

SYSTEMATIC REVIEW

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Digital evolution and emerging inequalities in healthcare: a scoping review through the lens of knowledge management

Walter Vesperi^{1*}, Marzia Ventura², Concetta Lucia Cristofaro³ and Anna Maria Melina⁴

Abstract

Background The rapid diffusion of digital technologies throughout the healthcare system has created new opportunities to improve the use, efficiency and continuity of healthcare services. The academic debate has largely explored the implementation of digital tools and their impact on clinical processes and health outcomes. Despite the potential benefits, the digital evolution of the healthcare system could generate or aggravate existing inequalities. Although existing studies on digital technologies in healthcare are consolidated and numerous, little attention has been paid to the emergence of inequalities at individual, organisational and system levels. To fill this gap, this study aims to focus on how emerging inequalities are framed in the academic debate, with a focus on the socio-demographic, technological and organisational factors of digital evolution of the healthcare system. This study is based on a knowledge management perspective.

Methods This study uses a scoping review approach and is carried out following the PRISMA-ScR guidelines. The search was conducted without time limits on three databases, and only peer-reviewed articles in English were included. The review included qualitative, quantitative and mixed-methods studies. Three analysis domains were identified: sociodemographic factors, technological factors and health and healthcare-related factors. A bibliometric and co-occurrence analysis was also conducted using VOSviewer to visualise the structure of the research landscape and identify thematic clusters.

Results From 3,303 reviewed articles, 64 studies met the inclusion criteria. The results highlight that the digital evolution of the healthcare system can exacerbate the exposure of new social categories to inequalities. The factors of emerging inequalities in the digital evolution of healthcare have been identified and classified into three areas: (1) socio-demographic factors, (2) technological factors and (3) organisational and systemic factors. Three different historical periods have been identified within the academic debate. In fact, through in-depth analysis and bibliometric analysis, we have observed an increasing diversification of the topics.

Conclusion Digitalisation of healthcare can generate inequalities. Although research on this topic in the literature is scarce, a growing number of scholars have begun to address it. Future research should explore user experiences, the effectiveness of healthcare provider training, coordination mechanisms and public reimbursement policies to reduce inequalities.

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Keywords Digital health, Inequalities, Scoping review, Knowledge management, Accessibility, Digital transformation in healthcare, Organisational readiness, health literacy

Introduction

The rapid diffusion and capillarity of new digital technologies have affected all aspects of society and people's lives. Even the healthcare sector is susceptible to this digital evolution. New digital technologies are revolutionising the traditional delivery of healthcare; therefore, Healthcare organisations are having to redesign and adopt the processes of diagnosis, treatment, management and prevention of diseases. This trend in the healthcare sector and healthcare organisations has set in motion many studies in academic literature under the term "Digital Health" [1–3], which is a broad term widely used by scholars to describe a wide range of technologies, including mobile health (M-Health) and its applications, electronic health records (eMR), telemedicine, wearables, robotics and artificial intelligence (AI) [4–6]. It is a multidisciplinary and complex topic that has attracted the attention of numerous scholars with varied analytical and theoretical perspectives. Consequently, digital health can be defined in many different ways. In this study, the interpretation utilised is that of the World Health Organization (WHO), which states that digital health is the body of knowledge and practice associated with the development and use of digital technologies to improve health [7]. The focus of academic and practitioner debate on the digital evolution of healthcare has also led to a shift in attention to digital health tools, particularly wearables and M-health apps, now putting patients at the forefront.

The adoption and development of digital health systems offer the potential for widespread benefits through more efficient and targeted healthcare. Digital innovation and connectivity are integral to a modern and accessible healthcare system. These technologies have multiple uses, including disease detection, supporting patient treatment, ensuring continuity of care and managing a person's health information. However, a focus on digital approaches may inadvertently widen existing health inequalities if known inequalities in access, use and interaction with digital technologies are not considered and addressed. At the same time, however, there appears to be little academic debate around the emerging inequalities that this digital evolution has triggered.

Detecting and visualising emerging inequalities generated by digital evolution in the healthcare sector and understanding how organisations are redesigning their diagnosis, treatment and prevention processes to respond to new accessibility challenges is an essential step to support research development and the action of professionals. Therefore, this study aims to conduct a broad-spectrum analysis of scientific literature on

emerging inequalities provoked by digital innovations in healthcare.

Aims and contributions

The current academic debate has extensively focused on the impact that digital evolution has on organisations, including the healthcare system. At the same time, although digital technologies are widely adopted in healthcare systems, the emergence of inequalities through the lens of knowledge management remains poorly represented.

Given that the impact of digital evolution influences the structure and internal processes in healthcare organisation, with direct consequences on health outcomes, it becomes essential to understand how such transformations can generate or reinforce inequalities.

With this premise, this study aims to contribute to the academic debate by addressing this specific gap. For this reason, this study aims to understand how emerging inequalities related to the adoption of digital technologies in healthcare are addressed in the literature, with a focus on knowledge management perspectives.

To clarify these aspects, a review of the international academic literature was conducted regarding the following main research question:

RQ_(primary): How does digital evolution in healthcare contribute to the emergence of new inequalities and what impact does it have on knowledge management processes within healthcare organisations?

To offer the broadest understanding of the phenomenon, with a focus on knowledge management studies, three specific research questions were formulated:

RQ_(Specific)1: What impact do demographic and social factors (such as age, gender, education level and socioeconomic status) have on the access to and use of healthcare services?

RQ_(Specific)2: What impact do technological factors (such as access, adoption, integration and types of health technologies) have on the access to and use of healthcare services?

RQ_(Specific)3: What impact do health and healthcare factors (such as equity and access) have on the access to and use of health services?

Methods

To understand the emerging inequalities related to the adoption of digital technologies within healthcare systems and to analyse their impact on knowledge management processes within healthcare organisations, a literature review was established.

The academic contributions were identified through a qualitative research design [8, 9] of an exploratory nature based on the literature review [10–12]. The literature review was carried out following the Preferred Reporting Items for Systematic Reviews (PRISMA) extended for scoping reviews by Tricco et al. [13] and Arksey and O'Malley [14].

The systemic approach for the collection and analysis of scientific documents is illustrated below.

Search strategy and source identification

A search was performed in the academic literature as of March 28, 2025. Three major scientific and international databases were used (I) SCOPUS, (II) Web of Knowledge (WoS) and (III) PUBLMED. Furthermore, through a manual search (IV), additional documents identified by the authors deemed consistent with the research question were added. Using three different databases, based on different formulations of the search string, particular attention was paid to the homogenisation of the string.

The database search strategy was derived from the research question and related to three key factors: (i) demographic and social factors, (ii) technological factors and (iii) health and healthcare factors.

In particular, for this reason, keywords related to three aspects of the phenomenon under analysis were identified, namely digital evolution (“access to digital technology” OR “access to digital health” OR “technology adoption” OR “digital divide” OR “disparity in health technology”), disparity (“disparity” OR “differences” OR “inequality” OR “public-private differences”) and health sector and organisations (“health organisations” OR “public health care” OR “private health care” OR “health system”).

Finally, 261 records were produced from the sources.

Eligibility criteria

Only peer-reviewed journal articles published in English were considered. Other types of scientific documents (books, chapters, book reviews, professional articles, conference proceedings, working papers and reports) were excluded, as they were not subject to a peer-reviewed process. Furthermore, scientific documents must have been published by March 28, 2025 [11, 13, 14].

To ensure a transparent procedure in the selection of scientific articles, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were adopted. Figure 1 shows the steps of these literature review guidelines [15].

Data extraction and graphing

All the bibliographic information of the identified scientific papers was saved in CSV (Comma Separated Values) format. Subsequently, the information was sorted

alphabetically by the last name of the first author. The file was examined to ensure that all the records found were valid, i.e., they did not have missing titles, empty author names or other empty essential fields. In addition, other entries not considered useful or duplicate entries were removed from the file [16–18].

Subsequently, the data were summarised through tables and figures, allowing the extracted data to be visualised. Table 1 shows the selected keywords.

Table 1 shows the keywords identified, to highlight three aspects of the digital evolution in the healthcare sector and the related inequalities, related to the three key factors: (i) demographic and social factors, (ii) technological factors and (iii) health and healthcare factors.

Therefore, the keywords have been grouped into: Demographic and social factors (X_1), Technological factors (X_2) and Factors related to health and healthcare services (X_3). Each macro-category is, in turn, divided into sub-variables. The division into levels is a necessary choice given the intrinsic complexity of the phenomenon analysed.

The keywords that directly influence the access to and adoption of technologies by different segments of the population have been grouped into the macro-category Demographic and social factors (X_1). All the keywords related to the digitalisation and adoption of new technologies in the healthcare sector have been grouped into the macro-category Technological factors (X_2); finally, in the macro-category, actors related to health and health services (X_3), all the keywords concerning the functioning of the health system and the policies of equity and access to digital health services were grouped.

This step allowed us to refine the search further. Finally, thanks to this step, the scientific documents not directly related to the three factors were eliminated. Therefore, 64 scientific documents were analysed (of which 12 were in open access).

Results

Visualisation and characteristics of included studies

This section presents the visualisation, through VOSviewer software (see Van Eck and Waltman [19, 21], and the main characteristics of the studies included. First, the database was exported and analysed using the VOSviewer software (see Van Eck and Waltman [19–21], to identify the connection between the keywords used by the authors of the studies included [20, 21].

Figure 2, generated using VOSviewer software, represents the scientific landscape made up of co-occurrences between keywords of the identified scientific documents. Each node of the scientific landscape represents a keyword used by the authors to analyse the phenomenon.

As a preliminary step, the scientific landscape was analysed based on three parameters: density, diameter

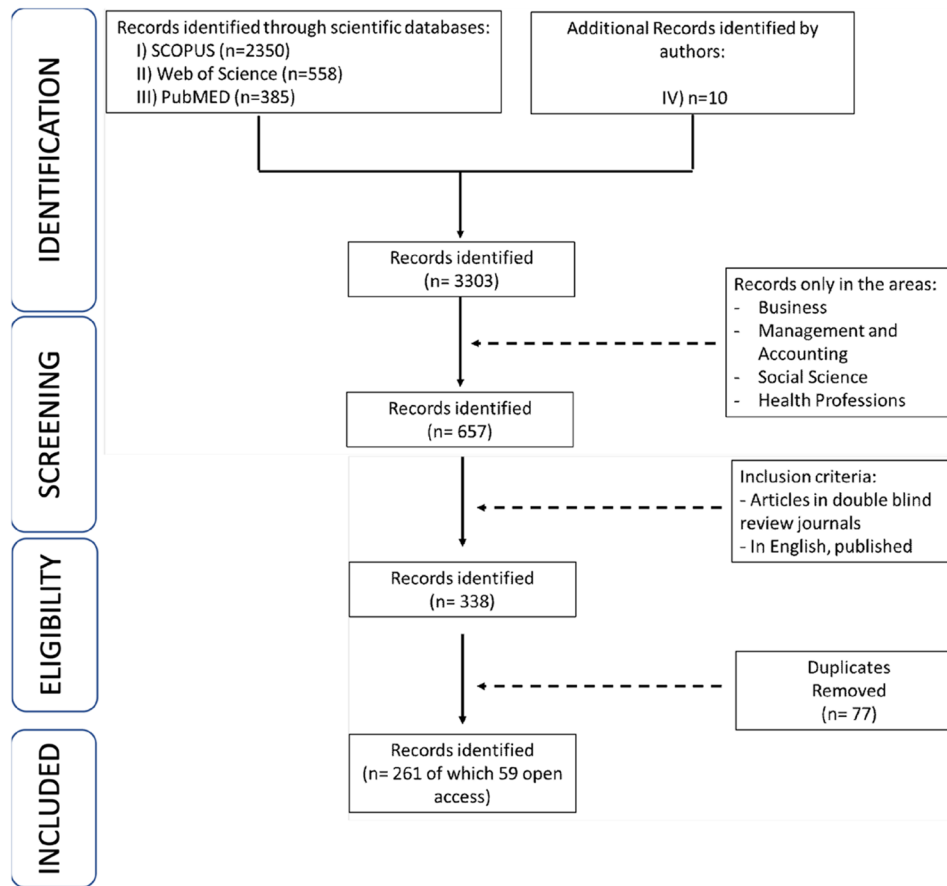


Fig. 1 Prisma Protocol

Table 1 Keyword selection

Demographic and Social Factors (X ₁)		Technological Factors (X ₂)		Health and healthcare Factors (X ₃)			
X _{1,1} Gender	X _{1,12} Gender	X _{2,1} Health Technologies	X _{2,11} Telemedicine	X _{3,1} System and Services	X _{3,11} Health Care		
	X _{1,13} Female		X _{2,12} Telehealth		X _{3,12} Health Care System		
X _{1,2} Age	X _{1,14} Male	X _{2,2} Access and digital skills adoption and integration	X _{2,13} Ehealth	X _{3,2} Equity and Policy	X _{3,13} Health Care Delivery		
	X _{1,21} Age		X _{2,21} Digital divide		X _{3,14} Healthcare Services		
	X _{1,22} Aged, 80 and over		X _{2,22} Digital Literacy		X _{3,15} Health Care Personnel		
	X _{1,23} Older Adults		X _{2,23} Technology adoption		X _{3,16} Medical Record		
	X _{1,24} Middle Age		X _{2,31} Technology adoption		X _{3,17} Electronic Medical Record		
X _{1,3} Level of education	X _{1,25} Adolescent	X _{3,3} Access and Inequality	X _{2,21} Digital divide	X _{3,33} Health Care Access	X _{3,21} Health Equity		
	X _{1,31} Education		X _{2,22} Digital Literacy		X _{3,22} Health Policy		
X _{1,4} Socioeconomic	X _{1,32} Higher Education	X _{3,34} Health Services Accessibility	X _{2,31} Technology adoption				
	X _{1,41} Socioeconomic Factors						
	X _{1,42} Ethnicity						

Table 2 Main umbrella terms, specific terms and purposes of the research areas of the scientific landscape

Umbrella terms	Specific terms	Research area purpose
Health care	health care delivery, health services, health care personnel, health care quality, health care access, hospital	Studies in this area aim to understand the impact of digital innovations on the organisation, delivery processes and performance of the healthcare system.
Technology adoption	innovation, digital technology, decision making, information use, internet, behavioural research	Studies in this area aim to understand the adoption, implementation and integration of digital technologies in healthcare organisations.
Telemedicine	eHealth literacy, health literacy, health promotion, procedures, developing countries, medical information	Studies in this area aim to understand the new care models that emerge as a result of digital evolution, with the aim of supporting policies for the standardisation and interoperability of EHR systems
Knowledge	socioeconomic factors, health insurance, access, availability, middle aged, health services accessibility	Studies in this area aim to promote user empowerment, professional training and skills development for equitable and sustainable digital healthcare.
Health equity	awareness, education, perception, attitude, young adult, female, male, knowledge management	Studies in this area aim to understand the barriers and obstacles to access to health services, determined by social, economic, geographical and cultural factors.

limit, to include all the available contributions and fully analyse the development of the topic over time.

Figure 3 reports the historical evolution of scientific documents.

Regarding the analysis of historical evolution, the year 2025 has been eliminated from Fig. 3, as it has not yet concluded and could have created distortions in the interpretation. Figure 3 highlights the growing interest of scholars towards the topic of emerging inequalities generated by digital evolution in healthcare. The red dotted line is the trend line that demonstrates a growing trend, which has consolidated since 2018. By studying the scientific documents identified, it is also possible to identify 3 historical periods.

The first historical period is from 2006 to 2012. It is the initial phase of studies on inequalities in healthcare. Publications in this phase are sporadic. Studies in this phase are characterised by “techno-optimism”, mainly oriented towards analysing the positive aspects of digital technology, paying little attention to the social aspects or factors of health equity. The few studies that have considered inequalities in this phase have analysed the issue of physical accessibility to technologies, without considering aspects such as skills and knowledge, usability and impacts on health or outcomes.

The second period (2018–2021) is characterised by a constant increase in scientific production, demonstrating the growing interest of scholars and practitioners in the topic, which was most likely caused by the widespread diffusion of new technologies in healthcare that brought about phenomena such as telemedicine, e-health or

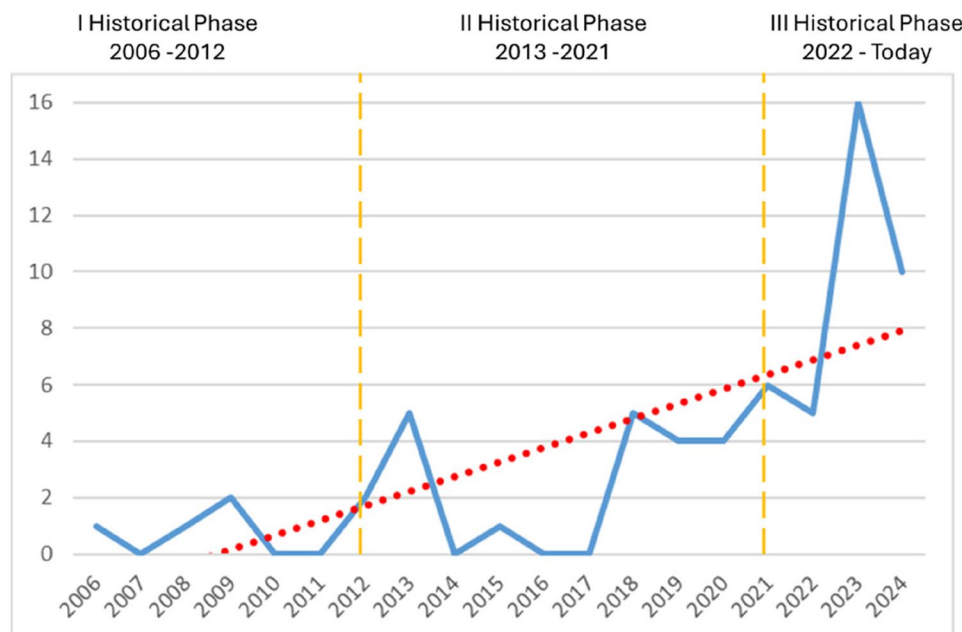


Fig. 3 Historical Phases

contributions; for this reason, the central elements that emerged from each contribution have been highlighted to link them coherently to the specific research questions.

Impact of digital evolution and demographic social factors on the healthcare system (RQ1)

The influence of demographic and social factors (such as age, gender, education level and socioeconomic status) on the access and use of healthcare services is a consolidated topic in the reference literature. The results of this scoping review demonstrate that several studies have explored the relationship between demographic and social factors and the emergence of inequalities. There are 12 studies that have been directly traced back to this topic. However, the importance of this topic is not given by the number of included studies, but by their diffusion over time. The studies that have been traced back to this topic belong to the 3 historical phases, which demonstrates the attention towards demographic and social factors. By analysing the studies that have identified demographic and social factors as a critical dimension in equal access to digital health, it is possible to identify evidence in 5 areas: (1) eHealth literacy and digital skills, (2) gender, (3) age, (4) scepticism and technological perception and (5) culture and organisational context.

The first area focuses on eHealth literacy. According to Norman and Skinner [22], eHealth literacy can be defined as the ability to evaluate health information from electronic sources and to apply the acquired knowledge to address or solve a health problem. It represents a transversal theme present, even indirectly, in numerous included studies. Furthermore, it is a constant theme over time. The first studies that have been traced back to this theme have been traced back to 2008 [23], the most recent to 2025 [24]. The lack of digital literacy is a factor that generates new inequalities and especially concerns specific social categories such as the elderly and citizens with low levels of education or ethnic minorities [25]. The study by Griebel et al., [26], starting from the assumption that health is a fundamental social determinant, highlights the inadequacy of existing approaches to digital literacy, offering a systemic vision of the phenomenon. The second area of this theme focuses on gender as a socio-demographic factor. Some studies have highlighted women in rural and patriarchal contexts who encounter difficulties in accessing digital technologies and services, determining the impossibility of accessing health services [27]. The third area is linked to age as a factor of emerging inequalities in digital healthcare. Several studies confirm that age represents a barrier to accessing healthcare services, not due to poor skills but due to psychological factors. Studies show that older people prefer face-to-face social interaction, perceiving the intermediation of digital technologies as impersonal and

difficult to manage when concerning relationships [28, 29]. The adoption of digital mobile devices and the use of health apps is also welcomed differently in relation to age groups [30]. The fourth area, contiguous to the previous one, focuses on scepticism and technological perception. The main contributions using the behavioural reasoning theory (BRT) as a theoretical basis highlight that distrust towards technologies is often determined by negative previous experiences, for example, the lack of digital skills, poor transparency or trust in digital systems. Scepticism manifests itself above all in groups with less education [31, 32].

Finally, the last area of analysis is the context and organisational culture. Interesting studies [33, 34] have focused their attention on the influence of the context and organisational culture on the ability to implement digital changes. These studies have focused on the perception of doctors and healthcare workers [35–39], as a dimension of the organisational context. The results of these studies have highlighted that a positive perception is directly related to a positive adoption of digital tools.

Impact of digital evolution and technological factors on healthcare systems (RQ2)

The studies included in this theme have addressed the relationship between the challenge of digital evolution and technological factors and, above all, their influence on access to healthcare. Twenty-four studies have been included, offering a varied picture both in terms of theoretical perspective and methodology. The studies provide empirical and theoretical evidence, address both the adoption phase of new digital technology and the usability and accessibility of the platform on operational and infrastructural barriers and predictive models of technological behaviour. Scholars seem to be more curious about the adoption of new digital technology, both by healthcare professionals and patients [40–42]. Numerous empirical evidence highlights that the perception of usefulness and ease of use represent the main elements for the successful adoption of new digital technology [40, 42]. Other studies combine these key elements with both organisational support and intention to use telemedicine. The main and most frequent theoretical models used to analyse the adoption, acceptance and use of new digital technologies by users are the TAM (Technology Acceptance Model) and the UTAUT (Unified Theory of Acceptance and Use of Technology) [43]. Another area of study [44–46] analyses the impact of the digital divide, especially in low-income countries, with connectivity problems and the absence of mobile devices. Finally, a growing number of studies focus on the psychological and behavioural motivations behind technology use.

Impact of digital evolution and health system factors on the access and use of health services (RQ3)

Studies within this theme have highlighted the crucial role of organisational variables and dynamics, models of health governance and territorial institutions in ensuring equity and accessibility in healthcare contexts, through digital technologies. From the analysis of these studies, it clearly emerges that the ability to absorb new digital technologies and integrate them with existing internal processes is a fundamental prerequisite for effective digital transformation [37, 47, 48].

At the same time, a growing number of studies have focused on resistance to organisational change, the rigidity of roles and the lack of transformative leadership as obstacles to digital transformation. Several studies, however, have highlighted how digital technologies can guarantee continuity of care [32, 49]. The results of these studies highlight the need to establish strategies for integrating digital technologies at different levels of the healthcare system. Finally, a recurring theme in the studies analysed is the role of organisational knowledge. In fact, numerous studies have shown how the culture of the healthcare organisation influences the quality of digital healthcare Gonçalves, et al., [50–53].

Findings and discussions

With the broader aim of promoting research on the new emerging inequalities in the healthcare system determined by digital evolution and how such disparities are intertwined with the processes of knowledge management within healthcare organisations, in this section, we present the interpretation of the results of this scoping review with regard to three dimensions: (1) inequalities and socio-demographic factors, (2) inequalities and technological factors and (3) inequalities and organisational and systemic factors.

Finally, the results of this study provide an overview of the healthcare inequalities generated by digital evolution articulated at the individual, organisational and system levels.

Inequalities and socio-demographic factors (RQ1)

The results of this study confirm that socio-demographic factors (such as age, gender, education level and socioeconomic status) represent significant barriers to equitable access to digital health technologies and, consequently, to health services.

The studies analysed highlight that digital literacy is a critical aspect for the inclusion of specific social categories in the digital evolution of the healthcare system. The results highlighted that categories such as elderly people, low-income or immigrants are not very familiar with digital tools. The results obtained are consistent with what

has been highlighted by previous research on the topic [54–56].

Therefore, digital literacy, generated by socio-demographic factors, can generate broader structural inequalities. This result highlights the importance and necessity of offering the social categories most at risk of digital inequality targeted training programs, both in terms of familiarity and culture of relating to healthcare workers through digital technologies.

Another socio-demographic factor is gender. Gender inequalities, especially in backwards or developing contexts such as rural or marginalised contexts, can determine gender-based inequalities. Women are predominantly affected. In fact, in these contexts, women are not allowed or are hindered from using new digital technologies, preventing them from accessing healthcare services.

Inequalities and technological factors (RQ2)

Technological factors have been at the centre of the academic debate on healthcare systems since the identification of the second historical phase in 2013. In fact, numerous studies included in the scoping review have analysed the main digital health tools such as telemedicine, electronic health records (EHR) and mobile applications (M-health). These new technologies cause an improvement in the delivery of the healthcare service, in terms of efficiency. Consequently, healthcare organisations are forced to introduce new digital tools to improve their performance. At the same time, however, the adoption of new digital tools can be hindered by interoperability and the existing IT system. Several studies have focused on the lack of integration between digital tools and the data flow generated by daily operational activities. A further obstacle to the introduction of new digital tools is the scarce availability of resources. The results also highlighted that the differences in adoption of digital technologies can be explained by using the theoretical models of the TAM (Technology Acceptance Model) and the UTAUT (Unified Theory of Acceptance and Use of Technology) [43, 57].

The definition of these models and the results reinforce the idea that investments in digital tools, within the system or healthcare organisation, must be made through user-centred design, with constant operational support and accompanied by parallel investments in training.

Inequalities and organisational and systemic factors

The results of this study have shown that healthcare organisations, and their organisation play a crucial role in promoting equity and access to digital healthcare. Several studies, focusing on organisational variables, have highlighted that organisational efficiency, the capacity to absorb and share new knowledge, influences the

effectiveness of the healthcare service delivery process, determining a direct impact on health outcomes. Although organisational variables can greatly reduce emerging inequalities in digital healthcare, they are not the only factors. In fact, national regulatory frameworks and regional health policies also have a significant impact on the diffusion and adoption of digital technologies. In fact, the results highlight that the lack of institutional coordination or reimbursement systems for telemedicine can negatively affect access to digital health by the most vulnerable social groups. Therefore, a strategic alignment between organisational actors in the healthcare system is necessary.

Managerial, practical and policy implications

The results of this study reinforce the idea that to counter the emerging inequalities generated by digital evolution in the healthcare system, it is necessary to use a stratified and multilevel approach. In fact, the intrinsic complexity of the healthcare system and its impacts on society require a rethinking at individual, organisational and system levels.

Interventions at the individual level must be oriented to increasing the level of digital literacy, especially among the most vulnerable social groups (elderly, women and low-income contexts). Furthermore, the results have highlighted that digital literacy is often not caused by low accessibility to digital technologies, but 'voluntary' or due to initial scepticism. For this reason, training interventions must be oriented to spreading trust with new digital technologies to combat initial scepticism.

Nevertheless, training must also be aimed at healthcare professionals who know how to manage new digital technologies in their daily routines. Considering the results obtained, during the design phase of investments in digital systems, it is necessary to consider the aspects of accessibility, interoperability and user-centricity. Therefore, co-design practices, through the involvement of end users, appear essential in achieving a more inclusive digital innovation. At an organisational level, however, the efficiency of healthcare organisations represents a strategic piece for the sustainability and inclusiveness of the healthcare system. For this reason, organisations must strengthen their internal capacity to absorb, transfer and share knowledge. Also, at this level, it is essential to design training interventions aimed at managing new knowledge. At the same time, the intrinsic complexity of the healthcare system and the limited availability of resources force healthcare organisations to encourage and consolidate inter-professional collaborations to access new knowledge more easily and in a structured way.

Finally, at a system level, public decision-makers must adjust their actions to integrate digital inclusion

objectives with national healthcare strategies. Furthermore, it is necessary to consider a strategic coordination for the introduction and monitoring of digital technologies. National and regional policies on recognition and reimbursement systems may also increase existing inequalities.

Limitations and future research steps

This scoping review is not without limitations. Although the review was conducted following a transparent and systematic methodological process with a wide scope of observation, the inclusion of documents was based on specific criteria. Only peer-reviewed articles in English were taken into consideration, which may have excluded relevant contributions from other sources. Secondly, only the three main scientific databases were used. Finally, the use of VOSviewer and the creation of the scientific landscape allowed us to visualise and enrich the bibliometric analysis, but at the same time, homogenise the contextual factors of the individual studies.

Based on these considerations and the results, future research should explore emerging inequalities by adopting mixed methodologies, especially to investigate structural barriers and subjective experiences of users (initial scepticism). Another element that emerged is the need to conduct longitudinal and comparative studies to evaluate the effectiveness of digital technologies in the long term, in terms of access and health outcomes, or training plans. Moreover, digital skills and their link with knowledge management is an emerging theme future studies should focus on.

Conclusion

This scoping review on emerging inequalities because of digital evolution in healthcare system.

This study focused on filling the gaps in the current scientific panorama on the factors that can cause inequalities to emerge in healthcare. In addition, this manuscript investigated these inequalities under the theoretical perspective of knowledge management. The study highlights the growing interest of scholars towards these issues.

Based on the current literature, it was possible to answer both the general research question and the three specific research questions formulated. Digital evolution in healthcare system can generate new inequalities. The identified factors were grouped into three macro categories: socio-demographic factors, technological factors and organisational and systemic. These three factors allowed to have a holistic vision of digital evolution in healthcare, as they allow to collect and analyse the emerging inequalities at micro, meso or macro organizational level. However, the literature analyzed has highlighted that it is possible to reduce inequalities by neutralizing the three factors identified.

The results can offer results both to managers of healthcare organizations and to public decision makers. Digital literacy actions especially in rural areas destined for weak social groups, can represent levers to improve access to the health system. At the same time, the scoping review highlights the need for further studies and in-depth analysis through interdisciplinary research.

Authors' contributions

The authors contributed equally to this work.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable.

Competing interests

The authors declare no competing interests.

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