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Many researchers have studied the relationship between diet and health. Specifically, there are papers showing an association between the consumption of sugar sweetened beverages and Type 2 diabetes. Many meta-analyses use individual studies that do not attempt to adjust for multiple testing or multiple modeling. Hence the claims reported in a meta-analysis paper may be unreliable as the base papers do not ensure unbiased statistics. Georgia Southern researchers obtained copies of each of the 10 papers used in a meta-analysis paper and counted the numbers of outcomes, predictors, and covariates. They then estimated the size of the potential analysis search space available to the authors of these papers; i.e. the number of comparisons and models available. The potential analysis search space is the number of outcomes times the number of predictors times 2^c, where c is the number of covariates. This formula was applied to information found in the abstracts (Space A) as well as the text (Space T) of each base paper. Researchers found that: the median and range of the number of comparisons possible across the base papers are 6.5 and (2 to 12,288), respectively for Space A, and 196,608 and (3072 to 117,117,952), respectively for Space T. It is noted that the median of 6.5 for Space A may be misleading as each study has 60-165 foods that could be predictors. We concluded that since testing is at the 5 percent level and the number of comparisons is very large, nominal statistical significance is very weak support for a claim. The claims in these papers are not statistically supported and hence are unreliable, therefore conclusions in the meta-analysis paper is also unreliable.

“A Serious Flaw in Nutrition Epidemiology: A Meta-Analysis Study.”
Recently published in Int. J. Biostats.

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Introduction: Efficient provision of essential public health services may be influenced by collaborative capacity of local health departments (LHDs). Local boards of health (LBoHs) are well positioned to facilitate partnerships.

Objectives: We examined the degree to which LBoHs serve as a linkage between LHDs and 2 types of community organizations, health care providers and local government agencies, and the LBoH characteristics associated with tendency of LBoHs to perform such linkage function.

Methods: Georgia Southern researchers analyzed data from a recent cross-sectional survey, the 2015 National Survey of Local Boards of Health. This survey used a probability sample of 685 LHDs stratified by the state of LHD location and the population size of LHD jurisdiction, resulting in 394 responses for a response rate of 58 percent. We used multivariate logistic regression to pursue the study objectives.

Results: LHD respondents reported that LBoHs served as a linkage with hospitals or other health care providers for 20 percent of LHDs and with local government agencies for 19 percent of LHDs. Significant association of LBoHs’ performance of governance functions existed with their chances of linking LHDs with hospitals or other health care providers (adjusted odds ratio [AOR] = 1.25; P < .001) and with local government agencies (AOR = 1.23; P < .001). Among the factors associated with LBoHs serving as the linkage, the governance function oversight was the strongest, followed by governance functions policy development, continuous improvement, and resource stewardship. Legal authority had weakest association with both types of linkages. A strong positive association existed between LBoHs seeking community input from elected officials and LBoHs’ tendency of serving as the linkage with both health care providers and local government agencies.

Conclusions: The role of LBoHs in linking with hospitals, other health care providers, and government agencies could be further maximized, particularly given the high proportion of LBoHs that include members who are health care professionals.

“Local Boards of Health as Linkages Between Local Health Departments and Health Care and Other Community Organizations” was recently published in the Journal of Public Health Management and Practice.

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