The Economic Impact of Obesity in the South: Assessing Medical Expenditures Attributable to Obesity

Jerome R. Kolbo, Amal Khoury, Wendy Bounds, The University of Southern Mississippi

Jerome Lolbo, Associate Dean
College of Health and Human Sciences
The University of Southern Mississippi
Box 10075
Hattiesburg, MS 39406
601-266-5122 (phone)
601-266-5790 (fax)
Jerome.Kolbo@usm.edu

The purpose of this study was to determine the prevalence of overweight and obesity among adults in the southern region of the US; estimate the increase in adult per capita medical spending attributable to overweight and obesity; assess overweight and obesity related healthcare expenses (both in dollars and as a percentage of total spending); and analyze costs by payer group and sociodemographic groups. By assessing medical expenditures related to overweight and obesity in the southern region, we believe policy makers will have information needed to strengthen federal food and nutrition assistance programs so that appropriate strategies can be targeted to address weight loss and prevent weight gain. In addition, state health departments may use the information to develop new prevention programs that are appropriate for their populations. Some of the key findings of this study were that overweight and obesity are pervasive in the Southern region; prevalence rates are increasing; associated medical costs are significant; expenditures vary by age, gender, race, and payer group; rates are highest among those receiving public assistance; and greatest increases in expenditures are among private and out-of-pocket payers. In this study, two nationally representative data sets were used to develop cost estimates. The Medical Panel Survey (MEPS) and the National Health Interview Surveys (NHIS). MEPS is conducted by the Agency for Healthcare Research and Quality (AHRQ). It is a nationally representative survey of civilian non-institutionalized population that collects data about people’s health care utilization and annual medical spending, including the percentage of spending by out-of-pocket and third-party payers. MEPS contains information about insurance status, region (Northeast, Midwest, South, and West), and sociodemographic (i.e., race/ethnicity, sex, income, education, and marital status). The sampling frame is derived from the linkage of the 1996-2000 MEPS public use file to the records of the same persons in the appropriate years of the NHIS. Height and weight data, necessary to determine the Body Mass Index (BMI) are available for a subset of adult NHIS participants and can be merged with the MEPS data. Our final population included adults nineteen years of age and older residing in the Southern Region with weighting variables that allow for generating regionally representative estimates. Excluded from analysis were those in the MEPS/NHIS population missing height and weight data (which included all individuals under 18 at the time of the NHIS interview and pregnant women). Following the same approach developed by the RAND Health Insurance Experiment and utilized by Finkelstein, et al., (2003; 2004), we used a
four-equation regression approach to predict annual overweight- and obesity-attributable medical spending. Variables representing the four BMI categories (underweight, normal, overweight, and obese) were included into the regressions to predict their impact on annual medical spending. All regressions controlled for age, sex, race/ethnicity, income, education, and marital status. The regressions included insurance status (i.e., private, Medicaid, Medicare, uninsured) in order to estimate the increase in annual medical spending attributable to overweight and obesity for each insurance category. The regressions were estimated using SUDAAN version 8.0. SUDAAN is a statistical software package that controls for the complex sample design of MEPS. The software is specifically designed for analysis of cluster-correlated data. Based on the regression results, the average dollars and percentage increase in per capita medical spending attributable to obesity, as well as standard errors of the estimates were generated. Prevalence rates were then combined with per capita spending estimates, and the percentage of aggregated expenditures attributable to overweight and obesity were computed. This was accomplished by dividing aggregate spending attributable to overweight and obesity by total spending for all people. Standard errors for the aggregate and per capita estimates were computed via the bootstrap method (Goldman et. al., 1995). Expenditures for each year were inflated to 2003 using the CPI Med. This research provides the first and only estimates of obesity-related medical costs in the southern region. Trends in obesity-related medical spending over time could be determined by comparing future estimates of spending with baseline data from this study. Estimating the medical expenditures related to obesity is important in itself. However, these findings will assist local and state policy makers who must decide on distribution of limited resources to address the obesity epidemic. The research will also assist state and federal policy makers in strengthening food and nutrition assistance programs aimed at low-income families. Since these programs are often the primary source of nutrition education for low-income families, their role in the prevention of obesity is vital. The study findings may also assist public and private agencies in the southern region in the development of comprehensive plans to prevent and manage obesity in their states. The analysis was extended to determine "who pays what." Those estimates can be used to form the basis for developing obesity-related programs by public programs, private health plans, and employers.

The data are also critical for future studies to estimate the cost effectiveness of weight management programs and of other efforts to reduce the prevalence of obesity in the region. Cost effectiveness is an increasingly important criterion for allocating scarce resources. Finally, the data will be used to estimate as cost savings associated with incremental reductions in the prevalence of obesity in the south.