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QUALITATIVE RESEARCH: DETERMINANTS AND LONG-TERM IMPLICATIONS OF READINESS AND TRUST OF KOSOVO HEALTH PROFESSIONALS ON DIGITAL TECHNOLOGY

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A - Koncepcja i projekt badania, B - Gromadzenie i/lub zestawianie danych, C - Analiza i interpretacja danych, D - Napisanie artykułu, E - Krytyczne zrecenzowanie artykułu, F - Zatwierdzenie ostatecznej wersji artykułu

Abstract (in English):

Aim

The quality and accessibility of health care services in Kosovo during the last two decades has increased but at a very relatively slow pace. Many argue that digital technology could enhance the speed of transformation of health care industry. This study sheds additional light on the relationship between the level of trust and readiness of health professionals in digital technology, and long-term implications. We hypothesized that in order for the healthcare industry to gain the benefits derived from eHealth, there should be a relatively sufficient trust and readiness of health professionals in digital technology.

Material and methods

Authors decided about purposive sampling and snowball technique for identifying the most relevant respondents. Semi-structured interviews with ten health professionals allowed exploration of the distinct characteristics of the phenomena being researched as well as the context.

Results

Based on the interviews with diverse health professionals, factors such as education, professional training, youth, technology investments, and awareness about the advantages and risks of digital technology are contributing factors to the prevailing levels of trust and readiness of health professionals in implementing eHealth. Currently, in Kosovo there is a relatively low level of trust and readiness of health professionals in digital technology, requiring for a long-term multifaceted and coherent intervention.

Conclusions

Trust and readiness of health professionals on digital technology are indispensable factors for effective enhancement of the quality and accessibility of health services in Kosovo in terms of eHealth. In long term, Kosovo is prone to benefit from eHealth through strategic investments in technology and human capital.

Keywords: health professionals, long term implications, digital technology, trust, readiness.

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Kosovo Health Professionals' Readiness and Trust on eHealth

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Introduction

Transformations in healthcare towards digitalization and increased use of eHealth are considered a solution to current societal challenges (Lindberg, Lindberg, & Söderberg, 2017). The World Health Organization (WHO) defines eHealth as “the use of information and communication technology (ICT) for health” (World Health Organization, 2015). The demand for transformation when using eHealth requires both managers and employees to adapt to new needs and demands of future working life (van Reedt Dortland, Voordijk, & Dewulf, 2014). Digitalization can also reportedly enhance hospital performance by improving the quality of patient care (Murphy, 2009), reducing costs (Gastaldi & Corso, 2012), increasing cost-effectiveness, and enabling personalized patient care (Tresp et al., p2016). Also, the eHealth is considered a way to improve quality, capacity, efficiency and access to healthcare services and information (Hernandez, 2009), and thus holds the potential to promote health (Camerini & Schulz, 2012) and health equity (Dodson, Good, & Osborne, 2015; Neter & Brainin, 2012).

In parallel, many point out to the presumably downside of the technological advancement and application i.e., online patient portals, in the healthcare sector, referring to the issue of trust in the

physician-patient relationship. Already, it has been evidenced that to have a successful relationship of that type, trust is a decisive factor (Van Velsen, Flierman and Tabak, 2021). On one hand, trust in healthcare is found to be of a multidimensional nature, and on the other hand trust on caregiver directly affects the trust of patients on using the digital services, alluding for the need to explore the main determinants of the formers' trust on e-technologies (Van Velsen, Flierman and Tabak, 2021). The perceived ease of use, concerns of privacy and outcomes of treatment significantly effect one's readiness to utilize eHealth in terms of perceived utility and attitude towards it (Singh and Dev, 2021).

Trust in digital health services emerged as an important influence on the use of the latter. Bivariate statistical analysis of survey data showed that average trust in digital health services as the strongest predictor of use of digital health services. On average trust was shown to be higher among women and those with tertiary education, but lower among the relatively older ones (Foley, Freemad, Ward, Lawler, Osborne, & Fisher, 2020).

Moreover, several contextual factors related to healthcare professionals' competence in digitalization have been identified. For instance, digitalization is reportedly accepted by healthcare professionals when it is perceived to help patients and support workflow processes. In contrary, negative attitudes and experiences, along with a lack of competence, are found to lead to frustration and unwillingness to adopt new technologies (Murphy, 2010).

Additionally, the assumption of eHealth serving as a tool for health care providers to deliver better services to a way for individuals to be informed about their own health (Oh, Rizo, Enkin, & Jadad, 2005), builds on the premises that the knowledge, skills, and resources needed for people to use eHealth tools are well understood.

Many argue that it is important to recognize the impacts of competence in digitalization, as its lack among healthcare professionals not only hinders patient safety, but also increases the likelihood of errors (Salahuddin & Ismail, 2015). The global discourse regarding the development of nursing competencies in digital health has continued for over 15 years (Staggers N, Gassert CA, Curran C, 2002). Also, there is an inability of health professionals, especially nurses, to access digital technology in the workplace, while it is increasingly being recognized that its use has the potential to improve patient outcomes (Mather & Cummings, 2015). Participants described ease of access as a motivating factor for digital health services—they were available 24/7 and did not require an appointment or travel. A challenge to accessing digital health services included needing to have the right technology at the right time.

However, no consensus regarding agreed nursing informatics competencies to guide legitimate use of digital technology has been achieved (Australian College of Nursing, 2017). Discussion about the implementation of sanctioned access and use of digital technology is needed to ensure a consistent and sustained approach to developing capability of nurses within the higher education sector and within healthcare environments (Mather, & Cummings, 2019).

What is more, several studies have explored digital health equity. Social isolation and poor health are associated with a lower probability of internet use for health information (Renahy et al., 2008). Latulippe et al.'s systematic review (Latulippe et al., 2017) outlined that physical access to the internet has increased over time but effective use of digital health services is less likely for people with low incomes or who are members of a minority ethnic group, followed by low levels of education, age, literacy, gender and rurality. Still, advancing knowledge about e-health is needed and widely agreed to efficiently enhance the capacity of the health care system to mitigate the challenges of servicing a geographically disparate public/community (Department of Health, 2016).

Research question

The goal of this study is to determine the elements that lead to eHealth service trust, as well as the implications of eHealth service trust in terms of its utilization. Based on literature the purpose of this study is to examine the readiness and trust of health professionals on digital technology. This study aims to analyse the main determinants of application of eHealth and relevant implications. It addresses the following research questions: i) to what extent health professionals are ready and trust digitalization; and ii) what key advantages and disadvantages of digitalization in relation to the level readiness and trust of health professionals are.

Method

This study employs qualitative method to examine the readiness and trust of health professionals on digital technology in the case of Kosovo. The adopted research strategy may contribute for health research (Pathak et al., 2013). Due to the distinct characteristics of the researched phenomenon, namely the extent to which health professionals trust digital technology, the qualitative method is the most suitable given that it enables the researchers to: i) understand more deeply the context regards the topic studied; ii) understand the challenges that health professionals regard to adopting digital technology and; iii) and measure/explore relevant factors that might be challenging to do so statistically (Kryeziu and Coşkun, 2018; Kryeziu et al., 2021).

Sample

Given the aim of the study to analyse the readiness and trust of health professionals on the digital technology, the sample selection criteria was purposefully selected (Tongco, 2007). Besides, due to the very limited number of health professionals who could provide relevant insights pertinent to the research topic, we used the technique of snowball to be able to identify the most competent health professionals. Consequently, the sample consisted of health professionals of different occupations, gender, age, geographical region, and scientific disciplines, as seen on the table below.

Table 1: Demographics of the sample

Criterion	Sub-criterion	# of observations
Gender	Female	4
	Male	6
Occupation	Nurse	4
	Tach Lab	1
	Speech therapist	1
	Pharmacist	1
	Health Menager	1
	Physiotherapist	1
	Psychologist	1
	Age	20-29
	30-39	4
	40-49	3

Data

Due to the lack of data availability regarding our research topic, this study uses semi-structured interviews with health care professionals as the main source of evidence (Peters and Halcomb, 2015). The nature of questions during the interview were based on following logic: questions were open ended, the interviewer was neutral, and questions were clarified to the interviewee (Patton, 1987). The interview questions focused on knowledge, impressions, attitudes, advantages, and disadvantages pertinent to healthcare digitalization in the case and from the perspective of health professionals, respectively. We decided about this data collection method, given the fact that it enables researchers to explore the respective topic in relatively greater depth and detailed manners on one hand, and on the other hand, eventually identify new information and perspectives (Britten, 1995; Kryeziu and Coşkun, 2018; Alsaawi, 2014). The interviews were conducted during the month of May, June, and July 2021. The language of instructions and discussions was Albanian (the mother tongue of respondents and interviewers), where each interview lasted approximately an hour. The interviews were recorded and transcribed, whereas the quoted texts were translated by the authors.

Data Analysis and Coding Process

After the data were recorded and transcribed, the authors proceeded with the process of data analysis and coding as follows: i) independently read and coded all the interview, and defined categories as well as sub-categories; ii) compared and contrasted themes, categories, and sub-categories with those in the relevant literature aiming to identify new concepts potentially (Kryeziu et al., 2021); iii) compared and contrasted each other's codes, themes, categories and sub-categories, and the degree to which they corresponded with the direct quotes. Furthermore, during the step of coding, authors maximally avoided the analyses of interviewees' quotes relying on their own assumptions (Britten, 1995); iv) assigning each direct quote to corresponding category, sub-category, and main theme in the end. The data analysis process, coding and the definition of themes, categories, sub-categories is well defined in literature (Saldaña, 2009; Kırılmaz et al., 2015; Bağış et al., 2020; Patton, 2002.) This process of data analysis ensured the trustworthiness of the study, considering the relevant dimensions of trustworthiness and steps that researchers should abide to when conducting qualitative research (Tobin & Begley, 2004; Nowell et al., 2017; Coskun, 2017; Kryeziu et al., 2021).

Results

The direct quotes of interviews were grouped into five main categories, coded as shown in the table below.

In general, respondents have a feeling that digitalization of health services is still in its early stages of application/development in Kosovo and that more time and investment is needed. Registration of the patients, roentgen, vaccination data, laboratories analyses are some services that have been broadly digitized.

The majority of respondents agreed that digitalization can improve the quality and time and cost efficiency of health care services. Further, they show that digitalization represents a viable opportunity for improving the quality and easing the access to health services, and management of data of patient i.e., instant access to the complete health history of the patient including previous diagnoses and treatments. Besides, digitalization is perceived in parallel as a way that can significantly improve the communication between patients and health providers and the latter themselves. Lastly, another perceived benefit by

Table 2: Categories and direct quotes of interviews

Categories	Direct interviews quotes
Attitude toward digitalization	<p>“In my opinion, digitalization is very useful and very convenient for the health services and for the health system”</p> <p>“Technology is one of the most developed fields in recent years. In this way, along with technology, digitalization should be developed, since nothing is put before health services”</p> <p>“Digitalization of health services offers real opportunities to improve medical outcomes and achieve efficiency...I believe and think that health Institutions should move forward to digitalization, this is easier and more efficient approach to the patient”</p>
Digital health services, access to health services and information	<p>“Digitalization in our health service has not yet achieved enough. For a moment we use digitalization for registering and creating electronic archives and documents for patients”</p> <p>“Health services and results are more accurate via digitalization of the health services. But there will be a reduction of the staff”</p> <p>“There is an importance to archive and store and create the electronic Patients’ health data register with one click you can access to diagnoses and information for the patients in all health institutions of the country”</p>
Advantages and improvement of the health services via digitalization	<p>“Via digitalization of health services, there will be a change into the cost of health services, patient documentation will no longer be on paper, patient history will be much easier to find than before, there will be easier way to access from distance, there will be cheaper for patients, and there will be not discrimination for any patient, there will be a lack of corruption”</p> <p>“Undoubtedly, digitalization will facilitate the health services, because when we have access to the patient’s history then our work in obtaining the client’s anamnesis is easier. We can also easily access patients’ anamnesis history, especially for patients with chronic illness or for them that had surgery intervention, drug allergies”</p> <p>“Patients would be registered in the system and in addition this would decrease the time of work of health experts and physicians. Health care providers would have it easier to establish a more accurate diagnosis and easier access to patient history”</p> <p>“...Easy and safe access for patients...Better communication between doctors and patients. Better coordination between health staff, reducing inefficiency, increasing the quality of health services, reducing costs, real-time health information”</p>
Trust	<p>“The disadvantage of digitizing health services is the uncertainty of confidential data. Digital data is always at risk of malicious attacks”</p> <p>“For me, the important things are frequent and extensive training. Especially training on how to use digital tools and how to conduct the digital health services. Usually, the factors that will reduce trust to me are fear of frequent mistakes, during the time of using digital services, and the age of health experts, old age experts are resistant toward digitalization”</p> <p>“It is easier to access the patient’s anamnesis, it is easier for patients to schedule appointments”</p> <p>“Yes, most of my colleges believe in digitalization, in speed and efficiency of this services”</p>
Disadvantages	<p>“I do not have an experience to work with digital tools and to give a digital health service for patients, I need time and enough experience to give a digital health service into the level of expert”</p> <p>“There is a need for us in order to achieve the level of giving digital health services, there is a need for me and my colleges to adapt ourselves with digital tools, to achieve satisfied competencies for giving appropriate health services for population”</p> <p>“We do not have any competences for digital health services, we do not know the tools and digital instruments, we have a little experience with WEB.APP. We did not have any subject or module during our studies about digitalization and health digital services”</p>

health professionals is cost efficiency, and improvement of their productivity due to reduction of time and waste of resources need to perform their activities/tasks.

Nonetheless, interview outcomes show that digitalization is perceived to have certain limitations including but limited to the issue of privacy, confidentiality (the software can be hacked), and eventual shortages of labour.

Most of the respondents stated that they have no or very little experience with digital technologies used in health care, primarily due to very limited opportunities for life-long-learning trainings. Such need is further emphasized, by the outcome that directly links lack of trust of health professionals on digital technologies with their readiness to accept the transformation of their work setting into a digital one. Interviews show that majority of health professionals in Kosovo are ready for digitalization, but their main challenge is the lack of competencies to work and perform with digital tools and instruments. They emphasize that there is a need to further emphasize the topic of digitalization of health services at the regular education level.

Discussion

This study clearly shows that digitalization of health care services in Kosovo is still a “foreign” topic, despite fragmented and ad-hoc progress at the individual, department, or limited number of highly specialized private health care organisations. It also highlights the lack of clear understanding about the meaning of digitalization, implications, and necessary resources for it to be successfully implemented. In line with the literature, lack of opportunities for competence development is widely agreed to hinder trust and readiness of (aged) health professionals on eHealth, and therefore the capacity of the health care system in Kosovo to get digitized as well as deliver health care services.

Policy Implications

This study has several policy implications. First and foremost, it shows that in order to maximize the benefits of any initiative towards eHealth, a comprehensive, inclusive, and coherent approach is needed. Second, the phenomenon of digitalization of health care services needs to be tackled from a multi-faceted perspective, reflected into harmonized multiple relevant policies such as health, education, science, technology, and innovation, especially. Third, given the complex nature of eHealth and its dependency on numerous factors, in the short run, the priority areas of investments should be technology and establishment of student-run and client-centred digital practice centres that would be able to provide continuous professional trainings in collaboration with international and local experts of the health professionals. The later intervention is considered as a relatively more effective solution to the lack of relevant competences among the health professionals, given on one hand the fast pace of development of digital technologies and on the other hand the ineffective formal education to respond to the prevailing skills demand. This is perfectly in the prevailing pandemic of Covid-19, which has forced institutions at all levels to invest in new technologies to respond to clients' needs (Krasniqi et al., 2021).

Limitations and future research

The first limitation is the lack of secondary data available in the case of Kosovo. Second, limitation is the focus only on qualitative methods. Future suggestions might be to focus on mixed research method

to analyse readiness and trust of not only Kosovan health professionals but also health students on digital technology. Another future suggestion might be cross-country studies with regards the topic examined.

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