Research Methods in Global Health

A flipped classroom on research methods for (future) doctoral students in global health

Wednesdays 14:00–15:30 at room 1.203 (K16), INF 130.2 (Marsilius Arcades, South Tower)[*]

Faculty contacts: Jan-Walter De Neve (janwalter.deneve@uni-heidelberg.de), Stefan Kohler (stefan.kohler@uni-heidelberg.de) and Till Bärnighausen (till.baernighausen@uni-heidelberg.de)

The rigor and innovation of our research rests on our methods expertise. A key step at the beginning of a doctorate is therefore to acquire competence in certain scientific research methods. This seminar invites all students who are currently pursuing or planning future doctoral research in global health to a flipped classroom on essential global health research methods. The flipped classroom requires preparation of instructional contend through online courses and other self-study materials. Study goals are identified jointly with the instructors on a weekly basis. Class time is used to explore the weekly topics in greater depth. Self-study material relates to analytical skills and the technical expertise required to design population health studies, analyze data as well as interpret results, and identify and address the limitations of different approaches and analyses.

This methods seminar will meet weekly for 1.5 hours. We will work with the material listed as core curriculum courses in the guidebook to the seminar "Methods Courses for Doctoral Students" (pages 5-6). The guidebook summarizes courses by main themes. In the seminar, one theme will be discussed for approximately three weeks. Some seminar participants will be asked each week to present a specific topic. Afterwards we discuss questions about the methods and how they might be implemented, and we identify population health and health services applications. The pre-requisite for this seminar is willingness and high motivation to prepare contend outside of the classroom in independent study or together with other participants. There is the potential for future mentorship by faculty.

The seminar starts on Wednesday May 2nd 2018 and ends on Wednesday July 25th 2018 (Summer Semester). The following topics will be addressed in the seminar:

1. (weeks 1-3) Statistical inference: applied probability; exploratory data analysis; expectation and variance; central limit theorem; inference; hypothesis testing and confidence for means; proportions and counts; sample size determinations
2. (weeks 4-6) Multivariable regression analysis: multivariable regression; confounder and mediator analysis; Cox proportional hazard models
3. (weeks 7-9) Study designs in population health: descriptive study statistics; matching; cross-sectional, case-control, cohort and ecologic study designs
4. (weeks 10-12) Approaches for causal inference: intervention studies; instrumental variables; difference-in-differences; regression discontinuity
5. (weeks 13-14) Qualitative research and mixed methods: qualitative data collection and analysis; mixed methods analysis; data triangulation

---

[*] In case of an Institute's meeting or major doctoral event, our seminar will be postponed to the next week.

Schedule & lectures*

1. (May 2) Preliminaries
2. (May 16) Statistical inference
3. (May 30) Multivariable regression analysis
4. (Jun 13) Study designs in health research
5. (Jun 27) Approaches for causal inference
6. (Jul 11) Qualitative research & mixed methods
7. (Jul 25) Software resources: Stata, R, NVivo

*14:00–15:30 at room 1.203 (K16), INF 130.2 (Marsilius Arcades, South Tower)