

Bridging the gaps of social and health care with the means of eHealth and telemedicine

Social and health care are central services of the society, and their versatile development is constantly needed. The current challenge is the utilization of digital infrastructure. A significant amount of digital data exists, but unless it is connected, integrated, organized, and activated, social and health systems will struggle to use it for individualized, patient-centered healthcare and citizen centered welfare.

Fifty years ago, extensive health care development work was carried out in Finland, when the Primary Health Care Act came into force, and both primary and secondary care was offered as a public service. In more than 10 years, Finland has planned a new and extensive social and healthcare reform. In 2023, this new system, i.e. wellbeing services counties, finally started to operate. This means that we are introducing new service paths for patients and customers in these counties, service paths that cross the former boundaries of treatment units. New digital tools are adapted to patient care and at the same time citizens can take better care of their health and well-being.

The Finnish Society of Telemedicine and eHealth (FSTeH) shares its members' research information on the effects of digitalization in social and health care, also internationally. Last September, FSTeH organized its annual conference called “#eHealth2022: Digital Health - From Research to Applied Solutions” together with the co-organizer International Society for Telemedicine and eHealth (ISfTeH), and the conference gathered participants from all over the world.

In the conference sessions, practical examples and experiences were shared by more than 40 lecturers. The conference provided an opportunity for

practitioners, educators, and researchers to present their advances in telemedicine, eHealth or digital health technologies used in daily scenarios within healthcare environment, peoples' homes, or commuting. The conference themes in English sessions were as follows: Path to Digital Decade in EU; Integrated Healthcare in Nordic Health; New Health Apps and Services and What Are Our Choices as a Citizen; Digital Therapeutics and Digital Medicine; Practical Examples of Virtual Clinics; Promoting Sustainable Wellbeing. The scientific committee of FSTeH selected the most current and interesting among 41 abstracts and asked the authors to expand them into articles. This FinJeHeW issue is publishing these selected peer-reviewed research papers from our conference.

Särestöniemi et al showed in their paper “Remote diagnostics and monitoring using microwave technique – improving healthcare in rural areas and in exceptional situations” that microwaves could be exploited in three pre-diagnostics applications: 1) Detection of abnormalities in the brain with a helmet type of monitoring device, 2) Detection of breast cancer with a self-monitoring vest, 3) Detection of blood clots in leg with an antenna band. The technique is based on detecting differences in radio channel responses caused by the abnormalities having different dielectric properties than the surrounding tissues. The results of simulations and experimental measurements show that even small-sized abnormalities, e.g., tumors, can change radio channel characteristics in detectable level.

Ahonen et al. evaluated specialization education in their article “Students' Self Evaluated Competence at the Beginning of Studies in Digital Health and Social Care Service”, using students' self-assessments.

The students analysed their current competences and how important they think those competences were. The findings show that there is a need for specialisation education in multidisciplinary competences for developing digital health and social care services. The overall result is a self-assessment tool that can be used to assess the level of competences in different competence areas in specialisation education.

Kujansivu et al. described in their article “The use of digital tools by general practitioners in Finnish public health centres” how digitalisation manifests in Finnish primary care health centres in 2021. The aim was to find out which digital tools were used in health centres and how they were exploited. A health portal and various digital calculators were used daily. In remote communication with their patients, general practitioners preferred telephone calls over new tools. Attitudes towards eHealth were positive, but digital tools were not yet commonly used. The implementation of digital solutions still needs more effort.

Isosalo et al. proposed in their article “Local edge computing for radiological image reconstruction and computer-assisted detection: A feasibility study”, an approach based on a distributed edge-cloud computing platform. This novel solution was consisting of small-scale local edge nodes, edge servers with traditional cloud resources to perform data processing tasks in radiology. The results, obtained through real-life prototyping, indicate that it is possible and technically feasible to run both reconstruction and AI-assisted image analysis functions in a diagnostically acceptable computing time. Overall, the results are promising and help in developing future applications, e.g., in mobile imaging scenarios.

The new social and health strategy aims at improving coordination of activities in the social and health

sector. Simultaneously the strategy addresses more personalised care in which citizens are active and have their own initiative. The study by Vesa et al. about “Digital support model for North Karelia social and health Services’, Siun sote’s, clients (In Finnish: Siun soten asiakkaille annettavan digituen malli) investigated answers how digitalization makes it possible to provide better services to customers, promoting equality and health and welfare. Based on the study findings the Siun sote model was created. With the help of the model, it is possible to establish digital support as part of the high-quality services of the welfare area and to promote electronic social and healthcare transactions.

Among European countries Finland has leading position in the practical implementation of EU health data initiatives which benefits Finnish healthcare sector. Värri’s article “The impact of EU Digital Services Act and Digital Markets Act on Health Information Systems” deals with the European Parliament’s new legislation, the Digital Services Act (DSA) and Digital Markets Act (DMA). The purpose of this study is to find out what consequences these actions have on the development and use of health information systems. The study reveals that these acts have only minor consequences for the healthcare information systems sector as they are often not intermediary (hosting) services in the meaning of the DSA or gatekeepers in the meaning of the DMA. Apparently, no digital healthcare platform has yet reached such a large size or dominance in the EU that it falls within the scope of the DMA.

Hearing is a sense, which has a significant impact on a child’s development. Disorders connected with hearing can have impact in various forms and affect each area of life. Czajka reported in the article “The Stimulation of Polymodal Sensory Perception by Skarżyński (SPPS-S): comparison of stationary and

remote therapy results” that Skarzynski ‘s method called SPPS-S is a therapy for children with speech retardation, stuttering, attention deficit, reading and writing difficulties. SPPS-S therapy is dedicated to patients with central auditory processing disorders. The article compares the results between those who have completed the remote version of the method with patients performing therapy in a rehabilitation center. The quality of telerehabilitation interventions were maintained at the same level as in therapeutic work at the therapeutic center.

Silvennoinen’s article “Elderly People’s Perceptions of ICT’s Role in Alleviating Social Isolation During the COVID-19 Pandemic” discusses the life of elderly people. Increasing life expectancy and technological advances form a situation where technology is harnessed in the lives of the elderly in many ways. The social isolation increased the use of technology among the elderly. The results show that ICT mitigated the experience of social isolation in multiple ways. Furthermore, due to the pandemic, the interviewees’ digital skills improved and expanded.

The articles in this special issue show that the benefits of digital health are utilized across all age groups. Moreover, the research topics are more interdisciplinary than ever, and this kind of conferences are needed to increase mutual understanding. The full exploitation of the promise of digital health requires contribution from all stakeholders.

References

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