

1. Project title

Monitoring menopause: Studying self-tracking technologies and their implications for bodily experiences

2. Coordinators and supervisors

Project coordinators

Dr. Marjolein de Boer (TSHD, DCU)

Dr. Nadine Bol (TSHD, DCC)

Prof. dr. Jenny Slatman (TSHD, DCU)

Prof. dr. Emiel Kraemer (TSHD, DCC)

Project supervisors (daily supervision)

Dr. Marjolein de Boer (TSHD, DCU)

Dr. Nadine Bol (TSHD, DCC)

3. Project summary

3.1 Project outline

Over the last decade, self-tracking health technologies have become increasingly popular (Goggin, 2011; Krieger, 2013; Lupton, 2014). These technologies range from apps for mobile phones to wearables, and cover a broad range of aspects of health. Interestingly, a significant part of these self-tracking technologies are geared towards women and their physical functionality and changes: from menstruation tracking apps, to feminine weight loss apps, to pink fitbits (Lomborg et al., 2018; Lupton, 2018; Sanders, 2017). Surprisingly, within the literature on self-tracking, menopause, a bodily change that every women will go through, is largely taken for granted. Besides the irregularity and cessation of menstruation, menopause may involve a wide range of bodily changes: hot flashes, night sweating, a dry(er) vagina, high blood pressure, insomnia, or heart palpitations. As such, there is a broad spectrum of potential technologies that menopausal women may use to track this bodily transition, namely specifically tailored menopause apps (e.g., Menopro; Hot Flash Sister), apps for tracking sexual functionality (e.g., SAA app; Vaginal Dryness), sleep apps (e.g., Sleep cycle), Fitbits, and digital heartrate meters. However, we currently lack knowledge on the **usage, needs, and impact** of such technologies. In other words, we do not know which types of apps menopausal women use, with what goals, under which conditions they find these apps useful and acceptable, and how these apps impact their bodily experiences.

3.2. Objectives

The main objective of the project is **to provide insight into women's usage of self-tracking technologies in menopause, and the ways in which users' experiences of themselves and their bodies are affected by these technologies**. By adopting an interdisciplinary approach, the project consists of three subprojects. In an exploratory survey, **Subproject 1** will systematically identify how many menopausal women **use** self-tracking technologies, the type of technologies they use, and what kinds of practices, and motivations are involved in using these technologies. **Subproject 2a** will test women's **need** for different

tracking functionalities by means of a vignette-based experimental study.

Subproject 2b will conduct an empirical-philosophical study to explore how using self-tracking technologies **impact** women's embodied actions, bodily experiences, and sense making structures of the self.

3.2 Subprojects and methodology

Subproject 1: Exploratory survey to usage of self-tracking technologies in menopause (DCC and DCU)

It has been generally claimed that self-tracking technology has the potential to support people's health. There is, however, little known about what type of technology people use for what purposes: an app may not only offer different functionalities, but a single functionality may elicit different usage options (Bol, Helberger, & Van Weert, 2018; Sharon & Zandbergen, 2017). This complexity in usage patterns also applies to self-tracking technologies within menopause: a wide variety of different potential apps offer various functionalities that may (or may not) support women within menopausal transition. To identify which menopausal women use what kind of technology, and how they use it, the DCC and DCU students will collaboratively work on conducting a survey. They will use snowball sampling to collect data of menopausal women (N=200), using standardized questionnaires on measuring technology use (as used in Bol et al., 2018). We strive to support data collection by offering this survey project as thesis topic to other DCC Master's students. In addition, this subproject will provide necessary input for Subprojects 2a (e.g., examples for the vignettes) and 2b (e.g., participants for in-depth interviews).

Subproject 2a: A vignette-based experimental study to test the needs for self-tracking functionalities in menopause (DCC)

The DCC student will test how different tracking functionalities influence the perceived usefulness and adoption of self-tracking technologies in a vignette-based experimental study. Based on Subproject 1, we develop ~12 vignettes that represent different types of functionalities within self-tracking tools (e.g., self-monitoring, personalized feedback, social support, see Abraham & Michie, 2008). In the experiment, we test the benefits and costs women perceive in using these functionalities, and how the cost-benefit tradeoff influences their willingness to use self-tracking technology for menopause. To test 12 vignettes, 279 participants are required to reach sufficient statistical power to detect medium effect sizes (Cohen, 1988; Faul, Erdfelder, Lang, & Buchner, 2007). This subproject will provide a nuanced understanding of the needs of menopausal women for specific self-tracking functionalities.

Subproject 2b: A qualitative empirical-philosophical analysis of self-tracking technologies' impact on actions, experiences and identity construction in menopause (DCU)

This subproject asserts that self-tracking technologies may be understood as mediating people's actions and experiences and/or as a hermeneutic way of interpreting the embodied self (Ajana, 2017; De Boer & Slatman, 2018; Verbeek, 2006). To explore the influence of menopausal self-tracking technologies, the DCU

student will conduct a qualitative in-depth interview study with menopausal women who use self-tracking technologies. These women (N=15) are sampled based on the target group analysis in Subproject 1. The collected data will be interpreted by drawing on relevant philosophical theories. In doing so, this subproject will provide a comprehensive analysis of constructions of menopausal bodies and selves in the context of self-tracking technologies.

3.3 Collaborative aspect and output

This project combines expertise from DCU (i.e., empirical-philosophical research using **qualitative** research methods) and DCC (i.e., health communication using **quantitative** research methods). As we strive for true interdisciplinary collaboration, the project starts with the joint Subproject 1. Subprojects 2a and 2b will be carried out in parallel (supervision DCC trainee by dr. Bol and prof. dr. Krahmer; DCU trainee by dr. De Boer and prof. dr. Slatman), and each project will result in a publication (e.g., *Health Communication* for Subproject 2a, and *Science, Technology and Human Values* for Subproject 2b). The results of the projects will be jointly presented during a colloquium.

This project is highly relevant for ongoing TSHD projects, namely the NWO-VICI research project 'Mind the Body' (PI: Prof. dr. Slatman, Postdoc: dr. De Boer), and the DATA2PERSON research project 'Data-driven shared decision making on cancer treatment for individual patients' (PI: Prof. dr. Krahmer). This project also contributes to Tilburg University's impact theme "Enhancing Healthcare and Wellbeing". Finally, this project will contribute to dr. De Boer's NWO-VENI application about bodily experiences in menopause.

3.4 Timeline

Subprojects	Activities	Months	Deliverables
Subproject 1	Employing survey among N=200 menopausal women	1-4 (Oct-Jan)	<ul style="list-style-type: none"> ▪ Insights into the usage of self-tracking technologies by menopausal women ▪ Input for Subproject 2a and 2b
Subproject 2a	Conducting vignette-based experimental study among N=279 (menopausal) women	5-9 (Feb-Jun)	<ul style="list-style-type: none"> ▪ Article 1: how different self-tracking functionalities affect usefulness and acceptance of self-tracking technologies
Subproject 2b	Conducting interview study among N=15 menopausal women	5-9 (Feb-Jun)	<ul style="list-style-type: none"> ▪ Article 2: how does the usage of self-tracking technologies in menopause impact women's actions, experiences, and sense-making structures
Finalization project	Symposium	9 (Jun)	<ul style="list-style-type: none"> ▪ Presentations about project 2a and 2b

4. Research traineeship profile

We are looking for two enthusiastic students, one in communication and information sciences with experience in quantitative research and one in cultural studies or philosophy with experience in or affinity with qualitative research. Both students are at the Master's or Research Master's levels, are available for 1-2 days a week between October 2019 and June 2020, have excellent communication skills, and are interested in digital technologies and health.

5. Application information

Applications, including a motivation letter and a CV should be sent to both dr. Marjolein de Boer (M.L.deboer@uvt.nl) and dr. Nadine Bol (Nadine.Bol@uvt.nl).

6. References

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