

Digital Health & Computer-Tailoring

The launch of an EHPS Special Interest Group

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Given the Internet's 24/7 accessibility and availability independent of people's location, it comes as no surprise that the Internet is presently the most frequently consulted medium when people need health-related information (van de Belt et al., 2013). As a consequence, and given their potentially high scalability, digital health interventions have mushroomed in popularity. We define *Digital Health* as the use of digital information and communication technologies to improve health and increase the chances of sustainable healthcare for all. As such, digital health interventions include but are not limited to eHealth, mobile health (mHealth), telemedicine as well as wearable devices (e.g. activity trackers).

As the Internet enables the provision of instant feedback based on the information provided by an individual, many of these digital health interventions include computer-tailoring strategies. Computer-tailoring can best be described as the programmed delivery of intervention materials adjusted based on the specific characteristics of an individual person (de Vries & Brug, 1999). In contrast to static online health communication (e.g. health information websites), tailored interventions provide individuals only with information that is relevant to them and their situation. As a result, and in line with the Elaboration Likelihood Model (Cacioppo & Petty,

1984), this information is more likely to be considered as personally relevant and, consequently, to be read. This is expected to lead to an increased desire to use and keep using the intervention, more user engagement, more in-depth processing of information, greater recall and more likely initiation or continuation of the desired health behaviour change (Cacioppo & Petty, 1984; Kreuter, Farrell, Olevitch, & Brennan, 1999; Nikoloudakis et al., 2018; Ritterband, Thorndike, Cox, Kovatchev, & Gonder-Frederick, 2009). Computer-tailored digital health interventions have repeatedly been shown to be able to (cost) effectively improve health behaviour (Cheung, Wijnen, & de Vries, 2017; Lustria et al., 2013; Schulz et al., 2014). Yet, despite the generally positive outcomes, effect sizes tend to be only small to medium (Lustria et al., 2013) – as is the case for digital health interventions more generally.

The positive results in terms of (cost) effectiveness suggest that digital health interventions should be implemented on a large scale. As a result, efforts are presently undertaken to apply computer-tailoring methodology also to intermediate target groups (e.g. the health professional context (de Ruijter, Candel, Smit, de Vries, & Hoving, 2018)) and intermediate behaviours (e.g. by focusing on smoking cessation support tool uptake instead of smoking cessation). Nonetheless, the limited size of the effects found suggests that there is also still room for improvement. Therefore, as also described in a previous call for action in this journal (Smit, Linn, & van Weert, 2015), the exploration and testing of innovate digital health behaviour change strategies, e.g. message frame tailoring and

tailoring of delivery modes, remains a priority for research. At the same time, it remains a research priority to continue to build the science of tailoring (Harrington & Noar, 2012). Therefore, it is important to clearly specify the tailoring processes which are applied in the development of digital interventions. First and foremost, by reporting openly on 1) what specific tailoring inputs are captured in assessments, e.g. the behavioural characteristics or assumed behavioural determinants assessed, 2) on what theoretical basis they are included, 3) when these assessments occur (e.g. dynamic – over the course of an intervention – or static, i.e. at baseline), 4) what specific tailoring strategies are used, as well as 5) what outputs are considered (Ryan, Dockray, & Linehan, 2019). Lastly, new technologies offer new possibilities that warrant further exploration and testing, such as artificial intelligence that can potentially be used to enable data-driven tailoring and build recommender systems (Cheung, Durusu, Sui, & de Vries, n.d.; Hors-Fraile et al., 2018).

To join forces in this respect, we discussed the idea of launching an EHPS Special Interest Group (SIG) on the subject of computer-tailoring during the 2017 EHPS conference held in Padova, Italy. Before launching this SIG, however, we conducted a survey amongst EHPS members with interest in the subject (N=38). The results from this survey showed a desire to raise awareness of the method of tailoring as digital health gains traction, while also focusing on digital health more broadly. To reflect this, the name of *'EHPS Special Interest Group on Digital Health & Computer-Tailoring'* was chosen. Furthermore, the majority of survey participants (63%) agreed that the SIG would need to focus on both mobile phone-based (mHealth, e.g. apps and text messaging) and web-based (eHealth) digital health interventions, and on both more traditional web 1.0 features (e.g. self-monitoring and goal setting tools, forums, educational info) and newer web 2.0 features (e.g. social networking, blogs, wiki's, google-maps mash-ups). In terms of the

SIG's activities, survey participants mentioned that next to distributing a regular newsletter – which was mentioned by 34% of participants as an important activity to be undertaken – the SIG should:

- 1) create collaborative networks (66%);
- 2) organize one or more symposia and/or round tables at the annual EHPS meeting (50%);
- 3) set up international studies through joint applications for grants (50%);
- 4) write joint papers on specific topics (50%);
- 5) organize special issues in (one of the) journals of the EHPS, such as the *European Health Psychologist* (47%).

Based on the survey results, and in consultation with the digital health and computer-tailoring experts mentioned in the acknowledgements, the SIG's mission statement has been formulated as follows: *"To build a community of interested EHPS members to advance digital health and computer-tailoring research and to provide a forum to discuss new evidence, underlying mechanisms and specific components of digital health interventions that may lead to enhanced behavioural outcomes"*.

During the next EHPS conference, to be held in Dubrovnik (Croatia) from September 3-7 2019, the EHPS Special Interest Group on Digital Health & Computer-Tailoring will be launched officially during a lunch meeting on Thursday September 5, from 13.00-14.00 in room Elafiti 4. If you wish to participate in this lunch meeting, please sign up through <https://bit.ly/2Y9TrB0> no later than August 28, 2019. In addition, we have organized a symposium entitled *'Tailoring digital health interventions: different strategies, different effects?'*, taking place on Friday September 6, from 11.30-13.00 in room Elafiti 3. See for up-to-date details also the final conference program. On a last note, we would like to mention that the EHPS is also supporting the Open Digital Health initiative. In line with our SIG's mission and vision, this initiative aims to survey and list descriptions of existing digital health tools – more information

about the Open Digital Health initiative can be found here: <https://www.opendigitalhealth.org>.

We would like to warmly invite all those interested in the subject of digital health and/or computer-tailoring to attend the lunch meeting and symposium, visit the Open Digital Health website and jointly take the first steps that need to be taken to achieve our mission.

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EHPS Special Interest Group on Digital Health & Computer-Tailoring

Please sign up no later than August 28, 2019.

Official Launch



Thursday September 5,
from 13.00-14.00

Hotel Valamar, room Elafiti 4