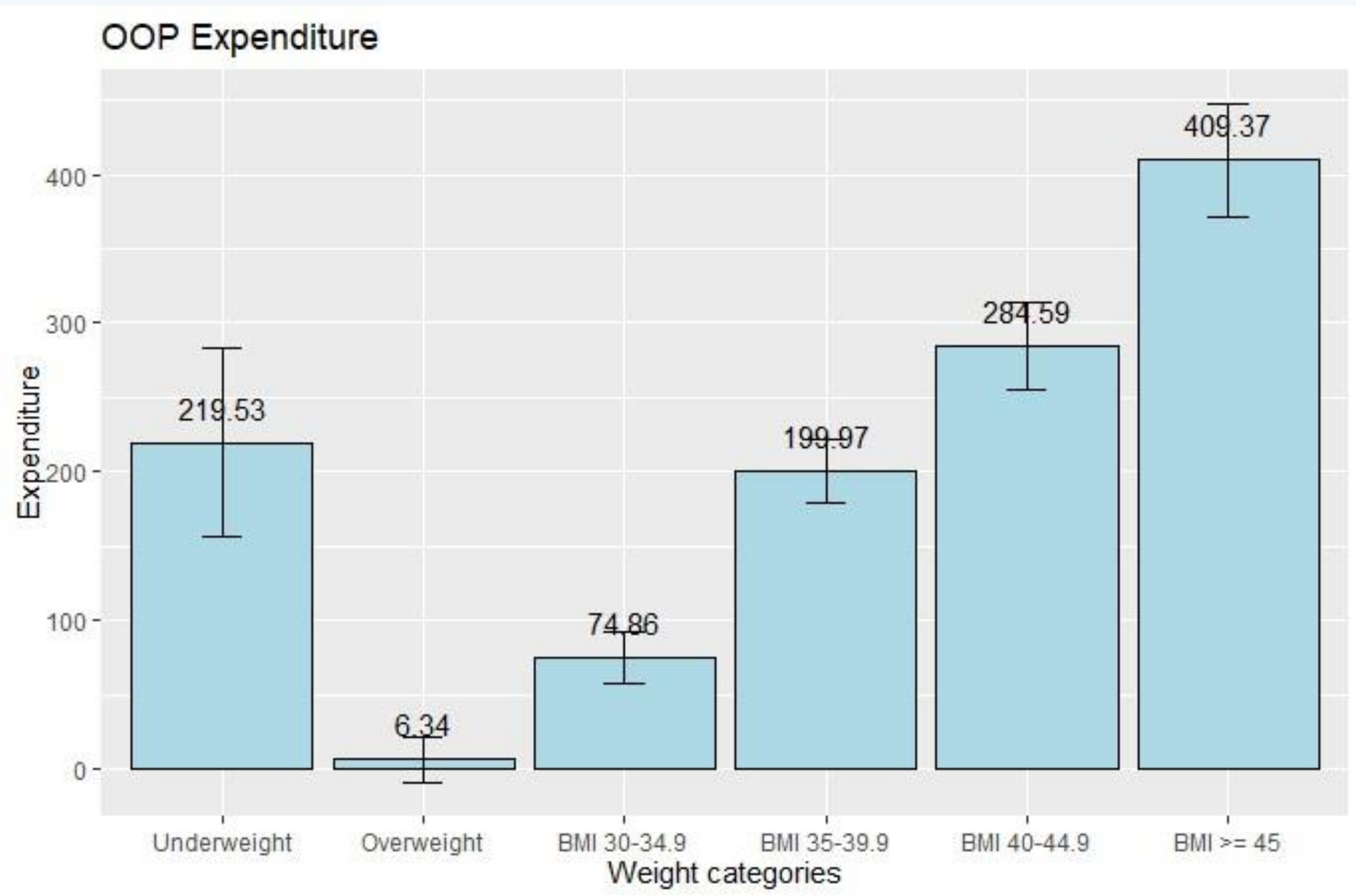
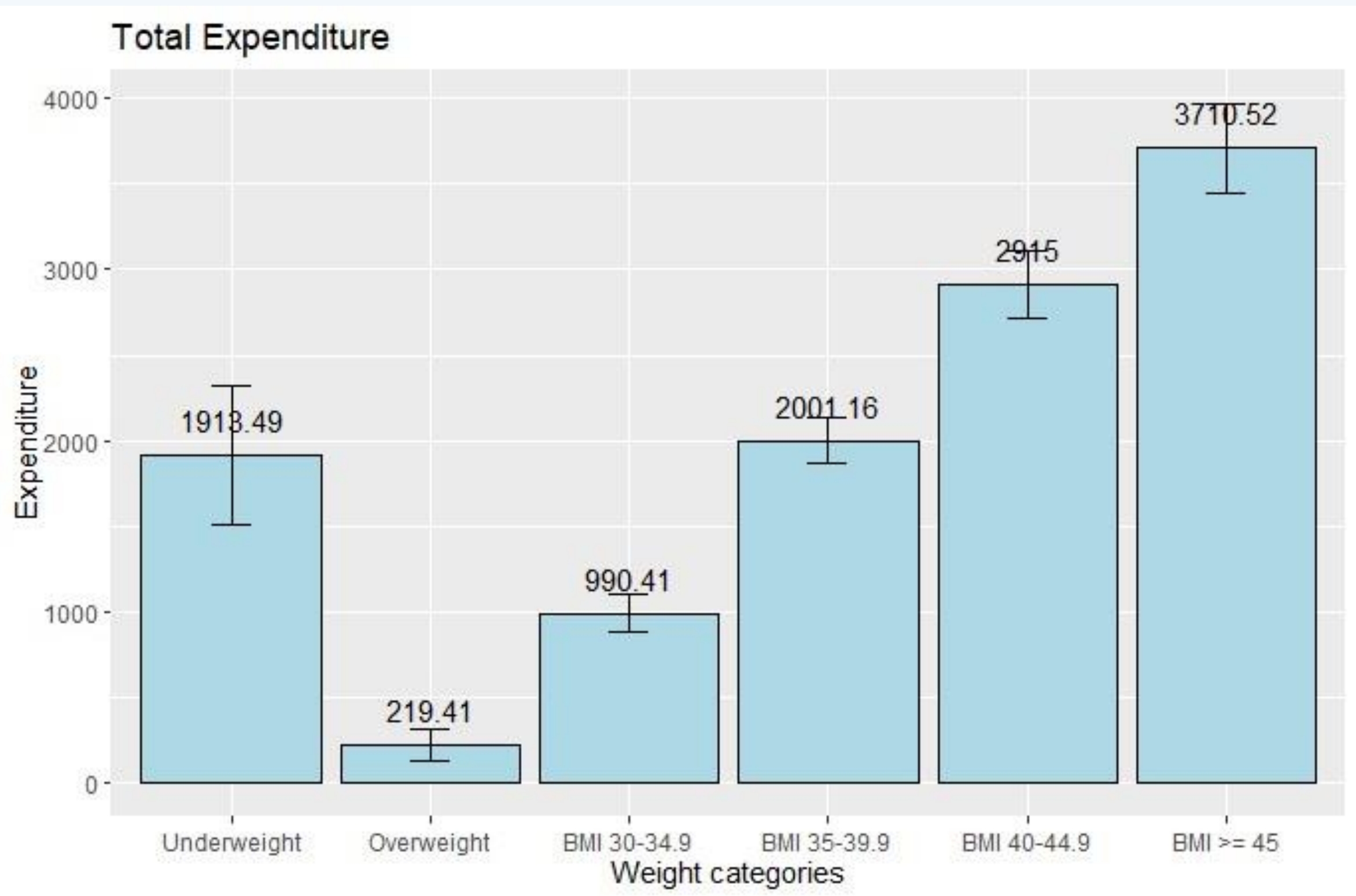
Objective

This study, using measured BMI and medical claims information, aims to update estimates of excess medical expenditures associated with BMI categories among commercially insured US adults in 2022.

Data and Methods

- **Data**
 1. IQVIA's Ambulatory Electronic Medical Records (AEMR), 2022.
 2. Pharmetrics Claims database
- **Model**
 - Two-part model
- **Outcomes**
 1. Medical expenditures
 2. Out-of-pocket (OOP) expenditures
- **Independent variables**
 1. Age
 2. Sex
 3. US Census region

Results



Characteristics		N (%)
Gender	Male	311,629 (44.2)
	Female	393,235 (55.8)
Age	18-25	72,752 (10.3)
	26-35	87,521 (12.4)
	36-45	137,590 (19.5)
	46-55	191,344 (27.1)
	56-64	215,657 (30.6)
	East	113,633 (16.1)
	Midwest	166,730 (23.7)
Region	South	376,239 (53.4)
	West	48,262 (6.8)
Total		704,864 (100)

		Total medical expenditure	OOP expenditure
BMI (ref: healthy weight)	Underweight	1,913.49	219.53
	Overweight	219.41	6.34
	BMI 30-34.9	990.41	74.86
	BMI 35-39.9	2,001.16	199.97
	BMI 40-44.9	2,915.00	284.59
	BMI >= 45	3,710.52	409.37
Gender (ref: male)	Female	1,057.60	204.63
Age (reference: 18-25)	26-35	718.82	177.44
	36-45	2,294.31	349.15
	46-55	4,285.58	547.91
	56-64	6,314.46	859.46
Region (ref: East)	Midwest	228.65	342.97
	South	-120.14	264.67
	West	-680.07	275.81

Discussion

- Compared to persons with a healthy weight, individuals had higher total medical expenditures in the underweight, overweight, and obesity categories.
- Total medical expenditures significantly increased with rising BMI within the obesity category.
- The OOP expenditures were significantly higher among persons with underweight and persons with obesity.
- There was no significant increase in OOP expenditures for individuals who were overweight compared to those with a healthy weight.

Conclusion

We found a J-shaped curve of medical expenditures by BMI category. Higher medical expenditures were associated with high and low BMI and were especially high for persons with severe obesity (BMI>35).

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