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Dr. Gerald Ledlow and Dr. David Schott at Georgia Southern University, Jiann-Ping Hsu College of Public Health along with Dr. Karl Manrodt at Georgia College and State University published a new book titled *Health Care Supply Chain Management: Elements, Operations and Strategies* which examines supply chain management within the unique context of healthcare services delivery. The authors, with over 60 years combined experience in healthcare administration, supply chain, and academia, first examine the purpose for the study of supply chain management in health care and then go on to tackle the critical topics of sourcing, logistics, security and compliance, purchasing, storage and inventory management, distribution, vendor management, as well as future challenges in health care.
Diagnostic odds ratio is defined as the ratio of the odds of the positivity of a diagnostic test results in the diseased population relative to that in the non-diseased population. It is a function of sensitivity and specificity, which can be seen as an indicator of the diagnostic accuracy for the evaluation of a biomarker/test. The naïve estimator of diagnostic odds ratio fails when either sensitivity or specificity is close to one, which leads the denominator of diagnostic odds ratio equal to zero.

We propose several methods to adjust for such situation. Agresti and Coull's adjustment is a common and straightforward way for extreme binomial proportions. Alternatively, estimation methods based on a more advanced sampling design can be applied, which systematically selects samples from underlying population based on judgment ranks. Under such design, the odds can be estimate by the sum of indicator functions and thus avoid the situation of dividing by zero and provide a valid estimation. The asymptotic mean and variance of the proposed estimators are derived. All methods are readily applied for the confidence interval estimation and hypothesis testing for diagnostic odds ratio. A simulation study is conducted to compare the efficiency of the proposed methods. Finally, the proposed methods are illustrated using a real data set.

"Methods improving the estimate of diagnostic odds ratio," was published in Communications in Statistics – Simulation and Computation.

Ms. Yisong Huang, DrPH candidate was the lead author and Dr. Jingjing Yin, assistant professor, and Dr. Hani Samawi, professor in the Department of Biostatistics at the Jiann-Ping Hsu College of Public Health at Georgia Southern University were co-authors.