

Strategic Scientific Workshop funded by the Humboldt Centre, University of Bayreuth:

Understanding the digital divide in health promotion: An international expert workshop

20-23 June 2023, Kulmbach

Social inequalities are an important contributor to the global burden of disease. It has been initially assumed that digital health technology may increase access to high quality health care at low cost, however, initial studies suggest that digital health interventions may widen, instead of reduce, health disparities. Since disparities may occur both within and between countries or geographic regions, this workshop aimed to bring together an international group of researchers addressing social inequalities in digital health promotion. Specifically, we synthesized the current state of research, assessed underlying mechanisms of the digital divide, identified research gaps, and proposed potential solutions to improve (digital) health for all. In addition, the workshop laid the foundation for an international network on the study of the digital divide in health promotion.

Workshop participants

Fifteen participants from eight countries attended the workshop, with areas of expertise ranging from psychology and public health to health economics and law:

- Dr. Leif Boß, Leuphana Universität Lüneburg, Germany
- Dr. Heide Busse, BIPS Bremen, Germany
- Rosie Cooper, University of Oxford, United Kingdom
- Dr. Cindy Forbes, University of Hull, United Kingdom
- Kathrin Gemesi, LMU München, Germany
- Dr. Laura Gumbert, SMA Europe, Germany
- Dr. Yetunde Olufisayo John-Akinola, University of Ibadan, Nigeria (travel bursary recipient)
- Jun.-Prof. Dr. Laura M. König, University of Bayreuth, Germany (chair of the organizing committee)



Figure 1: Group photo of the workshop participants.

- Professor Dr. Becca Krukowski, University of Virginia, United States of America (member of the organizing committee)
- Professor Dr. Emmanuel Kuntsche, La Trobe University, Australia (member of the organizing committee)
- Dr. Nor Firdous Mohamed, Universiti Pendidikan Sultan Idris, Malaysia (travel bursary recipient)
- Professor Dr. Efrat Neter, Ruppin Academic Center, Israel
- Dr. Kathryn Ross, University of Florida, United States of America
- Anabelle Macedo Silva, Federal University of Rio de Janeiro, Brazil (travel bursary recipient)
- Dr. Max Western, University of Bath, United Kingdom (member of the organizing committee)

The funding provided by the Bayreuth Humboldt Center allowed us to grant three travel bursaries to early career researchers from low- and middle-income countries who already made substantial contributions to digital health research. This allowed us to extend participation to all continents.

The workshop was furthermore supported by a student assistant, an intern, and two research assistants from the University of Bayreuth, who represented an additional three countries:

- Anila Allmeta, PhD student and research assistant, from Albania
- Mirna Al Masri, research assistant, from Lebanon
- Verona Bähr, student assistant, from Germany
- Victoria Diana González Rocha, intern, from Mexico

Understanding the digital divide in health promotion: Evidence, mechanisms, research gaps, and solutions

The workshop started with two days of stimulating presentations. The four workshop organizers delivered keynote speeches to present current evidence of the existence of a digital divide in health promotion:



Figure 2: Workshop participants collecting open questions regarding the digital divide in health promotion as a basis for further discussion.

- Dr. Max Western: Digital divide in physical activity: Evidence, mechanisms, and potential solutions
- Jun.-Prof. Dr. Laura M. König: The digital divide in mobile health promotion: Evidence, challenges, and future directions
- Professor Dr. Becca Krukowski: Using technology to expand access to weight management interventions
- Professor Dr. Emmanuel Kuntsche: Collecting better evidence to better understand the digital divide in health promotion – the example of alcohol research

Each keynote was followed by a Q&A session to allow for first discussions. In addition, all participants presented their work on digital health and equity. Given the academic and cultural diversity of the participants, we were able to learn from each other about specific cultural and regional challenges of implementing digital health technology as well as from different viewpoints by e.g., psychology, public health, and law scholars.

On day 3, we identified common themes and open questions regarding the existence of a digital divide in health promotion and collected ideas for how disparities may be overcome. These issues as well as ways to move forward were discussed in breakout groups. Some of the focal issues identified were:

- The need to acknowledge and address issues limiting inclusivity at all stages of the research process
- Opportunities and challenges of remote (online) assessments in research
- The need to inform healthcare practitioners about digital solutions in health promotion and train them to become users and advocates
- The need to promote public-private partnerships and to use available datasets (e.g., produced by commercial service providers) for academic research purposes

The day 3 ended with a presentation of concrete actions the workshop participants are planning to take to leverage and further promote the network, including writing commentaries and reviews to highlight existing issues and potential solutions, organizing an international online lecture series, connecting on social media and via a mailing list, and meeting again in person in 2025. On day 4 of the workshop, working groups were formed to put the ideas into action.



Figure 3: Working on joint manuscripts in breakout sessions.



Figure 4: Learning about the history of the city of Kulmbach.

At the time of submitting this report (October 2023), based on the discussions we had during the workshop, two manuscripts have been submitted for publication in international peer-reviewed journals:

König, L. M., Krukowski, R. A., Kuntsche, E., Busse, H., Gumbert, L., Gemesi, K., Neter, E., Firdous Mohamed, N., Ross, K. M., John-Akinola, Y. O., Cooper, R., Allmeta, A., Macedo Silva, A., Forbes, C. C., & Western, M. J. (2023). *Reducing intervention- and research-induced inequalities to tackle the digital divide in health promotion*. Manuscript under review at the International Journal for Equity in Health.

Krukowski, R. A., Ross, K. M., Western, M. J., Cooper, R., Busse, H., Forbes, C., Kuntsche, E., Allmeta, A., Silva, A. M., John-Akinola, Y. O., & König, L. M. (2023). *Digital Health Interventions for All? Examining Inclusivity Across All Stages of the Digital Health Interventions Research Process*. Manuscript under review at Trials.

Creating a network for scholars working on reducing digital health disparities

In the evenings, several social activities facilitated networking between the workshop participants. For example, we organized a city tour, where we learned about the history of Kulmbach, and afterwards went for dinner together. A first outcome of the networking activities during the workshop is a successful grant application by workshop attendee Dr. Mohamed, who will study medication adherence in coronary heart disease patients in Malaysia and potential benefits of supporting medication adherence through digital technology together with Jun.-Prof. König.

The Twitter account (<https://twitter.com/digidividenet>) created to advertise the workshop is still active; depending on the future of the platform, the account might move elsewhere. The account will be used to share relevant publications and events by network members and other academics working on related issues. We are also planning to create a permanent website for the network and a mailing list for interested researchers in the near future.