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REPRODUCTIVE HEALTH APPS AND EMPOWERMENT – A CONTRADICTION?

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Introduction

Women's reproductive health is a contested field, with past and ongoing struggles for power over women's bodies (e.g. Stanworth, 1987; Franklin 1997; Lupton, 2013). In a lifetime, women and others who menstruate are expected to go through about five hundred menstruation cycles and pregnancy (or its avoidance) is a key part of life for many (Karlsson, 2019). Yet, the bleeding and pregnant female body has been deemed 'impure,' 'unclean', and 'out of control,' and menstruating women emotionally labile, irrational, and mentally or physically ill (Johnston-Robeldo & Chrisler, 2013; Kristeva, 1982). Throughout history, argumentations as these have been used to control female bodies and exclude women from parts of society and social life (e.g. Stern & Strand, 2022).

One event in the history of reproductive health that is often described as revolutionary was the invention of the contraceptive pill in the 1960s, an invention that is often credited for women's sexual liberation (Watkins, 1998). However, since then, the pill,

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being a hormonal contraceptive, has faced a considerable amount of critique due to its unwanted side effects (Watkins, 1998). Many advocate contraceptives that are hormone-free, and today these alternatives often come in the shape of reproductive health apps.

Such applications claim to offer users reliable fertility tracking, a sense of control without the need to take hormones. They are part of a wider trend of technologies directed towards women, labelled FemTech – Female Technology. These apps offer a digital alternative to manage fertility, menstruation, and pregnancy. Are they helping women in similar ways as the invention of the pill did?

While reproductive health apps are often marketed in terms of female empowerment (Hendl & Jansky, 2021; Healy, 2021) and seem to offer women new and improved ways of managing their health, they are at the same time criticized for lacking data privacy (Mehrnezhad & Almeida, 2021; Fox, Howell, Wong & Spektor, 2019). Furthermore, the apps have been criticized for turning users into objects of surveillance, discipline and commodification (Healy, 2021; Roetman, 2020; Lupton, 2015) and of perpetuating normative stereotypes about women as reproductive subjects (Lupton, 2015).

Furthermore, empowerment is a contested term and studies on technology have shown how it is rarely defined and instead used in a wide variety of ways (Schneider, Eiband, Ullrich & Butz, 2018). Our point of departure is thus a critical understanding of empowerment and potential through the design of these apps. This is founded on e.g. Anne-Marie Willis' concept of the 'double movement of ontological designing' (2006). This concept argues that we design and create the material circumstances in our world and those circumstances in turn shape us and our understanding of the world. In the case of menstruation apps, the hypothesis we build on is that the way that the apps are designed shape how we understand reproductive health.

FemTech and its apps are increasing in popularity and yet, we know little about how these app-based technologies come into users' lives and co-shape experiences of e.g. bleeding and pregnancy. Considering the contested history of female reproduction and technologies, and the fact that most of these apps are developed by commercial companies, there are many questions regarding the actual relation between these technologies and the potential for individuals' empowerment. Thus, we ask: How do these apps represent reproductive health? What kinds of empowering qualities are present in them? Are there any aspects of the technology that (inadvertently) counteract the empowering purpose?

Approach

In this paper, we present results from an ongoing five-year project on the topic of commercial FemTech apps and their empowering and dis-empowering potentials, both in the interface design and in the creative practices of users. Our data primarily consists of critical walk-through analysis and researcher use-diaries of the interaction design of nine of the most downloaded menstruation apps, as well as nine of the most downloaded pregnancy apps, based on incognito searches and official download

statistics from the google play store. The insight we build on is that the way that the apps are designed, and the reproductive event such as menstruation and pregnancy is represented in the design, has the potential to shape how we understand our bodies and reproductive health.

The project data also consists of interviews with app developers and users which add extra depth to our study, but this data gathering and analysis is still ongoing. The focus of our presentation will therefore be on the interaction design of the apps and the results from the critical app walkthrough and researcher use diaries that we have performed.

Results and conclusions

We show in our analysis that there are three critical ways in which these apps represent reproductive health events to users through design. We analyze; 1) interface metaphors used to represent temporality, 2) datafication of reproductive health through input and output for intimate data tracking and 3) finally the ways predictions convey certainty over uncertainty and the implications of this.

Reproductive health tracking apps become part of a certain model of reproductive health, as predictable, exact, trackable through medicalized symptoms, and controllable through technological means. This model comes at the expense of other ways of seeing and experiencing reproductive health. Feminist theories of the body have long argued for the feminine body as unruly, leaky, and wayward (Carter, 2010; Kristeva, 1982; Butler, 2011). In history, this leaking was used as an argument for keeping female bodies out of certain areas of society, for example the military (Stern & Strand, 2022). Indeed, medical technology for female reproductive health has historically been contentious, often with negative impact for women and children (Franklin, 1997; Franklin & Ragone, 1997). The way that these apps represent menstruation and pregnancy and offers interactional possibilities to users enforces a certain techno-medical definition at the expense of more embodied, troubled, leaky, and multiple versions and interpretations.

However, as Stanworth (1987) has argued, reproductive health technologies seldomly have simple effects, but rather often contain both; negative consequences and potential for empowering women. As we show with these apps, the potential to learn more about both the individual body and the way that reproductive health is part of everyday life, holds great potential for something that historically women had to do in secret, or consult medical doctors for. Yet, the empowering potential is not utilized enough in current popular designs.

From our results we present four design sensitivities meant to inspire designers to design for other types of period tracking experiences that might empower bleeders. These are 1) support lived temporalities, 2) embrace uncertainty, 3) empower the self, and 4) design less. Together, they support the call for HCI practitioners to support a plurality of female experiences and has the potential to empower a historically disempowered group (Keyes et al., 2020).

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