

Meaningless Statements in Epidemiology

by

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Abstract

A statement involving scales of measurement is called meaningless if its truth or falsity can depend on the particular versions of scales that are used in the statement. We will briefly discuss the mathematical foundations of the theory of meaningfulness, and in particular will discuss some of Jean-Claude Falmagne's contributions to this subject. Using examples from the study of diseases such as HIV, malaria, and tuberculosis, we will give a variety of examples of meaningless and meaningful statements. We will also analyze ways to average scores of cough severity and fatigue that lead to meaningful statements, explore meaningfulness of solutions to optimization problems in epidemiology, and discuss behavioral responses to health events.