
Health-tracking in the Workplace: Empirical and Methodological Considerations

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Abstract

Health-tracking technologies are increasingly introduced in workplace settings. Research so far has tended to look at specific technology implementations leading to design recommendations or grand visions of the quantified workplace. So far, however, little is known about the lived experiences of health-tracking in the workplace. We wish to open up a discussion of the methodological considerations that are inevitable in qualitative research, basing our discussion on observational studies of a step-counting campaign in a Danish workplace. We readily acknowledge that we have influenced the field, as qualitative methods do. Questions of bias and self-selection are inevitable to qualitative research, but not often discussed in CSCW research.

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Health-tracking; workplace; observational studies; qualitative; activity tracker;

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Introduction

An industry estimate predicts that 13 million personal health tracking technologies will find their way in to the business plans of companies in the coming years (ABI Research, 2013). Already now companies introduce health-tracking technologies in health insurance plans (US companies), and as part of health promotion campaigns aimed at the workplace (as in Denmark, for example). Much of this activity, however, relies on excited marketing rhetoric around these devices despite a lack of studies considering the impact of wearable tracking technologies as they enter various social domains (Lupton (Ed.), 2014; Miller et al., 2012).

In our research we define a health-tracker as any kind of wearable device that provides a measure of some sort of activity or health indicator of the wearer, and presents it to the wearer either via the device itself, via an app and/or a web-browser interface. Examples of these types of devices include Fitbit, Jawbone UP, and Nike band Fuel, typically measuring one or several things, such as steps, calories burnt, sleep, pulse, active minutes, and floors walked.

As with many other new technologies, health trackers tend to inspire supporters on both sides of an utopia/dystopia imagination of how these might change the workplace for better or for worse. Proponents of health-tracking technologies in the workplace believe the trackers offer a way for companies to support their employees towards healthier habits, with positive consequences for both workplace and employees (Lingg, Leone, Spaulding, & B'Far, 2014). Critics are concerned that this is yet another step towards an Orwellian workplace, with consequences to work/life balance, and question data security and general privacy

concerns (Christophersen, Langhoff, & Bjørn, 2015; Dredge, 2015; Lingg et al., 2014).

Of the few studies that have been conducted on health tracking in the workplace, research working with passive sensing of the workplace or activity tracking in combination with semi-structured interviews or surveys have made important steps in a vision of Quantified Self (QS) workplace systems (Lingg et al., 2014; Mathur et al., 2015). Mathur et al., however, argue that studies relying fully on ethnographic methods "suffer from biased results", be that due to participants changing behavior underway or providing socially desirable responses (2015). Reliance on collection of traces as the obvious unobtrusive way to gain insight into technology use practices has occasionally lead researchers, such as Mathur et al., to argue that such approaches do not suffer from biases inherent in self-report or observational studies with researchers present. Sensor-based studies of course, are biased in their own way – privileging only the information that can be measured as useful for gaining insight and limiting participation to individuals who are willing to accept a level of instrumentation of their environments (and themselves) for the duration of the study.

Observational studies have merit in workplaces where not everyone is willing to use sensing technologies and when we seek to ascertain the impact such technologies might have on work practices. The presence of any researcher in an environment, however, calls attention to the technologies under study, thus of course, biasing data collection. This kind of bias and its implications are rarely discussed in CSCW research. We do so by drawing on an empirical observational study conducted in a Danish workplace.

“Tæl Skridt”-campaign

The “Tæl Skridt” campaign is a bi-annual step-counting campaign in Denmark, and as such serves as an example of introducing health-tracking technology in the workplace. Participants sign up in teams of minimum three colleagues, and aim to walk at least 10.000 steps for 11 out of the 21 days of the campaign. Doing so enters the team in a lottery with a chance to win 50,000 DKK (app. 7,200 USD). Participation costs 50DKK (app. 7,2 USD), a fee some companies choose to cover. In the spring campaign round of 2015 18,112 people participated across Denmark¹.

In the spring of 2015 the first author conducted observational studies of employee participation in this step-counting campaign in one department of a Danish company. Some of the employees had participated in the campaign in previous years. The author sat at a desk in the open office of the department, joining the everyday life of the employees, official department meetings and casual conversations at lunch. Findings from this study are forthcoming (Gorm & Shklovski, 2016). In order to gather more empirical material, and investigate health-tracking longitudinally, the first author returned in the fall of 2015 expecting to observe the next round of the step-counting campaign.

Meeting the field site (again)

In the fall of 2015 the first author contacted the same department to gain permission to conduct observations during the fall iteration of the step-counting campaign. As the first author presented her study at a department meeting a week before the campaign, she was

interrupted by a concerned-looking employee; “But we only participate in the spring!”. Hence we discovered that the head of the department who had given the permission was unaware that employees had a tradition of only participating in the spring round of the competition. This caused some disturbance among the employees. Here was a researcher, interested in their participation in the step-counting campaign, yet they had not intended to participate in this round. One employee, who had been an enthusiastic participant in the previous campaign, was eager to resolve the situation, and said she was willing to put everything in motion for them to participate in the campaign. However, instead of participating in the national campaign, with an online interface, employees chose to develop their own campaign, noting their steps in an excel sheet on a shared drive.

In contrast to the national campaign, participants were not split into separate teams, and there was to be paid no fee for participation. Instead, each week the person with the most steps received a small prize (a bar of chocolate), and one final winner would be found after three weeks. The employee who initiated this internal campaign explained that she knew that if she was to be responsible for people signing up to the national campaign, she had to be the one collecting the money from everyone, which would be bothersome. Creating an excel sheet was much easier and less time consuming. Despite the fact that this was initiated due to author interest, some of the participants (new employees) did not have experience with the official campaign and had no prior knowledge of the author, but signed up out of pure curiosity. In the end, ten employees signed up for the internal campaign.

¹ According to the campaign manager

Studying people who study themselves

Despite these initial confusions and our clear influence on the field site, we found that participant observation and follow-up interviews greatly benefited our understanding of the lived experience of health tracking in the workplace. Consider this quote, from a new employee, who had never participated before:

“No, well, it seems as if people just take a starting point in what they are already doing, and then they look for loopholes to make it all count as steps. Like, that’s what it seems like to me. Nobody is going around saying, I just went for an extra walk. Or... I haven’t experienced that at all” (Katrine, interview)

What this participant is explaining is that in the official step-counting campaign participants can calculate various kinds of activities (housework, gardening, etc.) into steps. This created some confusion amongst participants, as they had to figure out what to do in their internal campaign. This was never openly discussed, and confusion remained throughout the three weeks. The final step-counts entered in the excel-sheet are therefore not always “purely” steps, but an array of things converted into steps. If we had asked employees via surveys, for example, or had noted their step-counts before and during the campaign, we might easily have seen a rise in the amount of steps. But we would have not seen that this rise is, at last according to this participant, due to a “loophole”, and all of the work that goes in to doing this. Reaching a high step-count, to some, turns in to something of an art of converting other activities into steps. What we also found, however, is that these step counts are socially negotiated, meaning that participants spent a lot of

time figuring out how to count these various activities, and all the time negotiating this with their colleagues (Gorm & Shklovski, 2016).

Methodological considerations

“And if you needed this, then we are willing to help you” (Vibeke, informal conversation)

What was clear from our experience with presenting our study and showing interest in the step-counting campaign was that people were quite willing to disclose their experiences and thoughts. Some, as in the quote above, were even willing to join the three-week step-counting campaign in case it was helpful for the researcher in question. Methodologically, we as the authors of articles that will (hopefully) develop from these two observational rounds will have to deal with at least two issues. On the one hand, the main reason these employees organized this internal campaign was due to the authors’ interest in step-counting activities. Thus we had inadvertently biased the field-site by inspiring the employees to organize a step-counting campaign that otherwise would not have happened. We have thus actively intervened without intention. On the other hand, this created an opportunity to observe a different way step counting could happen in the workplace when it is not tied to and structured by a national health promotion campaign.

In some ways our empirical study can be compared to workplace experiments and system deployments, often conducted in HCI research. In these studies, a particular type of technology or a system is deployed in a specific setting; in this case it would be the workplace. In other words, the studied object is clearly introduced by the researchers. At the same time, we

had very little control of who signed up for participation. It is well known in research that self-selection of participants can create significant problems for the validity of the studies (Tufekci, 2014). In our study, however, no system was newly developed or deployed. Instead the participants utilized their own tools to organize the step-counting campaign. We had no influence on their choice of tools or their decision to sign up. Moreover, some employees signed up out of pure interest, with no prior knowledge of the authors work. While this particular data collection experience, from the purest point of view, can be interpreted as entirely biased by the author and self-selection, it never the less offers a unique set of empirical data.

As CSCW researchers we realized that by virtue of our presence and interest in the technology, we are dealing with a sort of hybrid study – a kind of unexpected natural experiment. Any long-term qualitative study is likely to have an impact on the research situation since a participant observer becomes part of the field-site and alters it with their presence. In ethnographic studies this is an accepted outcome balanced by significant reflection of the researcher on their own position in the course of data collection. Bias then is always present and must be reflected upon, but how do we reconcile our own influence and our conclusions about technology use often intended as a basis for design recommendations? What types of data collected from this research engagement should be used for analysis and insight? We hope to discuss these questions and more at the workshop, considering methodological as well as empirical challenges of studying health technologies in the workplace.

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