Moving toward the transdisciplinary: Using multiple data sets to examine overweight in America

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The rapid rise of obesity in the United States over the past twenty-five years has resulted in an equally rapid increase in the number of research studies published related to the causes, consequences, and possible solutions to this problem. Obesity is a multi-dimensional problem that requires a variety of solutions ranging from changes in individual behaviors related to food and physical activity, in the food and built environment, and in public policy. The ability to examine relationships between food choice, time-use patterns, socio-demographic characteristics and obesity in the context of the U.S. population has historically been limited by data availability. This study utilizes data from the American Time Use Survey (ATUS) and the Consumer Expenditure Survey (CES) to examine obesity in a defined population. Using a mixed methodology that includes Cluster Analysis, bi-variate inferential statistics and regression analysis, we explore the possibilities of using joint data sets to obtain a multi-dimensional picture of obesity.

The obesity literature reveals a wide variety of studies ranging from the fields of medicine to nutrition, and economics to public policy. Methods vary across studies, as do measurements of relevant variables. French et al., (2008) recognize the importance of household purchasing behavior and its role in promoting healthy food behaviors. Kolodinsky et al. (2009) suggest a transdisciplinary approach to studying the role of food, time-use behaviors, the environment and health outcomes. This study explores the possibility of linking several population based nationally representative databases to better understand the roles of food patterns, time use and demographic characteristics on obesity in female single headed households.

Using the ATUS and the CES from 2006 and 2007, we compare two different methods to impute food expenditure patterns into the ATUS: the averaging and the regression methods. There are necessary conditions to perform the imputation. The variables used in the imputation be available in both data sets. Already we are limited due to the differences in focus between economists and nutritionists and the lack of data from other relevant disciplines including medicine, anthropology, marketing and psychology to name just a few. In the CE and ATUS data sets, we are limited to socio-demographic measures. Even with these, care must be taken to make sure variables are measured in the same units. We must also choose the independent variables based on a firm foundation in either or both theory and application.

Imputing expenditure data into the ATUS is not an exact science. The averaging and regression methods do not yield consistent results. However, regardless of the imputation method used, hat regressions estimating overweight show that race, education, health status, and activity patterns all have an impact. The relationship of food patterns to overweight depends on the imputation method used. Care must be taken when imputing values from one data set to another. At the very least, researchers should utilize a variety of logical imputation methods and show how results vary across them. Until we have a single data source that includes information on all the components of the behavioral model of overweight, no complete picture of the significance and magnitude of the variables that affect overweight can be obtained.

References

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