

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA16102

STSM title: Effective and enjoyable: how human computer interaction could contribute to successful App-delivered mental health intervention for young people

STSM start and end date: 06/01/2019 to 06/02/2019

Grantee name: Sara Carletto

PURPOSE OF THE STSM:

(max.200 words)

The aim of the STSM was to collaborate with the team of Prof. Sousa to gain more knowledge about the development of human-computer interfaces that could contribute to expand the field of mental health interventions for young people.

Specific aims were to:

- initiate an interdisciplinary collaboration between mental health professionals and human-computer interaction experts in order to contribute to an advancement of knowledge of what makes technologies work for people and may greatly improve the effectiveness of technologies for e-mental health.
- review the literature (if possible by conducting a systematic review) about e-mental health interventions specifically developed for young people with mental disorders;
- create a fertile collaboration that can also continue over time, also aimed at participating in future calls in other areas of mental health.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

(max.500 words)

During my one-month STSM I had the opportunity to take part in various training and projects:

- I attended the Winter school in Experimental interaction design (duration of the course: two weeks). This winter school is aimed at introducing core design and interaction design topics for designing wearables for health and wellbeing. During this training I had the opportunity to actively experiment myself in the full cycle of the interaction design and design process, starting from the development of an idea up to the creation of a prototype of a digital artifact. During the first week, we attended preliminary lessons on interaction design process, physiological computing, and designing interaction scenarios. Then we were divided in small groups and we worked on designing a low-fidelity prototype for a wearable device that could be used for purpose of health and well-being improvement. In the second week, we moved to the hardware lab, where under the guidance of a tutor we implemented our project in form of a high-fidelity prototype using an Arduino-based controller and different sensors and actuators. During this experience I had also the opportunity to meet and collaborate with a multidisciplinary team consisting of experts in Interaction Design, Physiology, Physiological Computing, Smart Textile, and Arduino programming engineers.

- I attended the Information and Communications Technology (ICT) PhD student Winter Camp, organized by the School of Digital Technologies of Tallinn University (duration: two days). The program of this school included workshops, research presentations, and note speaker sessions. In particular, among these, I had the opportunity to participate in an ongoing demo presentations of iMotions, a software platform that integrates and synchronizes different biosensors (e.g. eye tracking, facial expression analysis, EEG, GSR, EMG, ECG and Surveys) in one unified platform, which is increasingly used by researchers to assess behavioral, cognitive and emotional responses in different research areas (e.g. neuroscience, psychology, human computer interaction, etc).

- I met and exchanged knowlegde with prof. Sousa's team. I visited the Interaction Design Lab, which targets a wide range of topics, from design methods to psychometric and biometric research on user experience. In particular I had the opportunity to use the eye-tacker and EEG.

- I started to collaborate with TREATMe WG4 in their project of a systematic review to examine approaches used for engaging children and young people in digital psychotherapy interventions (protocol registered on PROSPERO CRD42018094815), with the following research questions: 1) what approaches are used for engaging children and young people with mental health problems in digital interventions?; 2) what are the barriers and facilitators to engaging children and young people with mental health problems in digital health interventions?; 3) how recruitment and retention rates vary in digital intervention research involving children and young people with mental health problems?

Within this project I started to collaborate in the screening of the abstracts of the studies retrieved from the electronic search on databases and from the hand searching in order to include also grey literature.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

The main results obtained during this STSM are:

- having participate in a hands-on experience, that allowed me to gain more knowledge on the full process of interaction design and on usability and users'experience concepts;
- having shared knowledge in the interplay between psychology and human-computer interaction, useful for the evaluation of factors that encourage users'engagement in the use of digital artifacts;
- having laid the foundations for a fertile collaboration with different experts on interaction design, human-computer interaction and physiological computing with whom I have shared ideas for future projects;
- having started a collaboration in the systematic review project of TREATme WG4.

FUTURE COLLABORATIONS (if applicable)

- ongoing collaboration with TREATme WG4 for the systematic review;
- keep in touch with Tallinn University School of Digital Techology team for collaborations in current and future projects with the University of Turin (e.g. interplay between users emotions and trust in technology; biofeedback for e-mindfulness interventions; embodied conversational agents for communication training with medical doctors).