
Mental Wellbeing: Future Agenda Drawing from Design, HCI and Big Data

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Abstract

Most HCI work on the exploration and support of mental wellbeing involves mobiles, sensors, and various on-line systems which focus on tracking users. However, adoption of, and adherence to such systems is not ideal. Are there innovative ways to better design for mental wellbeing? A promising novel approach is to encourage changes to behavior through the use of tailored feedback informed by machine learning algorithms applied to large sets of use data. This one day workshop aims to explore novel ways to actively engage participants through interactive systems, with an overall aim to shape the research agenda of future HCI work on mental wellbeing. The workshop is designed in an innovative format offering a mixture of traditional presentation, hands-on design and future-thinking activities. The workshop brings together both practitioners and HCI researchers from across a range areas addressing mental wellbeing.

Author Keywords

Emotional wellbeing; design; big data; affective interaction; future thinking; researchers; practitioners.

CSS Concepts

- Human-centered computing ~Human computer interaction ~Interaction design

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Background and Motivation

The last two decades have been marked by increasing HCI work on emotional wellbeing and mental health [15]. Several research areas have focused on this such as web-based support for adherence to psychotherapeutic practice through self-help internet sites, computerized cognitive behavioral therapy [4] or virtual reality systems, physiological monitoring of emotions to support reflection, such as Affective Diary [20], Affective Health [14] or Echo [10], physiological monitoring for diagnosing affective disorders [1][6][7], mobile or wearable technologies to support emotion self-regulation [5][8][9][12][16], or work on dying and death [18] or grief therapy [17][19]. Despite this rich body of work, the diverse research areas outlined above have evolved rather independently and crosscutting between them is rather limited.

In addition, the adoption of, and adherence to such systems is not ideal [11], so a key question is: are there innovative ways to better design for mental wellbeing? As shown by cognitive behavior therapy and lately new treatment methods such as behavior activation and compassion theory, it might be more important to support and encourage new ways of behaving. A promising and less explored approach is the leverage of data that the use of such systems may capture. Emerging work in this space has looked into the use of machine learning to analyze messages from clinical supporters within online interventions, with the aim of helping to clinicians to provide personalized, tailored positive feedback which increases the effectiveness of the digital interventions [2]. HCI work on affective health has also highlighted the increased ethical concerns regarding the sensitivity of user data [15] and their negative impact on user groups with

increased vulnerability [3]. This begs the question of how the benefits of big data for the personalization of digital interventions for mental health may be leveraged, while accounting for the ethical challenges that such approach may pose. The ways in which this data may be leveraged range from supporting designers and mental health researchers in understanding usage of interventions, and factors influencing engagement and dropout, predicting outcomes for people receiving treatment, which may enable clinicians to alter the intervention (e.g. providing more intensive support, or changing to another form of treatment), through to systems in which intervention delivery is responsive to the individual user.

This interdisciplinary workshop aims to explore this question by bringing together researchers, designers, and developers of mental wellbeing technologies from both academia and industry.

Workshop Theme and Goals

This workshop aims to advance the HCI research agenda on mental health by taking stock of where we are on these rich and diverse but rather independent strands, and how we can learn from each of them and potentially integrate them to support the development for a more cohesive future work. In particular, we will look across these research areas to identify:

- How emotional wellbeing and mental health is tracked, assessed and facilitated by current mental wellbeing technologies
- What technologies and approaches support each of the above three activities
- What are the challenges of mental wellbeing technologies

- What are the challenges and opportunities of big data for mental wellbeing technologies
- In particular, what are the ethics challenges of leveraging big data approaches for the design of mental wellbeing technologies
- Which user groups we need to engage with for greater social impact
- What are the key strategic research directions to leverage big data for mental wellbeing technologies, and how can we design a roadmap for tackling them.

The workshop will be run by academia and industry experts with strong interest in mental wellbeing through activities targeting the generation of envisaged scenarios about future mental wellbeing challenges and the limitations of how they are addressed by current technologies. These will be coupled with future-oriented design thinking activities to address these scenarios through ethically-designed, innovative future wellbeing technologies.

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