

Propositions

accompanying the dissertation

SUPPORTING ELECTRONIC MENTAL HEALTH FOR DEPRESSION WITH ARTIFICIAL INTELLIGENCE

THOUGHT RECORD ANALYSIS AND GUIDANCE

by

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1. The e-mental health degree of technological sophistication scales can reliably assess the technological sophistication of a psychotherapeutic software program for e-mental health (Chapter 2).
2. The majority of guided and unguided e-mental health for depression systems developed to date do not differ in the composition of their content or their technological sophistication (Chapter 3).
3. Machine learning approaches can identify maladaptive core beliefs from the thoughts denoted in a thought record (Chapter 4).
4. Most subclinically depressed people can complete thought records in dialog with a conversational agent (Chapter 5).
5. The benefits of using a conversational agent for the delivery of psychotherapeutic interventions exceed the drawbacks (Liao 2021, Results to RQ 1).
6. In 30 years' time, the micro-randomized trial will have replaced the randomized controlled trial as the gold standard in evaluating e-health applications (Klasnja et al. 2015).
7. Since those experiencing anxiety, depression, or loneliness are likely to turn to ICT devices to escape negative situations, these devices are optimally suited to also deliver interventions (Panova and Lleras 2016).
8. Given the administrative overhead currently required for research studies (data management plans, data protection impact assessments, and applications for ethical approval), the lack of legal knowledge on the side of the researchers, and the limited resources of those with such knowledge, we will see these forms being drafted by artificial intelligence within the next 10 years.
9. The interpretation of interrater reliability outcomes is defined by the context of the study (O'Connor and Joffe 2020).
10. Since the infant-parent bond is an important factor in long-term mental health, the babies born just before or early in the COVID-19 pandemic will show a lower lifetime prevalence of mental illness than cohorts born one or two years earlier (Winston and Chicot 2016).

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor prof. dr. M.A. Neerinx and the promotor dr. ir. W.-P. Brinkman.

Klasnja, Predrag et al. (2015). "Microrandomized trials: An experimental design for developing just-in-time adaptive interventions." In: *Health Psychology* 34.S, p. 1220.

Liao, Yuting (2021). "Design and Evaluation of a Conversational Agent for Mental Health Support: Forming Human-Agent Sociotechnical and Therapeutic Relationships". PhD thesis. University of Maryland, College Park.

O'Connor, Clodhna and Helene Joffe (2020). "Intercoder reliability in qualitative research: debates and practical guidelines". In: *International journal of qualitative methods* 19, p. 1609406919899220.

Panova, Tayana and Alejandro Lleras (2016). "Avoidance or boredom: Negative mental health outcomes associated with use of Information and Communication Technologies depend on users' motivations". In: *Computers in Human Behavior* 58, pp. 249–258.

Winston, Robert and Rebecca Chicot (2016). "The importance of early bonding on the long-term mental health and resilience of children". In: *London journal of primary care* 8.1, pp. 12–14.