mHealth, society and me

- How does mHealth transform healthcare?
- Individualisation of Healthcare
- Digitally engaged Patients
- Who is the expert?
- How does mHealth affect me?
- Is mHealth turning us into cyborgs?

How does mHealth transform healthcare?

In healthcare, it has been common practice for doctors to prescribe medical devices/technologies to patients and for the costs to be covered by public or private health insurance companies.
However, this process is “de-institutionalised” by an increase in mHealth technology, which means that it is increasingly moving out of the area of the traditional established and robustly regulated healthcare system. Instead of being prescribed by doctors to their patients, users can easily purchase and utilise mHealth technologies outside of established healthcare structures. So far, a lot of these different technologies are free of monetary costs, and in many, quality is not controlled because they are categorised as “lifestyle” products and therefore do not need regulation.
That said, it is currently not easy to determine whether an app or a wearable is a “lifestyle product” that is freely marketed and advertised or whether it is a tested medical product that is subject to much stricter regulations (see Stories). Some Smartwatches, for example, have a built-in ECG function. Or some health apps can help to ‘diagnose’ diseases in individuals. This makes it difficult for users to distinguish between products that are reliable and controlled and those that are not. These developments are increasingly being recognised by actors in the traditional health care system, which is why these actors are also trying to play their part in the area of digital and mobile technology. For example, the draft of a new digitisation law in Germany (the Digitale Versorgung-Gesetz) mentions that apps recommended by doctors are to be included in the catalogue of services of public health insurance companies. According to the draft, doctors will be able to prescribe apps.

Individualisation of healthcare

Digitalisation and increased use of mHealth in different medical contexts involves a transformation process in medical care. In consequence, health and disease management is increasingly seen as a personal responsibility, with an increased expectation that the user will utilise mHealth for self-

optimisation. Ulrich Bröckling (2007) calls this the “entrepreneurial self.” [1] In the context of healthcare, this means that individuals are increasingly made responsible for managing their own health, similar to other aspects of life. These developments are welcomed by some, but also entail risks (see Ethics).

Digitally engaged patients

The use of mHealth technologies, such as sensors or apps, is increasingly becoming a part of disease management. For example, in the self-care for chronic illnesses such as Type 1 diabetes or Parkinsons, or for tracking symptoms or to manage medications.
This increased use of mHealth technologies in illness management also introduces new actors to the healthcare context, who have so far played a marginal or even no role in the healthcare system, for example, profit-oriented companies in the IT sector. They offer mHealth technologies that have the same or similar functions as traditional medical devices and collect similar data to that collected in the medical context, but are not necessarily bound to the same data security regulations as, for example, in the case of highly regulated medical devices. This raises questions, such as how these companies handle the data they collect (Privacy and Ethics). Many of these companies now also work with pharmaceutical companies, for example Dexcom and Fitbit work together in the context of diabetes technology [2].

Meanwhile, patients also have a new role in the healthcare system. The increase in mHealth technologies gives them opportunities to be more active in their own healthcare which relates back to the individualisation of healthcare, discussed above. They are more and more encouraged to use mHealth technologies for their self-care and to monitor illness-related aspects of their lives. Sociologist Deborah Lupton calls this more active role of patients through mHealth technologies: “digitally engaged patients” [3]. Due to the easier accessibility to medical knowledge, patients are no longer perceived as “passive recipients of care”2, but can more actively participate in shaping their healthcare. This development is accelerated by the possibility of patient-networking across traditional geographical borders, such as on social media.

Who is the expert?

While there was a relatively clear hierarchical relationship between physicians and patients in the traditional healthcare system, this relationship is being changed or even disrupted by mHealth, the internet and social media platforms. Physicians and other medically trained professionals are no longer the only or primary actors with medical knowledge. Whereas medical knowledge has traditionally been difficult to access and could have best been obtained by studying medicine or training in the medical field, it is now easier for many to gain access to complex and specialised medical information. In this context, sociologists have talked about ‘biomedicalisation’ [5], which means that biomedical knowledge is more and more present in everyday society. This is also accompanied by a shift in expertise. The knowledge individuals acquire in the process is woven together from various sources: records of bodily functions from tracking apps, diagnosis generated by diagnostic apps or experiences of other patients from online self-help groups. It could become increasingly necessary for physicians to learn to navigate this new form of patient knowledge and reflect on their role in digitized healthcare.

Especially in the context of chronic diseases, mHealth is very popular, as it enables patients to play an even more active role in the management of their disease. There are apps that remind users to take medication, disease side effects can be documented and some body values can already be measured independently using mHealth technologies, such as sensors.

How does mHealth affect me?

If you buy a wearable, for example, one with a step counting function, you probably assume that you will gain more knowledge and information about your own body, which will ultimately benefit your health. You now know the distance covered per day, or you can click to see a graph showing the distribution of weekly activity, including your heart rate. Through technically and digitally mediated visualizations, bodily functions that were previously not easily accessible to you in numbers can now be made visible and presented in the form of graphics and statistics. [6]

In the sociological study of mHealth, it is discussed that tracking apps do not only passively register values and make something already given (e.g. blood sugar values or steps taken) visible. A lot more deep-seated things are happening: by making the data visible, mHealth can also influence our thinking about our own body and our health and allow certain norms, values and behaviours to emerge.

For example, people can now understand their weekly steps in 'lines' and 'curves' when they use a fitness tracking app that displays them in a graphic. In times before mHealth made this possible, steps and movement patterns were physical and bodily experiences, but now they turn into something more: they can be "thought" in lines and curves as well. At the same time, this new way of thinking about one's own body and activity can also lead to acting differently than one would have done without mHealth.

EXAMPLES:

Smith and Vonthethoff (2015), for example, can show that Quantified Self movement [7] supporters in Australia attribute more reliability and a better understanding of their own body to the data generated by their tracking apps rather than their own physical sensations. [8]
Similarly, Kaiton Williams (2013) tested a weight loss app himself and was able to demonstrate using his own experience that the data not only seemed more reliable than how he was physically feeling, but that it also gained priority over his physical experiences. For example, when he saw that he consumed less protein that the app suggested, he felt weak. In his view, this feeling resulted from the information provided by the app rather than his own physical state. [9]

Is mHealth turning us into cyborgs?

We know cyborgs mainly from science fiction books and films as a hybrid of a living organism and machine. The name is composed of the terms "cybernetic" and "organism".
The image of a cyborg is often used as a metaphor for today's incorporation of digital technology into everyday life. One of the most prominent examples for using cyborgs to describe social processes comes from the work of Donna Haraway, a US based feminist scholar. To her, cyborgs are a fitting metaphor for illustrating the intertwining of humanity and technology:

> *"Hybrid of machine and organism, creatures of both social reality and fiction"* [10]

In the context of mHealth, sociologist Deborah Lupton sees the relationship between users and technology as a "digital cyborg assemblage". When you think of cyborgs, you might think of Inspector Gadget, whose backbone becomes a helicopter and whose hands can transform into all sorts of tools. But digital cyborg assemblages already emerge when people interact with digital technologies. In the context of medicine and health, one can think of a cyborg assemblage in the digital monitoring of body functions. In particular, mHealth expands the capabilities of the body by generating data on physical performance and performance limits. These data make it possible for users to enhance themselves in various ways (see Individualisation of Healthcare).

1. Bröckling, Ulrich (2007): Das unternehmerische Selbst. Soziologie einer Subjektivierungsform. Berlin: Suhrkamp Verlag. ↑
2. https://investor.fitbit.com/press/press-releases/press-release-details/2017/Fitbit-and-Dexcom-to-Develop-Continuous-Glucose-Monitoring-CGM-Experience-for-People-Living-with-Diabetes/default.aspx ↑
3. Lupton, Deborah (2013):The digitally engaged patient: Self-monitoring and self-care in the digital health era. Social Theory & Health 11, 256–270. ↑
4. Lewis, D. and Leibrand, S. (2016) Real-World Use of Open Source Artificial Pancreas Systems, Journal of Diabetes Science and Technology 2016, 10, 6, 1411 ↑
5. Clarke, Adele; Shim, Janet K.; Mamo, Laura; Fosket, Jennifer Ruth; Fishman, Jennifer R. (2003): Biomedicalization: Technoscientific Transformations of Health, Illness, and U.S. Biomedicine. American Sociology Review 68 (2), S. 161-194. ↑
6. Lupton, Deborah (2013b): The digitally engaged patient. Self-monitoring and self-care in the digital health era. Social Theory & Health 11 (3), S.256-270. ↑
7. The Quantified Self Movement is, according to its own description, a group of users of various self-measuring devices and software. Its aim is to gain new and better insights into their bodies through quantification http://quantifiedself.com/about latest access: 13.01.2018.↑
8. Smith, Gavin; Vonthethoff, Ben (2015): Health by numbers? Exploring the practice and experience of datafied health. Health Sociology Review 26 (1), S.6-21.↑
9. Williams, Kaiton (2013): The weight of things lost: self-knowledge and personal informatics. Paris: CHI 2013.↑
10. Haraway, Donna (1995): Ein Manifest für Cyborgs. Feminismus im Streit mit den Technowissenschaften. In: Hammer, Carmen/Stieß, Immanuel (Hrsg.): Die Neuerfindung der Natur.↑