

Many facets of digitalization in health and social care, eHealth in a lifecycle

In spite of the challenging pandemic time Finnish Society of Telemedicine and eHealth (FSTeH) organized the annual conference in October 2021, and changed the traditional conference format to a hybrid conference. In Finland domestic participants were on site in Oulu while international participants were connected via a videoconference link. With the support of International Society for Telemedicine and eHealth (ISfTeH) the conference gained a good visibility and the number of participants was satisfactory in these difficult times. This FinJeHeW issue is publishing selected peer-reviewed research papers from our conference. The conference themes were discussing digital health trends and solutions from European, Scandinavian and Finnish perspectives. Our knowledge was updated e.g. about assessment of digital applications and services, innovation activities, eHealth skills, citizen involvement and accessible health record portals for patients.

This time the high quality scientific papers presented in the conference revealed the widening borders of digitalization in health and social care. In Digital Health research domain, the topics include a wide range from basic research like intelligent data analytics in genetics to information management and sharing in real life networked health care environment. Not only technology and cybersecurity, but also competence building and empathy needed in discussion with those who are in danger to be socially excluded from the services are hot discussion topics. This issue reveals, that the new buzzword Digital Health is here to stay. Furthermore, digital social and health care is always multidisciplinary, and utilizes versatile digital solutions for the benefit of patients and clients.

Our conference offers a platform to all actors to show their contribution. In the flowing chapters we summarize the highlights of the peer review articles based on the scientific presentations in the conference poster.

The article ‘Distributed network and service architecture for future digital healthcare’ written by Harjula et al reveals how combined utilization of technologies in gathering patient data such as new medical imaging and monitoring instrumentation, and Internet of Medical Things, are available for medical use. The authors explore the potential of smart technologies for managing the complex tasks of connecting patients, personnel, hospital systems, electronic health records and medical instrumentation into a unified framework. Future aim is to demonstrate the feasibility of the edge-cloud continuum as the basic approach for offering efficient and secure distributed eHealth and eWelfare services, and provide an outlook for our future research.

Jääskelä et al discuss in their article ‘Digi-HTA, assessment framework for digital healthcare services: information security and data protection in health technology – initial experiences’ of the security aspects of medical devices, services and applications. The Digi-HTA toolkit for health technology assessment of novel digital solutions like mobile applications, robotics and artificial intelligence includes information security and data protection assessment domains. The result of the Digi-HTA evaluation process is a recommendation that decision-makers can use during the procurement process.

Keränen et al discussed regional patient information exchange between public primary and

hospital care in the article 'Regional health information exchange outside of the centralized national services for public health care in Finland: A national survey'. According to consecutive surveys the overall availability of regional health information exchange (RHIE) services not using the centralized national health information exchange (Kanta services) has changed little between years 2017-2020. Functional types of RHIE meaning the role, use and types of RHIE in hospital districts in Finland varies greatly in 2020. The survey presents three different types of non-Kanta RHIE (one-way, symmetrical, full symmetrical) in those hospital districts that did not already have a common patient information system for both primary and hospital care. Because of the variation, there is a need for region specific discussions and solutions to ensure the best patient information flow.

Rajamäki's article (in Finnish) clarifies ethical issues related to cybersecurity via four different frameworks: biomedical ethics, healthcare ethics, the core role of health information technology, and cybersecurity value clusters. The research focuses on value conflicts between different perspectives. It presents a conceptual model to support ethical decision-making.

Based on their study Rostami et al wrote the article 'Cancer Prediction Using Graph-based Gene Selection and Explainable Classifier'. They suggest an artificial intelligence decision system to help physicians with a simple and human-interpretable set of rules for transparent cancer prediction. The indicative results on five cancer datasets show that the created model can improve the accuracy of cancer prediction and reduce the computational complexity.

Jarva et al studied which aspects influence the digital competence development of health care professionals. The study collected information from two countries: Finland and Sweden. They

found that the development of digital health competence is related to digital health adoption, continuous learning, and how managers support their learning and give enough resources.

Kielo-Viljamaa evaluated health care testbed activities and their maturity in Finland and two other Nordic countries. The study revealed that the testbed activities mainly received resources via various projects. The testbed facilities were both real-life environments and test or simulation labs. Websites, social media, events, and networks were used in marketing and communications. The activities were mainly testing single products or services rather than continuous co-creation. The testbed organizations expressed a need for more structured and better coordinated processes and activities in order to ensure the management, quality and effectiveness of their testbed services.

The changing world of working life and digitalisation have increased the diversity of work and nowadays work is increasingly being done in virtual work communities. Nissinen et al showed in their study (in Finnish) the need for digitalized workplace survey as part of occupational health services. Although little progress has been made in the use of technology, it is essential to continue the digital development of the work process. Technology enables real-time observation of work, even in workplaces where occupational health professionals cannot be physically present.

Äijö et al studied in their article professionals' experiences related to eHealth and technology during the rehabilitation processes in the Northern Savonia region. The study found different categories related to technology and digitalisation experiences such as technical problems causing challenges in rehabilitation, inadequate information and patient data management, and poor or lacking data-applications, ICT-tools and systems. There is a need for more client-centric eHealth and rehabili-

tation processes, wherein the rehabilitation workers' needs are met – physically and psychosocially.

The articles in this special issue show, that the new umbrella term Digital Health encompasses a larger entity of research and application areas than eHealth used to have [1] Digital Health adds advanced computer sciences like genomics and artificial intelligence to the traditional eHealth toolbox. Based on the articles digitalisation in social and health care offers new solutions, and the present challenges make us constantly develop novel solutions for the better health and wellbeing.

References

[1] WHO regional office for Europe. Digital Health. WHO Europe; 2022 [cited 29.3.2022]. Available at: <https://www.euro.who.int/en/health-topics/Health-systems/digital-health>.

Pirkko Kouri, PhD, MSc, PHN, RN, Chair of the Scientific committee #eHealth2022 conference, Secretary of FSTeH; VicePresident of ISfTeH

Jarmo Reponen, MD, PhD, Professor of Practice, University of Oulu, President of the #eHealth2022 conference, Vice-president of FSTeH