



Ringseminar

„Methoden der Epidemiologie, Biometrie und Versorgungsforschung“

Einladung

Sehr geehrte Kolleginnen und Kollegen,

hiermit möchten wir Sie ganz herzlich einladen zu unserem Ringseminar, das sich der Vorstellung und Diskussion statistischer Methoden und Prinzipien in verschiedenen Bereichen der medizinischen Forschung widmet.

Am **23. Oktober 2023** wird **Dr. Maja Pohar Perme** (Institute for Biostatistics and Medical Informatics, University of Ljubljana) sprechen über

Evaluating cancer screening programmes using survival analysis

Das Ringseminar findet statt von 16.00 – 17.30 Uhr in M24/H10. Alle Interessierten sind herzlich willkommen, eine Anmeldung ist nicht erforderlich.

Abstract:

Cancer screening is a programme for medical screening of asymptomatic people who are at risk of developing cancer. Typically, participants are regularly screened every few years using blood tests, urine tests, medical imaging, or other methods. Among cases who are screened regularly some are diagnosed with cancer based on screening tests (screen-detected cases) and some based on symptoms appearing in the interval between two consecutive screening tests (interval cases). The hypothesis is that the screening programmes improve chances of survival for screen-detected cases as these cases are diagnosed and treated at an earlier stage of the disease compared to counterfactual scenario where their cancer would have been detected based on symptoms. We would like to test this hypothesis empirically. So far, the problem has been tackled by comparing the survival functions of screen-detected cases and interval cases. Realizing that the direct comparison between these two groups would result in biased results, previous research focused on parametric solutions to remove the bias. We argue that the problem lies elsewhere – that this comparison, in fact, does not reflect the question of interest. Therefore, in this study, we precisely define the contrast corresponding to the hypothesis defined above. Since the contrast of interest refers to hypothetical quantities, we discuss which data and under what assumptions can be used for estimation. We also propose a non-parametric framework for evaluating the effectiveness of cancer screening programmes under certain assumptions. The proposed ideas are illustrated using simulated data. The problem is motivated by the need to evaluate breast cancer screening programme in Slovenia.

Mit freundlichen Grüßen

Prof. Dr. med. Dietrich Rothenbacher & Prof. Dr. Benjamin Mayer
Institut für Epidemiologie und Medizinische Biometrie

Prof. Dr. Jan Beyersmann
Institut für Statistik