Impact of waist circumference difference on health-care cost among overweight and obese subjects: the PROCEED cohort.

Abstract:
To estimate the incremental effect of waist circumference (WC) on health-care costs among overweight and obese subjects after adjusting for body mass index (BMI). A prospective study. The subjects were members of Internet panels in the United States (US) and Germany. 10,816 individuals (United States: n = 5410; Germany: n = 5406) aged 30-70 years with BMI scores between 20 and 35 kg/m^2^ were recruited and grouped by category: healthy weight (BMI 20-24.9 kg/m^2^), overweight (BMI 25-29.9 kg/m^2^), and obese (BMI 30-35 kg/m^2^). Within the overweight and obese categories, the individuals were stratified by sex and within those subgroups, characterized as above or below the median WC. The subjects self-reported weight, WC, and health-care resource use at baseline, 3 months, and 6 months using online questionnaires. Over 65% of the recruited subjects completed all surveys. Resource utilization was translated into health-care costs by multiplying unit costs from national sources in each country. Annualized health costs were summarized for subjects with low and high WC within the overweight and obese categories. A two-part model generated predicted annual costs because of the WC difference controlling for BMI, demographic, and lifestyle variables among the overweight and obese subjects. When BMI and other
characteristics are constant, annual health-care costs are 16% to 18% higher in Germany and 20% to 30% higher in the United States for the subjects with a high WC compared with subjects with a low WC. Targeting people with a high waist circumference for weight management whether they are overweight or obese may maximize cost-efficacy.