ESPACOMP Workshop 2022: Adherence Data Analysis

Faculty (in alphabetical order):
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Prof. Dr. Rebecca Bartlett Ellis, PhD, RN, Associate Professor, Executive Associate Dean for Academic Affairs, School of Nursing (Indiana University, USA)
Dr. Alexandra Dima, PhD, CPsychol, Senior Research Fellow (Sant Joan de Déu Research Institute, Spain),
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Dr. Isabella Locatelli, PhD, Statistician (University of Lausanne, Switzerland)
Prof. Dr. Bernard Vrijens, PhD, Invited professor of Biostatistics (Liège University, Belgium) & CEO, Scientific Lead (AARDEX Group, Belgium)
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Dr. Hans Wouters, PhD, Lecturer of Methods & Statistics, Department of Educational Science, (Open Universiteit, The Netherlands) and Senior Researcher, Special Research group Arts & Psychomotor Therapies (HAN University of Applied Sciences, the Netherlands)

Introduction: The 2022 ESPACOMP Data Analysis workshop will take place on November 17, before the annual conference planned for 17-19 November in Berlin, Germany. In previous years, trainees have appreciated an interactive format in which examples of ongoing or planned studies could be discussed with the trainers and the other participants. Interest was also expressed for hands-on practical sessions on estimating adherence from different types of data. In 2022 we will provide conceptual overviews as self-paced preparatory materials, hands-on exercises, and interactive sessions that address different stages of a research project, from study design to data analysis and reporting.

This 1-day workshop is intended for researchers and advanced students interested to estimate adherence from electronic monitoring (EM), or electronic healthcare databases (EHD). It will include new materials adding to previous ESPACOMP courses, but attendance to prior courses is not a requirement; the course could also represent a starting point to adherence research as individual recommendations will be provided for further study.

The course is designed for in-person participation. Preparatory materials will be accessible online in advance. A fully online format will be considered depending on changes in travel restrictions.

Learning objectives: By the end of the workshop, participants will be able to:
(1) Use the ABC taxonomy, EMERGE guidelines and TEOS framework to interpret published studies.
(2) Design and report their own study/analysis according to these guides.
(3) Calculate adherence to medications using R for sample datasets containing EM or EHD data.
(4) Describe different practical challenges in adherence study design / data analysis and possible solutions.

Learning methods:

Online materials (short video presentations, reading materials, tutorials, R scripts). Data analysis examples will be provided following Open Science principles of transparency and reproducibility. Materials and recommendations for course preparation on R basics, adherence concepts, research design, and R scripts for adherence analysis will be provided.

Interactive discussions. Participants will be invited to propose examples from their own work for discussion, in the form of **case studies** describing the challenges they encounter in their own research. They can refer to either planned, ongoing, or completed research, and are intended to generate an open discussion with the workshop trainers and fellow adherence researchers. The case studies may concern the above-mentioned topics and be presented in 3-6 slides with the following structure:

- Context: study aims, research questions, key study design elements, setting
- Problem(s): what are the challenges you are confronted with?
- Question(s): what would you like to know from the workshop trainers and fellow participants?

Small group and individual work. Participants will work on the example datasets either in small groups or individually, during the afternoon sessions.

Maximum number of participants: 10-30, in person

Requirements for participation: Upon registration, participants will be asked to provide information on prior training and work experience in statistics (including R & R Studio), relevant work / interest in adherence research, and expectations from the workshop.

Materials will be made available 2 weeks before the workshop. At this moment, participants will be invited to **register for presenting case studies** and questions for group work at least 2 days before the workshop.

Participants will be required to familiarize themselves with the preparatory materials before the workshop. They are required to bring a working computer with an up-to-date installation of R & R Studio at the workshop.

Agenda:

08:45-09:00	**Welcome and Review of the Workshop Program**	Alex Dima
09:00-10:45	**Study example presentations from participants – part 1**	All
	2-3 case studies from participants	
10:45-11:00	*BREAK*	
11:00-12:45	**Study example presentations from participants – part 2**	All
	2-3 case studies from participants	
12:45-13:45	*LUNCH*	
13:45-15:15	**Interactive didactic session – split groups on EHD and EM data**	EM: Isabella Locatelli, Bernard Vrijens, Marie Schneider EHD: Sam Allemann, Alex Dima, Hans Wouters
	Overview of challenges and solutions, with examples and hands-on exercises	
15:15-15:30	*BREAK*	
15:30-16:30	**Interactive didactic session – split groups on EHD and EM data**	As above
	Overview of challenges and solutions, with examples and hands-on exercises	
16:30-17:00	**Q&A on adherence measurement**	All
	Group discussion on conceptual bases of adherence measurement and their practical applications	