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eHealth and Wellbeing: new trends and innovative solutions from the Digital Media and Interaction field

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It is our great pleasure to release this Special Issue on “eHealth and Wellbeing” of the Journal of Digital Media & Interaction. EHealth and Wellbeing are emergent and cross-domain topics, which have gained particular attention during the current pandemic scenario. Describing projects on these areas, which operate in the Digital Media and Interaction field, and discussing their scientific contribution is thus, nowadays, of major importance.

An enriched vision of the role of Digital Media in these areas can be deepened with the contribution of this Special Issue that aims at presenting, from a technological, communicational and societal perspective, innovative digital media solutions to improve health, wellbeing, quality-of-life, accessibility and active ageing, acknowledging the role of digital inclusion and the diversity of populations and health conditions that frame this topic.

EHealth applications may expand access to health services, improve self-management and enable the creation of health promotion campaigns. In addition, eHealth can increase shared decision-making and contribute to creating new interaction dynamics, empowering patients, caregivers and health professionals.

New services and technologies are constantly being presented: eHealth is expanding from the traditional solutions (telemedicine, web-based services, and Electronic Health Records) to new contexts: mobile, games, audio-visual, educational, robotics, physical computing, among others. Additionally, novel fields are now being explored involving a holist approach to health, in which wellbeing and quality of life are also important dimensions to consider.

The term “eHealth” has been used since the year 2000 and is usually associated to the Eysenbach speech delivered in 2001 at the “UNESCO Conference of the International Council for Global Health Progress: Global health equity - Medical progress & quality of life in the XXIst century”. According to an editorial that was published shortly after Eysenbach’s speech, this term “characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide” (Eysenbach, 2001, s/p). Besides the “electronic” sense, and according to Eysenbach, the “e” of “eHealth” stands for other ten “e’s” dimensions: efficiency (eHealth products and services should increase efficiency and decrease costs, enhancing communication and better involving patients); enhancing quality of

care; evidence based (eHealth interventions should be rigorously evaluated); empowerment (of patients/consumers, as eHealth opens new opportunities for patient-centred medicine); encouragement (of a new relationship and partnership between patients and health professionals, promoting shared decisions); education (both of physicians through continuous medical educational and of patients/consumers – namely in what concerns tailored preventive information); enabling (of communication and information exchange); extending (the scope of health care both in a geographical sense and in a conceptual sense); ethics (as eHealth interventions poses new challenges and threats, particularly regarding informed consent, privacy and equity issues); and equity (although being a promise of most of the eHealth interventions, the still existent digital divide of those that do not have the resources or skills to access and use these solutions are naturally excluded). The dimensions "easy-to-use", "entertaining" and "exciting" were after added.

More recently, the term has evolved considering the mobile scenario and the form "m-health" is currently largely used and different products and applications are being developed under the mobile scenario. Despite not being a new concept, the m-health concept has evolved recently considering last years' diverse domains of application. According to the Global Observatory for eHealth of the World Health Organization (World Health Organization, 2011), mHealth is a medical and public health practice supported by mobile devices (mobile phones, patient monitoring devices and other wireless devices), involving the use and capitalization of mobile phone's voice and short messaging services, as well as other functionalities and applications that can be used to explore six main areas that can offer different functionalities: communication between individuals and health services (health call centres/Health care telephone help lines, emergency toll-free telephone services); communication between health services and individuals (treatment compliance, appointment reminders, community mobilization, awareness raising over health issues); consultation between health care professionals (mobile telemedicine); intersectoral communication in emergencies (emergencies); health monitoring and surveillance (mobile surveys, surveillance, patient monitoring); access to information for health care professionals at point of care (information and decision support systems, patient records) (World Health Organization, 2011). Literature reviews show the impact and effectiveness of mHealth interventions in different health conditions (Marcolino et al., 2018).

Despite the tremendous evolution that had occurred both on eHealth and mHealth scenarios, these two terms remain consensual and are commonly used both in the academic and industry sets. Less consensus is found in other terms, namely in the ones regarding the "patient-centred care approach" which the literature shows that has been lately anchored in very different terms (patient engagement, patient activation, patient empowerment, patient involvement, patient adherence, patient compliance or patient participation). In 2014, Menichetti et al. presented a bibliometric analysis of the use of these terms, observing 58987 papers from 2002 to 2013 and verifying that the role of patients is changing and that the term "patient engagement" appears promising. In 2016, Barello et al. presented a systematic review, precisely on this concept ("patient engagement") and found that the majority of the eleven analysed studies only explore partial dimensions of this concept, which calls for the need of a more holist view of the patient in eHealth studies. Patient engagement must be seen as a complex and multi-faceted experience that should not be reduced to the mere assessment of the patient's

ability to adhere to medical prescriptions. Barello et al state that this concept is characterized by a behavioural dimension (what the patient does), a cognitive dimension (what the patient thinks and knows), and an emotional dimension (what the patient feels). The eleven studies under analysis by this systematic review failed to address all these three dimensions in a holistic approach and assessed six main variables: access to eHealth system; adherence to treatment/medication; abilities in the use of the eHealth system; health management habits; knowledge of the disease; and depressive symptoms/emotional distress. More variables need to be considered to give answer to the challenge of viewing patient engagement according to all the three above dimensions, namely developing, as suggested by Barrelo et al (2016), tailored interventions tuned to patients' needs and priorities in each domain and at each phase of their health experiences.

This unified view is of major importance, as stated by Beck & Bredemeier (2016) that discuss the need to develop more integrative approaches, considering clinical cognitive, biological and evolutionary perspectives. Indeed, there are different spheres of experience when designing for wellbeing in digital experience (Peter et al 2018). According to these authors, there are different dimensions that need to be addressed when developing research on eHealth and User Experience, namely when engagement and motivation are being measured. Spheres of experience as Adoption, Interface, Tasks, Behavior, Life and Society must be considered to understand the real impact of a digital solution on the experience and wellbeing of a e-health end-user.

This multi-level approach can be observed when looking into the articles presented in this Special Issue: the nine manuscripts intersect different phases of the Research & Development cycle (Understand, Design, Prototype and Validate) and describe studies on different areas of knowledge and application.

The first two papers are literature reviews: the first on the theory of Uses and Gratifications when analyzing the search for self-care in digital environments, and the second on the application of technologies for old persons in rural environments.

The third article describes the development of an application to support health decision-making, while the fourth article discusses how social media, in particular Instagram, is being used to identify social relationships, interactions, actors and topics related to vegetarianism.

This Special Issue also integrates three articles that present studies related to specific health conditions: the fifth article presents the methodological design for evaluating a digital intervention aimed at health promotion in the area of depression; the sixth article discusses the impact of a computerized cognitive training on adults with moderate to severe depression; and the seventh article describes the redesign process of an application for cancer patients.

The two last papers are framed within the accessibility topic discussing the evaluation of applications for the qualification and employability of people with disabilities (paper eight) and the development of digital games to promote the play of children with cerebral palsy (paper nine).

Some of these papers are an extended version of the abstracts presented in the “1st students’ seminar on eHealth and Wellbeing”, that took place at the University of Aveiro in January of 2020 (Almeida, Oliveira e Santos, 2020), which shows the importance that this area has in the advanced education programs across different scientific domains. We are looking forward to continuing to contribute to this challenge and hope that this Special Issue can provide to the scientific community with innovative insights on how eHealth and wellbeing are being explored to create new trends on the digital media and interaction field.

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