Excess Healthcare Costs of Obesity in Germany: A Claims Data Analysis

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Evelyn Reinhard[1], Lena M Richter[1], Alexander Elsner[1], Nils Kossack[1], Katrin Knerr-Rupp[2], Elke Mathey[2]

Obesity causes a substantial economic burden in Germany, which is considerably higher among individuals with co-occurring cardiovascular disease.

Background and Objective

As the leading cause of death, cardiovascular diseases (CVD) represent the greatest public health challenge in the EU[1]. A well-established risk factor for CVD is obesity, and both conditions are associated with increased mortality, morbidity, and healthcare costs[2,3].

Recent data on excess costs attributable to obesity and obesity-related CVD in Germany remain scarce. In this study, we estimated annual healthcare costs of adults with obesity compared to adults without obesity in 2024. Moreover, we analyzed the healthcare costs of persons with obesity and established CVD (without diabetes).

Methods

- Retrospective observational cohort study using 2024 claims data from German statutory health insurance
- The absence or presence of documented ICD-10-GM codes for obesity and CVD in adults (≥ 18 years) were used to define the following cohorts:
  1. persons without obesity
  2. persons with obesity*
  3. persons with obesity* and established CVD* (prior myocardial infarction, prior stroke or symptomatic peripheral arterial disease, but without concomitant diabetes)
- We analyzed baseline characteristics, occupational status, prevalence of obesity-associated comorbidities[4], days on sick leave and annual direct health care costs** as well as income loss due to work absenteeism.
- The direct and indirect costs (income loss) of the no-obesity and obesity-CVD cohorts were adjusted to the age and gender distribution in the obesity cohort.

**main inpatient or ≥ 2 confirmed outpatient or secondary inpatient diagnoses*
***total costs comprise inpatient, outpatient, medication, medical aid, remedies, rehabilitation, home care, sick leave, transportation, and prevention costs*

Tab. 1: Age-gender-adjusted baseline characteristics across cohorts in 2024

Variable	No Obesity		Obesity		Obesity-CVD	
Age groups	**18-64**	**65+**	**18-64**	**65+**	**18-64**	**65+**
Insured persons	1,473,906	532,398	161,628	102,392	5,548	8,754
Female, %	50.5%	53.2%	50.5%	53.2%	50.5%	53.2%
Mean age	49.3	74.5	49.4	74.5	49.5	74.6
Mean CCI	0.7	2.4	1.6	4.1	2.5	4.0
Disability pension, %	5.4%	1.5%	9.9%	2.4%	16.8%	2.9%
Employed, %	68.5%	4.3%	64.3%	3.1%	57.5%	3.1%
Retirees, %	5.7%	89.3%	9.7%	91.1%	16.1%	91.0%
Mean days on sick leave	18.9	22.9	32.1	33.1	45.7	29.9

Results

- Of the ~2.4 million adults in our database, about 10.9% had obesity, of whom 5.4% were assigned to the CVD-Cohort (**Tab. 1**).
- The small proportion of persons with documented obesity[5] confirms undercoding of obesity in claims data and underestimation of costs.
- Proportion of persons receiving a disability pension and the number of sick leave days was higher among persons with obesity compared to persons without obesity, and increased even further in persons with obesity and CVD (**Tab. 1**).
- Total mean costs per patient year amounted to €5,189 in the no-obesity cohort, to €8,218 in the obesity cohort and to €11,648 in the obesity-CVD cohort. Key cost drivers were inpatient, medication, and outpatient costs (**Fig. 1**).
- Income loss increased by 69% in the obesity cohort compared to persons without obesity.
- Extrapolated to the total population covered by statutory health insurance in Germany, this corresponds to an estimated **total excess burden of €21.0 billion direct costs per year** due to obesity and to **additional €0.7 billion per year** due to obesity-related CVD excluding individuals with diabetes.
- Prevalence of obesity-related comorbidities was highest in the obesity-CVD cohort with hypertension and hyperlipidemia being the most common comorbidities in all cohorts (**Fig. 2**).

Fig. 1: Mean direct healthcare costs across different sectors (inpatient, outpatient, medication) and income loss due to work absenteeism in 2024

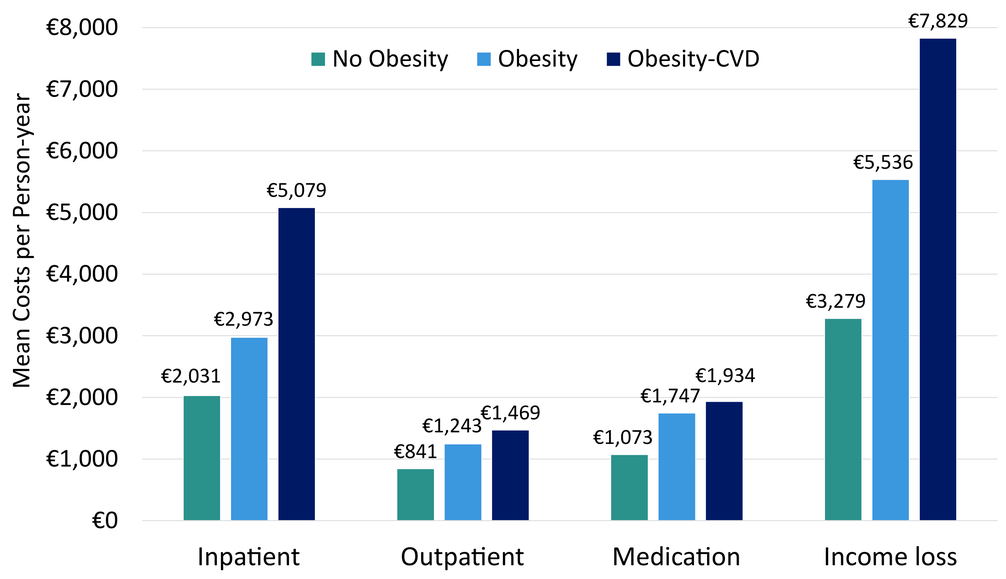
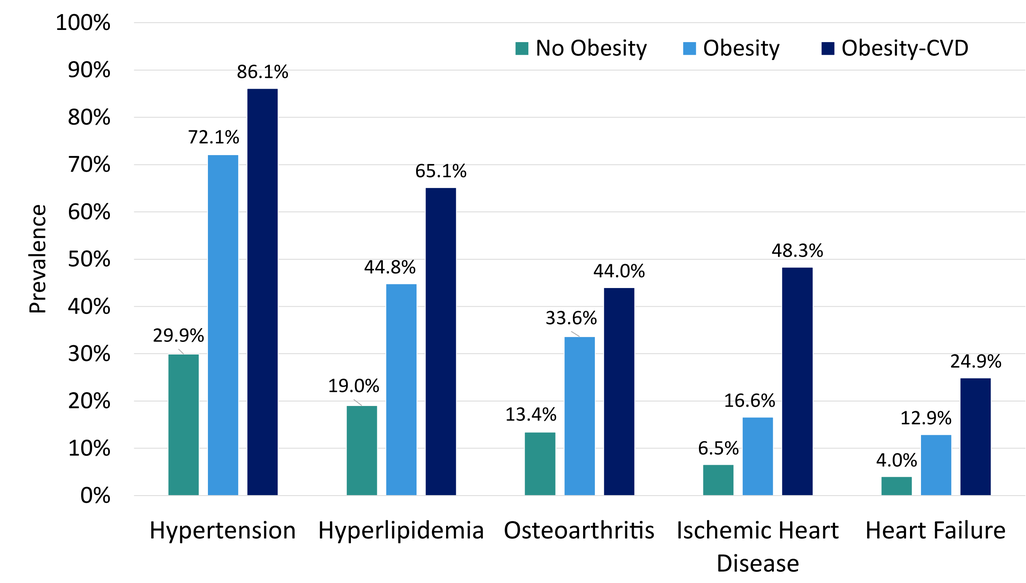


Fig. 2: Prevalence of obesity-related comorbidities



Implications for research and health care practice

The EU Safe Hearts Plan[6] and Germany's 2026 Prevention Offensive[7] prioritize early, risk-based prevention. In our study, documented obesity was associated with a substantial economic burden, greatest in those with established cardiovascular disease. These findings underscore the **importance of early identification, targeted prevention and structured care for high-risk populations**.

SELECT[8] demonstrated fewer major adverse cardiovascular events in people with overweight or obesity and established cardiovascular disease without diabetes, highlighting **opportunities to address obesity and cardiovascular risk**. Further research should assess whether these clinical benefits translate into changes in overall healthcare costs and work-related outcomes in routine care.

Abbreviations: CCI: Charlson comorbidity index, CVD: Cardiovascular disease

References: **[1]** OECD (2025). Cardiovascular Health in the EU. **[2]** Powell-Wiley et al. (2021). Circulation. **[3]** Okunogbe et al. (2022). BMJ Global Health. **[4]** Schienkiewitz et al. (2012). BMC Public Health. **[5]** Starker et al. (2025). Journal of Health Monitoring. **[6]** European Commission (2025). EU Cardiovascular Health Plan (Safe Hearts). **[7]** Bundesministerium für Gesundheit (2026). Präventionsoffensive startet. Pressemitteilung, 16. Juli 2026. **[8]** Lincoff et al. (2023). N Engl J Med.

[1]WIG2 GmbH, Leipzig; [2]Novo Nordisk Pharma GmbH, Mainz

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