



# Trends in prevalence of obesity in the outpatient health service sector in Germany, 2009 to 2018

Annika Steffen • Jakob Holstiege • Manas K. Akmatov • Jörg Bätzing

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## Abstract

### Background

Obesity is associated with numerous concomitant and secondary diseases. People with obesity have, among other things, an increased risk of acquiring type 2 diabetes mellitus, cardiovascular diseases, muscle and joint diseases and a number of cancer types. Even in childhood and adolescence, overweight and obesity are associated with an increased cardiovascular risk profile. The aim of the present work is to investigate prevalence trends of diagnosed obesity by using the nationwide statutory health insurance claims data in Germany in the years 2009 to 2018. The study focuses on sex- and age-specific as well as small-area trends. A comparison with data from a number of available primary studies, in particular conducted by the Robert Koch Institute (RKI), is intended to reveal existing discrepancies in the recording of obesity in routine data.

### Methods

The analysis was based on nationwide statutory health insurance claims data in accordance with Section 295 of Book V of the Social Code (in German Sozialgesetzbuch V, SGB V) for the years 2009 to 2018. The data base includes administrative health service data for all statutory health insurees who had at least one contact with a SHI-physician during the investigation period. Insurees were recorded as prevalent if they had received an ICD-10 code E66 for obesity with the additional modifier “confirmed diagnosis” in at least one quarter (so-called M1Q-criteria) of the year. The prevalence of diagnosed obesity was determined for each reporting year in the period 2009 to 2018 as the proportion of obese patients (M1Q) over the total population of statutory health insurees (in 2018 N = 72,318,540 representing about 87% of the total German population). The total annual number of insurees by age groups, sex and region of the Association of Statutory Health Insurance Physicians (ASHIP; in German Kassenärztliche Vereinigung, KV) was taken from the so-called KM6 statistics of the Federal Ministry of Health which provides total annual numbers of the social health insurees at mid-year.

### Results

The proportion of unspecifically coded obesity diagnoses (E66.9, unspecified obesity) decreased from around 66% to just under 50% during the study period. In addition, coding is increasingly differentiated according to the degree of severity. In 2009, 9.2% of all those with statutory health insurance were diagnosed with obesity (7.3% of men and 10.8% of women). This proportion rose continuously to 11.2% in 2018 (9.5% for men, 12.7% for women), which corresponds to a relative increase of 22% in total (19% for women and 30% for men). It is noticeable that during the observation period, especially in the older age groups from 80 years of age upwards, there was a sharp increase in the frequency of obesity diagnoses. For example, in the very old age group from 85 to 89 years, there was a relative increase of 80% from 8.3% to 14.8% for women and a doubling from 6.4% to 12.9% for men.

In 2018, 4.6% of girls and 4.7% of boys aged 3 to 17 were diagnosed with obesity. Compared to 2009, this corresponds to an increase of 8% for girls (in 2009 4.3%) and 15% for boys (in 2009 4.1%). The comparison with data from a relatively recent study on the health of children and adolescents in

Corresponding author: Dr. med. Jörg Bätzing  
Central Research Institute of Ambulatory Health Care in Germany (Zi)  
Salzufer 8 – 10587 Berlin – Tel. +49 30 4005 2419 – E-Mail: [jbaetzing@zi.de](mailto:jbaetzing@zi.de)





Germany (in German Studie zur Gesundheit von Kindern und Jugendlichen in Deutschland, KiGGS) by the RKI shows that the prevalence is underestimated on the basis of claims data in most age groups — with only one exception (boys 14 to 17 years) — were within the confidence intervals reported by KiGGS. The regional differences in the prevalence of obesity were high (extremal quotient in 2018 for women 1.8 and for men 2.0).

In principle, the prevalence of obesity was higher in eastern than western ASHs. Mecklenburg-Western Pomerania had the highest prevalence for both sexes in 2018 (women 18.3% and men 14.4%), followed by Saxony-Anhalt (women 16.6% and men 12.2%) and Brandenburg (women 15.5% and men 11.8%). At the same time, the second highest (women) and the highest (men) prevalence increase compared to 2009 was observed in Mecklenburg-Western Pomerania with +44% for women and +66% for men.

### Conclusion

Obesity has become a major public health problem worldwide in recent years. The present study, based on statutory health insurance claims data from all statutory health insurees in Germany, shows the increasing importance of obesity in health service for adults up to the highest age groups. In the case of children and adolescents, there have been contradicting or at least stagnating trends in some age groups since the beginning of the millennium. Within the federal states, there are partly strong spatial variations of obesity prevalence at the district level. At the national level, a divide between north-east and south-west in the obesity prevalence could be observed.

### Keywords

Administrative prevalence, adults, adolescents, children, claims data, Germany, obesity, prevalence, SHI-physicians, spatiotemporal trend

### Citation

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