A NOVEL WAY TO TEACH BIOSTATISTICS TO PUBLIC HEALTH STUDENTS

Qi Zheng, Texas A&M School of Public Health, USA
qzheng@sph.tamhsc.edu

Public health students need conceptual knowledge to correctly apply biostatistical procedures. Categorical data analysis particularly presents conceptual hurdles to many students, but an unrealistic emphasis on conceptual knowledge allows unfamiliar mathematics to supplant logical reasoning. This presentation gives concrete examples of how I impart conceptual knowledge to public health students in a categorical data analysis course. By relying on high school algebra and first principles, I first demonstrate the algebraic connection between probabilities and logits. Then, via SAS software, I show students how to code the likelihood functions for several important models. This paves the way for students to appreciate abstract concepts like the deviance and the likelihood ratio statistic. The presentation illustrates the new teaching method by classroom-tested problems and their solutions by students.