

**Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz**

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**Einladung zum
Biometrischen Seminar**

Am Donnerstag, dem 11. November 2004, 15:00 Uhr (pünktlich)
in der „Alten Bibliothek“ der „Besonderen Einrichtung für
Medizinische Statistik und Informatik“ (vormals IMC) der
Medizinischen Universität Wien, Allgemeines Krankenhaus,
Spitalgasse 23, 1090 Wien

Es spricht Frau Prof. **Malinee Laopaiboon** (Khon Kaen University,
Thailand) zum Thema:

**Meta-analyses involving cluster
randomization trials: a review of published
literature in health care**

Wir hoffen und freuen uns auf zahlreichen Besuch !

Karl Moder
Präsident

Werner Brannath
Sekretär

Meta-analyses involving cluster randomization trials: a review of published literature in health care.

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Throughout the 1980s and 1990s cluster randomization trials have been increasingly used to evaluate effectiveness of health care intervention. Such trials have raised several methodologic challenges in analysis. Meta-analyses involving cluster randomization trials are becoming common in the area of health care intervention. However, as yet there has been no empirical evidence of current practice in the meta-analyses. Thus a review was performed to identify and examine synthesis approaches of meta-analyses involving cluster randomization trials in the published literature. Electronic databases were searched for meta-analyses involving cluster randomization trials from the earliest date available to 2000. Once a meta-analysis was identified, papers on the relevant cluster randomization trials included were also requested. Each of the original papers of cluster randomization trials included was examined for its randomized design and unit, and adjustment for clustering effect in analysis. Each of the selected meta-analyses was then evaluated as to its synthesis concerning clustering effect. In total, 25 eligible meta-analyses were reviewed. Of these, 15 meta-analyses reported simple conventional methods of the fixed-effect model as method of analysis, while six did not incorporate the cluster randomization trial results in the synthesis methods but described the trial results individually. Three meta-analyses attempted to account for the clustering effect in the synthesis methods but approaches were in arbitrary. Fifteen meta-analyses included more than one cluster randomization trial, each of which included cluster randomization trials with a mixture of randomized designs and units, and units of analysis. These mixture situations might increase heterogeneity, but have not been considered in any meta-analysis. Some methods dealing with a binary outcome for some specific situations have been discussed. In conclusion, some difficulties in the quantitative synthesis procedures were found in the meta-analyses involving cluster randomization trials. Recommendations in the applications of approaches to some specific situations in a binary outcome variable have also been provided. There are still, however, several methodologic issues of the meta-analyses involving cluster randomization trials that need to be further investigated.

Reference: Laopaiboon, M. (2003) in *Statistical Methods in Medical Research*, **12**(6), 515-530.