
Mental Health Resources: Reflection on AffecTech Platform

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Abstract

This position paper presents an overview of the mental health resources developed within the AffecTech, an interdisciplinary European Commission-funded project supporting the work of 15 PhD students in the space of digital interventions for affective health. It describes different types of targeted resources highlighting both traditional and innovative ones, our approach to developing them, and the challenges and opportunities that our work has uncovered.

Author Keywords

Affective health; wearables; mindfulness; mobile apps; virtual reality; somadesign; ethics.

CSS Concepts

- Human-centered computing ~Human computer interaction (HCI).

Introduction

The prevalence of mental ill health and its associated costs has fostered a growing interest in both academia and industry towards digital interventions. While some HCI research has focused broadly on emotional wellbeing [15][24][33] or on specific topics such as end of life [30] or grief [31][32], other strand has looked specifically at affective disorders such as bipolar condition [2], depression [9] or stress [11][12][17], with a predominant focus on mobile or wearable technologies [9][10][13][14][19][26]. While most such

systems leverage tracking or monitoring, the focus on health literacy such as training emotion regulation has been less explored [28]. This gap is specifically target by our AffectTech (www.affecttech.org) project focusing on personal technologies for affective health and brings together researchers from three disciplines: HCI, Biomedical Engineering, and Clinical Psychology. The project explores how emotion regulation strategies can be integrated in digital interventions to support people living with depression, anxiety or bipolar condition.

AffectTech Resources for Mental Health

The project is in its fourth and last year and its key highlights include algorithms for processing biosignals and models for heart rate variability, as well as design of apps for addressing memory impairment in depression [20] and for momentary mood assessment based on facial expressions [5][35]. Besides the more traditional apps, AffectTech prototypes also include innovative tangible such as EEG-based ones for mindfulness training [22], and wearable systems leveraging smart materials for actuating the real time changes in physiological arousal [34]. Not at least, we also explored the feasibility of ubiquitous technologies such as ambient displays for mood regulation of people living with dementia [29]. Future work can further explore the integration of personal technologies with virtual reality [26] or ambient ones such as public displays [7][8][16]. Our overall approach has been sensitively tailored to the specific needs of people living with mental ill health [6][18]. In this respect we focused on underpinning ethics principles of digital interventions for mental health, highlighting the need for its stronger emphasis in HCI research [25], as well as in the development of commercial mobile apps [3][4][21].

Design Challenges and Opportunities

We identified three key design challenges of working in this space: the materiality of biodata, access to lived experience of mental ill health, and integration of our prototypes. To better support the design of digital interventions for mental health and to address the limited materiality of biodata, we focused on its ambiguity [23] and the role of designer's body within the somaesthetics design approach [1][14]. Here we leveraged actuators for materializing captured physiological data and explored how designers understand and work with such data. Empathic understanding of the lived experiences of depression or anxiety is key to sensitive design. Here we started to explore novel design methods that can bring fresh, first person perspective of such lived experiences. Finally, we are exploring how the range of prototypes that we developed can be seamlessly integrated into a platform, to support users accessing the one the better address their current needs.

Through this position paper, we could contribute to the workshop with a discussion around the challenges briefly mentioned above, and alternative, innovative ways of addressing them. In addition, the tension between the benefits of leveraging machine learning and big data algorithms for the design of digital interventions for mental health, and the associated ethical risks to users' autonomy and privacy is another key area worth exploring.

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