



COLLOQUIA TREVERENSIA

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Meta-analysis of diagnostic studies



Heinz Holling is professor for statistics and quantitative methods at the Department of Psychology of the University of Muenster in Germany. His research focuses on optimal design, meta-analysis and intelligence. He has published many articles in international journals e.g. Biometrics, Journal of Statistical Planning and Inference or Psychometrika. Furthermore, he has authored numerous chapters in books and is author or editor of several books. His programs of research have been continuously funded for the past 20 years by the German Research Foundation or Federal Ministry of Education and Research.

Abstract:

Meta-analysis is an important method in the social, medical and natural sciences. It allows for an efficient and transparent integration of empirical findings resulting from several studies. Diagnostic studies often experience the problem that a different cut-off value for the underlying continuous test value has been used. Hence, regions for which the diagnostic test is defined to be positive are different. Specificities and sensitivities arising from such studies might vary just because of different cut-off values. Thus, meta-analysis based on diagnostic studies can result in biased results.

In this presentation, three issues will be addressed. First, a gentle introduction into modern meta-analysis will be given. The second issue is related to the impact of different cut-off values in meta-analyses of diagnostic studies. Finally, some recently developed methods to overcome this problem, e.g. based on ROC-analysis, will be presented. Illustrative examples from clinical psychology will be used for illustration throughout the whole talk.

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