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-RESEARCH ARTICLE-

INNOVATION AND HUMAN RESOURCES MANAGEMENT IN THE HEALTH SECTOR: SYSTEMATIC REVIEW STUDY

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Abstract

The health sector has been developing technologically at an incredible pace in recent years. While this circumstance increases the importance of the concept of innovation, on the other hand, it causes institutions to change their management approach. One of the important gains that technology brings to working life is innovative applications. In the health sector, artificial intelligence and machine learning techniques, mobile health applications, and the use of robotic systems in surgical operations are among the most innovative applications. The primary purpose of this study is is to identify the impact of innovation in human resource management in the health sector. The method of the research is "systematic review" (meta-synthesis). Within the scope of the purpose of the research, inferences were made by analyzing the research conducted with a series of keywords related to the concepts of 'innovation' and 'human resources management' with the criteria determined in the 'Web of Science Core Collection' database. Accordingly, 17 articles were examined in line with the study's inclusion criteria. The articles examined were evaluated according to the criteria determined by the researcher (main findings, including keyword, study subject, year of publication, method used, scale, sample size, science/department in which it was written, type of study). Screening and reporting of findings were conducted using the PRISMA reporting checklist as a guide. According to the results obtained from the research, it is observed that there is only one study that includes human resources management directly related to the concept of innovation. It was observed that health institutions are a multidisciplinary field of study and research is conducted in different disciplines. While the importance of innovation is emphasized within the scope of digital health, another striking issue is staff satisfaction.It was determined that the subjects studied in the articles were generally innovation, human resources or innovation and the health sector. The assessment is that the research results will contribute to new studies on related subjects and healthcare enterprises related to these subjects.

Keywords: *Health Human Resources Management, Innovation, Health Sector, Innovation of Health*

JEL Codes: *M12, I19*
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SAĞLIK SEKTÖRÜNDE INOVASYON VE INSAN KAYNAKLARI YÖNETIMI: SISTEMATIK DERLEME ÇALIŞMASI

Öz

Sağlık sektörü son yıllarda teknolojik tabanlı olarak değişmektedir. Bu durum bir taraftan inovasyon kavramının önemini arttırırken; diğer taraftan kurumların yönetim anlayışlarını değiştirmelerine sebep olmaktadır. Teknolojinin çalışma hayatına getirdiği önemli kazanımlardan biri de inovatif uygulamalardır. Sağlık sektöründe yapay zeka ve makine öğrenimi teknikleri, mobil sağlık uygulamaları, robotik sistemlerin cerrahi ameliyatlarda kullanılması inovatif uygulamaların başında gelmektedir. Bu çalışmanın temel amacı sağlık sektöründe insan kaynakları yönetimi alanında inovasyonun etkilerini tanımlamaktır. Araştırmanın yöntemi sistematik derlemedir (meta-sentez). Araştırmanın amacı kapsamında 'Web of Science Core Collection' veri tabanında belirlenen ölçütlerle 'inovasyon' ve 'insan kaynakları yönetimi' kavramları ile ilişkili bir dizi anahtar kelimelerle yapılan araştırmalar analiz edilerek çıkarım yapılmıştır. Buna göre araştırmanın dahil etme kriterleri doğrultusunda 17 makale incelenmiştir. İncelenen makaleler araştırmacı tarafından belirlenen ölçütlere göre (anahtar kelime, çalışma konusu, yayının yapıldığı yıl, kullanılan yöntem, ölçek, örneklem büyüklüğü, yazıldığı bilim/anabilim dalı, çalışmanın türü olmak üzere ulaşılan temel bulgular) değerlendirilmiştir. Tarama ve bulguların raporlandırılması PRISMA bildirimi kontrol listesi rehber alınarak yürütülmüştür. Araştırmadan elde edilen sonuçlara göre; inovasyon kavramı ile direkt ilintili olarak insan kaynakları yönetimini içeren 1 çalışmanın mevcut olduğu görülmektedir. Sağlık kurumlarının multidisipliner bir çalışma alanı olduğu ve farklı disiplinlerde araştırma yapıldığı gözlenmiştir. Dijital sağlık alanı kapsamında inovasyonun önemi vurgulanırken; bir diğer dikkat çekici konunun personel memnuniyeti olduğu görülmektedir. Araştırma sonuçlarının ilgili konularda yapılacak yeni çalışmalara ve konularla ilgili sağlık işletmelerine katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: *Sağlık İnsan Kaynakları Yönetimi, İnovasyon, Sağlık Sektörü, Sağlık İnovasyonu*

JEL Kodları: *M12, I19*

"Bu çalışma Araştırma ve Yayın Etiğine uygun olarak hazırlanmıştır."

1. INTRODUCTION

Although the word innovation, derived from the Latin word 'innovatus', is defined as 'newness' in the Turkish Language Association (TDK) 2021, the synonyms in which the word innovation is commonly used are concepts such as 'novelty', 'renewal' and 'neologism', and these words do not fully meet innovation in terms of meaning (Toraman et al., 2009: 101-102). From a broader perspective, *innovation* is defined as transforming knowledge into economic and social benefits (Cebeci and Alaca, 2010:

1). Service innovation is another important concept that has entered business life together with the concept of innovation. As in every sector, the priority in the service sector is to create value in order to achieve competitive advantage. Change and innovation are felt intensely in the healthcare sector, and many variables exist. Hospitals, which are the driving force of the health sector, are responsible for the treatment of patients and raising their living standards, and for this reason, they take part in our lives as a combination of the innovations and activities they provide (Tuna and Kılıç, 2020: 266).

An essential issue in innovation practices is the source that enables the realization and implementation of innovation. Therefore, people, the most crucial resource of every business, maintain their value in the innovation process. Although health institutions are located in the service sector, they are businesses where labour-intensive production occurs. In this regard, the employees who implement the system must have innovative personalities. Innovative people can be defined as people who can observe the world from a different perspective, have a questioning nature, have developed creativity skills, and also have a diligent working ethic. Therefore, the managerial dimension of human resources is essential. Work-life is constantly transforming in the ever-changing and developing world. Businesses that can adapt to this wind of change can survive with innovation-oriented working principles.

In today's businesses, where the concepts of human resources management and innovation are often used together, the limitation of resources that determine the innovation strategy to include human resources management in healthcare institutions has brought up the issue of examining the studies in this field. In the study, the concept of innovation, health innovation systems and health human resources management concepts will be discussed, and then the search results carried out through the 'Web of Science' portal will be evaluated.

1.1. INNOVATION IN CONCEPTUAL FRAMEWORK

The concept of innovation, which we have begun to hear frequently in the field of business recently, refers to the process of transforming new ideas into value-creating outputs (such as products, methods or services) (Toroman et al., 2009: 94). In a broad sense, *innovation* is defined as transforming knowledge into economic and social benefits (Cebeci and Alaca, 2010:1).

The concept of innovation is a concept that includes results and processes at the same time. Porter (1990) stated that innovation includes new business methods and technologies providing competitive advantage. Trott (1998) evaluated innovation from a management process perspective and evaluated innovation as the management of all activities involving the process of technology development, idea creation, marketing and manufacturing of a new or improved product or manufacturing equipment. Therefore, invention appears as a concept often mixed up with the concept of innovation. Just as invention is not innovation, most innovative approaches are not inventions either. For example, while the invention of the light bulb attributed to Edison was an invention, the LED bulb is an innovation.

Innovation can result in reshaping old ideas in a new way, creating a new process or product, or using a process that is not used in another sector or used in the organization differently (Weberg, 2009:231). Although innovation is not a direct concept in our lives, it is channelled into our lives daily with new technologies such as artificial intelligence, the Internet of Things, big data, cloud computing, et cetera.

1.2. HEALTH INNOVATION SYSTEM

Health is the most valuable resource of human beings since the beginning of their existence. Therefore, technological innovations are of great importance for progress in human health. The health innovation system includes the relevant aspects of the macro environment of institutions, the rules and procedures that should be within a national innovation system, the activities of the health system at the national level, as well as the innovation of organizations in the health value chain, including production, delivery, financing and research of private companies, it is a general term that includes activities (Chataway et al., 2007).

Innovation, which has become the symbol of the transition to a creative economy in the information age, is the development process of new approaches, technology and working methods. As it is known, the information age has brought the concept of "Knowledge Workers" into our lives. Knowledge workers are people who follow innovations, constantly improve themselves, have analysis-synthesis skills, and can transform information according to the assignment's requirements (Gümüştekin et al., 2013: 282). Innovation begins with an appropriate idea, but the critical approach is that the further stages of this idea must be realized (Şengün, 2016: 194). Accordingly, rewarding progress is carried out at the point where we implement these ideas rather than the ideas we produce, especially regarding innovation.

The healthcare sector is an area where many new ideas are generated, exclusively in the treatment phase. Apart from the service provided to patients through the system, the progress imposed in the patient treatment process has gained tremendous speed in the health sector. (Şen, 2022: 90). The recent COVID-19 pandemic is an excellent validation of this situation. Countless scientists from many countries have produced new ideas about the epidemic. However, those of these ideas that were implemented or could be implemented were successful. This situation also reveals the difficult challenge faced by the healthcare sector. While the health sector faces challenges, it also actively offers innovative managerial institutions, expertise and services to meet public demands (Memişoğlu and Kalkan, 2016: 650). Hospitals, one of the basic building blocks of the health sector, have to adopt innovative practices and better respond to the needs of healthcare personnel and patients to maintain their presence (Özbey and Başdaş, 2018: 2).

1.4. HUMAN RESOURCES MANAGEMENT IN HEALTH

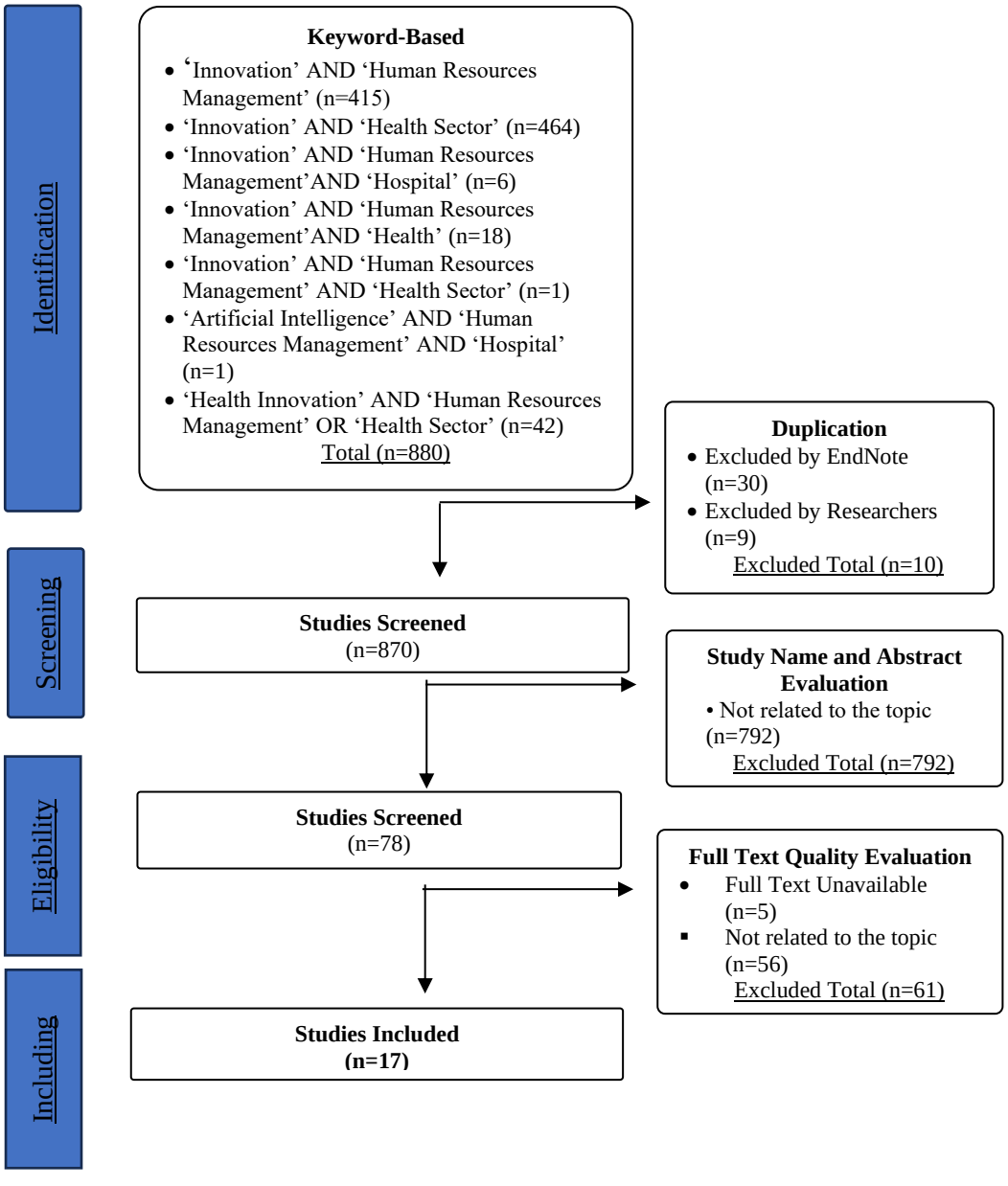
Considering that innovation is a process, the management approach in the relevant institution is of significant priority for this process to function correctly. Innovation is based on generating creative ideas. Hospitals in the health sector are institutions where innovative approaches are felt more intensely compared to other sectors. Thus,

developing a strategy in human resources management is an indispensable condition. Encouraging the performance system to ensure the sustainable work of healthcare professionals within the sector will affect the quality of the work done. Therefore, analyzing employees' abilities well and bringing their creativity to the fore with the proper guidance can be listed as essential strategies.Health enterprises are organizations employing different professional groups due to their structure. While many professional groups such as doctors, dentists, pharmacists, nurses, midwives, physiotherapists, audiometrists and dietitians work one-on-one with patients, anaesthesia technicians, laboratory technicians, emergency aid technicians, dental prosthesis technicians, oral and dental health technicians, which we can classify as auxiliary health technicians, such as operating room technicians, pathology technicians, et cetera, provide support to the professional group that treats the patient. As in every business, administrative work has a particular place and relevance in healthcare establishments. The execution of administrative services is carried out by human resources, purchasing, accounting, finance and public relations departments under the leadership of the senior management and with the endorsement of support and technical services. In businesses with such a complex structure, it is essential for the management to analyze the tasks and their requirements in detail and adopt innovations.

2. METHODOLOGY

A descriptive type qualitative systematic review method was adopted in this systematic review research based on the fact that there is no systematic review in the relevant literature from which research on innovation in the field of human resources management in the health sector can be inferred. In the literature, systematic reviews (reviews) are explained as "systematic and unbiased scanning of scientific studies published in that field following predetermined parameters or criteria in order to find an answer to a research question designed on a particular subject, evaluation of the identified studies and synthesis and combination of them" (Çınar, 2019: 6). The keywords used in the scanning process and the details of the scanning findings and scanning procedures are shown in Table 1 below. As a result of scanning different word combinations, a total of 880 results were obtained. Studies published in the last ten years were analyzed. For this reason, the abstract and title of the articles were reviewed. Due to the fact that some of the articles included in the previous searches came back in the searches with new words, duplicate results were obtained within the scope of the review, and the duplicate studies were excluded from the total. Since the same situation was observed in the searches based on systematic reviews and book chapters, duplicate studies were excluded from the total section, and 17 articles were included in the study.

Fig1. Systematic Screening of Studies on the TAVI Coordinator Approach (Created in MS Word 365)



Considering the scope of the studies evaluated within the scope of the research and the desired criteria, several inclusion criteria were used in the selection phase of the articles/book chapters to be included in the research. The study inclusion criteria and article review parameters are detailed below.

2.1. RESEARCH INCLUSION CRITERIA

• Studies must be full-text and accessible,

• No distinction is made between articles, book chapters and papers,

• The research area is the health sector, innovation, health innovation and human resources,

• No distinction is made between research or review articles,

• No distinction is made between the language of publication,

• Published in the last ten years

2.2. CRITERIA FOR REVIEWING ARTICLES

• Keywords,

• Year of publication,

• Study subject or concepts covered,

• Writer,

• Web of Science Category,

• Method,

• Data collection tool,

• Sample,

• Article type.

2.3. LIMITATIONS OF THE STUDY

In the research conducted through the "Web of Science Core Collection Portal", accessible and published articles and book chapters were researched. Articles that were accepted for publication and were not published were excluded from the study. 'Web of Science Core Collection' was used as the search portal. This is because the 'Web of Science Core Collection' has the world's comprehensive original citation indexing feature. In addition, one of the main reasons for preference is that it covers more than 21,000 peer-reviewed, high-quality academic journals worldwide.

Table 1. Keyword-Based Search Results on the Web of Science Core Collection Portal

No	Writer	Year	Name of the Publication	Web of Science Category	Study Subject or Concepts Covered	Method	Data Collection Tool	Sampling	Publication Type	Outcome Measures	Results
1	Bonacci, Isabella Mazzitelli, Andrea Morea, Donato	2020	Evaluating Climate Between Working Excellence and Organizational Innovation: What Comes First?	Green and Sustainable Science and Technology, Environmental Sciences, Environmental Studies	The article displays the main results of a longitudinal study conducted over a three-year period (May 2014-May 2017) in the pediatric department of a large hospital in Southern Italy, intending to encourage employees towards sustainability	A longitudinal study conducted in the pediatric department of a large hospital in Italy over a three-year period (May 2014-May 2017)	Questionnaire	A total of 180 people were studied, including 4 administrative employees, 56 doctors, 100 nurses and 20 social workers	Research article	The overall proportion of the change in the dependent variable explained by the combination of predictors is 20%.	Recent and ongoing economic and social changes are pushing healthcare organizations to continuously improve their services, with an emphasis on quality of care, clinical care and cost control
2	Espinoza, Pilar Peduzzi, Marina Agreli, Heloise F. Sutherland, Melissa A.	2018	Interprofessional Team Member Satisfaction: A Mixed Methods Study of a Chilean Hospital.	Health Policy and Services, Labor and Industrial Relations	To analyze member satisfaction in interprofessional teams and explore interpersonal relationships, leadership, and team climate in a hospital context	This study is an explanatory sequential mixed methods (quantitative/qualitative) study of 53 teams (409 professionals) at a university hospital in Santiago, Chile	Questionnaire, Interview	A survey was conducted on 409 people. Interviews were held with 15 people from the teams with the highest scores	Research article	Significant associations were found among variables, and the linear regression model showed that team climate ($\beta = 0.26$) was a better predictor of team satisfaction than team leadership ($\beta = 0.17$). Registered nurse was perceived as the profession with the highest score on the transformational leadership measure (mean = 64), followed by the physician (mean = 33)	Analysis of interviews identified five themes: attributes of interprofessional work; collaboration, communication, and social interaction; interprofessional team innovation; shared leadership; and interpersonal relationship interface work/social.

3	Hola, Jana Spackova, Iva Zahorova, Vera	2017	Employee Satisfaction Assessment to Increase Employee Loyalty	Economy	Satisfaction assessment and finding incentives for greater employee participation, setting standards of human resources management, and determining the level of participation and potential conditions for innovation and collaboration	Satisfaction survey at a selected acute care hospital in the Czech Republic	Questionnaire	A survey was conducted on 1564 people	Research article	Respondents evaluated the best domain - the level of the formal setting of work (average rating 1.77), the worst domain - the level of belonging to the organization (average rating 2.62)	The strongest relations between the level of belonging to the organization, the level of self-realization, satisfaction with personal and professional development and the level of engagement and conditions of potential for innovation and cooperation were found out.
4	Weng, Hui-Ching Chen, Tung-Mei Lee, Wei-Jing hang, Ching-Sheng Lin, Chia-Tzu Wu, Meng-Ling	2017	Moderating Effects Between Internal Marketing and Service-Oriented Approach and Patient Satisfaction	Nursing	To investigate how nurses' perception of internal marketing may have a significant positive moderating effect on the relationship between service-oriented encounters and patient satisfaction in nursing neglect	A survey conducted between December 2014 and January 2015 among nurses working in surgical units of hospitals at the regional level or higher level in Taiwan	Questionnaire	A survey was conducted on 534 people	Research article	The amount of explained variance was 61.1%. The variables of service-oriented encounter were all significant. The participation staff β value was 0.250, the physical environment β value was 0.376, and the service process β value was 0.255.	Results indicate that service-oriented encounter has a significant positive influence on patient satisfaction and internal marketing perception among nurses has a significant positive moderating effect on the relationship between service-oriented encounter and patient satisfaction
5	George L. Dzimbiri, Alex Molefi	2022	Talent Management Model for Nurses Working in Malawi Public Hospitals	Clinical Psychology	A study showing the relationship between talent management and job satisfaction, innovative work behavior, work engagement and career orientation.	A quantitative study (cross-sectional) was conducted in public hospitals in Malawi, applying the adapted Human Capital Index Survey,	Questionnaire	This survey was conducted on 947 people	Research article	Results show that overall, 47% of participants were neutral about talent management contribution on job satisfaction	There is a positive relationship between talent management and job satisfaction

						Minnesota Job Satisfaction Survey (MSQ), Innovative Work Behavior Scale (IBS), Utrecht. Work Engagement Scale (UWES) and Career Orientation Inventory (COI). Spearman's rank correlation (r) was used to determine the association between study variables					
6	Andrey A. Maltsev and Alyona O. Fechina	2019	Medical Service in HR Quality Management System	Management	To reveal the relationship between the level of healthcare and main macroeconomic indicators as a systemically important element of HR management on the axis of the individualized approach to treatment of industrialized countries	None	None	None	Review article		The study underlines that industrialized countries already practice the individualized approach to treatment. It demonstrates that there is a correlation between the level of healthcare as a systemically important element of HR management and the main macroeconomic indicators.
7	Alvarez Pulido, Karen Lisseth Serrano Cardenas, Lizeth	2017	Health Innovation: A Review of the Scientific Literature of the	Business and Economy	To conduct a literature review on health innovation that integrates the medical perspective	Bibliometric Analysis	None	None	Review article	_	The main results show the need for a deeper understanding of the theoretical and empirical

	Fernanda Bravo Ibarra, Edna Rocio		Past Decade		with other sciences in order to determine consensus and differences in the conceptualization of health innovation and to contribute to the process necessary for innovation development						research in the identification of practices and tools that facilitate the implementation of innovation in the health sector in order to transform the sector into one which is dynamic, profitable and human center
8	Roncarolo, Federico Boivin, Antoine Denis, Jean-Louis Hebert, Rejean Lehoux, Pascale	2017	What Do We Know About the Needs and Challenges of Health Systems? Scoping Review of International Literature	Health Sciences and Services	Database search to identify scientific articles published in English, French and Italian between January 2000 and April 2016 that address healthcare system needs and challenges	Systematic Review	None	Research of 292 articles	Review article	_	292 articles were included in our scoping review. 33.6% of these articles were empirical studies and 60.1% were specific to countries falling within the very high HDI category, in particular the United States.
9	Diana Bowser, Susan Powers Sparkes, Andrew Mitchell, Thomas J Bossert, Till Bärnighausen, Gulin Gedik and Rifat Atun	2014	Global Fund Investments in Human Resources for Health: Innovation and Missed Opportunities for Strengthening Health Systems	Health Sciences and Services, Health Policy and Services	To determine the scope and impact of the investments made by the Global Fund, the largest non-governmental investor in the fight against AIDS, Tuberculosis and Malaria.	Mixed Research Methodology	Interview	159 people were interviewed	Research article	In funding rounds 1–7, the six countries we studied in detail were awarded a total of 47 grants amounting to US$1.2 billion and HRH budgets of US$276 million, of which approximately half were invested in disease-focused in-service and short-term training activities.	Global Fund support for training and salary support was not co-ordinated with national strategic plans and there were major deficiencies in the data collected by the Global Fund to track HRH financing and to provide meaningful assessments of health system performance
10	Woodward, Aniek Fyfe, Molly Handuleh, Jibril	2014	Diffusion of E-health Innovations in 'Post-Conflict' Settings:	Health Policy and Services, Labor and Industrial Relations	To guide Everett Roger's innovation-decision model diffusion thematic analysis through a	Cross-sectional Qualitative Study	Interview	Interviews were conducted with 12 healthcare professionals	Research article	All health workers interviewed held positive perceptions of e-health, related to their beliefs that e-	Results from this study showed ICT based e-health innovations can relieve information and communication

	Patel, Preeti Godman, Brian Leather, Andrew Finlayson, Alexander		A Qualitative Study of the Personal Experiences of Healthcare Professionals		qualitative study conducted in 2012 through telephone interviews with 12 healthcare professionals of various staff and career stages from four post-conflict environments					health can help them to access information and communicate with other health workers.	needs of health workers in post-conflict settings.
11	Bholah, Leckraj Amal Beharee, Kemley	2017	Mobile Health Apps for Mauritius and Africa	Computer Science, Interdisciplinary Applications, Engineering, Multidisciplinary	To examine the potential of mobile health applications to meet healthcare challenges	None	None	None	Review article	_	Mauritius has the potential to emerge as a leading mobile application development platform. A user-driven innovative mobile health application developed in Mauritius, Doctor Assistant, had been discussed.
12	Zajicek, Hubert Meyers, Arlen	2018	Digital Health Entrepreneurship	Health Sciences and Services, Health Policy and Services, Medical Informatics	To evaluate the digital health innovation roadmap and the opportunities and challenges facing digital health entrepreneurs	None	None	None	Book Section	_	This chapter presents a Digital Health Innovation Roadmap and the opportunities and challenges confronting digital health entrepreneurs
13	Chu, Larry F. Shah, Ashish G. Rouholiman, Dara Riggare, Sara Gamble, Jamison G.	2018	Patient-Centered Strategies in Digital Health	Health Sciences and Services, Health Policy and Services, Medical Informatics	Exploring patient-centered strategies in digital health	None	None	None	Book Section	_	This chapter explores patient centric strategies in digital health and outlines the foundation of the Everyone Included™ initiative
14	Cordeiro, Joao V.	2021	Digital Technologies and Data Science as Health Enablers: Attractive Promises	General and Internal Medicine	To succinctly map the ethical, legal and social implications of the digital health field	PubMed and Google Scholar electronic platforms and general	General search	None	Review article	_	In conclusion, the ELSI of the digital health field are compelling and proportional to the positive impact of digital technologies in

			and Outline of Ethical, Legal and Social Challenges			search terms were used					healthcare. Consequently, normative orders such as law and ethics should act as beneficial limit-setters and promoters of just, creative and innovative realities.
15	Wen, Jun Deng, Peidong Fu, Qiang Chang, Chun-Ping	2022	Is Health Innovation Reducing the Burden of Disease? Comprehensive Evidence	City and Regional Planning	To investigate the effects of health innovation on disease burden using two measures of the ratio of R&D expenditures in health to GDP and health researchers for 70 countries covering the years 2001-2016 with a panel fixed effects model.	Two measures of the ratio of R&D expenditures in health to GDP and health researchers were used for 70 countries covering the years 2001-2016 with a panel fixed effects model	Analysis	None	Research article	Although this research offers governments and the public a holistic and diverse perspective on alleviating disease burden, it is not sufficient to just study how a single country can do so.	From the literature review and research findings, it find that the high level of disease burden in the world is mainly due to uneven medical development level among regions. Thus, economic development is the best way to reduce the disease burden
16	Scheplitz, Tim Kaczmarek, Stefanie Benedict, Martin Becker, J Novikov, D	2019	The Critical Role of Hospital Information Systems in Digital Health Innovation Projects	Business Computer Science, Information Systems Computer Science, Interdisciplinary Applications	A systematic presentation of facilitators and barriers to digital innovation projects in healthcare	None	None	None	Review article	_	The main contribution of this paper is the detailed description of a context-specific framework for the formalization of learning plus a systematic presentation of enablers and barriers of Dijital Innovation projects in healthcare.
17	Rey-Rocha, Jesus Lopez-Navarro, Irene	2014	The Fourth Mission of Hospitals and the Role of Researchers as Innovative Drivers	Information Science and Library Science	Exploring the role of researchers as innovative drivers in the public healthcare sector. Discussing the evolution of	None	None	None	Review article	_	The Triple Helix model is proposed for the analysis of the role of public hospitals in innovation processes

			in the Public Health Sector		hospital management from healthcare to the 'entrepreneurial hospital' model						

2.4. EVALUATION OF FINDINGS

The assessment of findings was evaluated in tables on the axis of the main findings reached, including the author of the studies, year, keyword, study subject or concept, and the 'Web of Science Core Collection' category. The purpose and scope of the studies were evaluated, and the study subject or concepts covered, as well as the method used, data collection tool, and sampling, were evaluated in tables depending on whether the studies were research articles.

The keyword is observed that the keywords are used at least three and at most nine. The word 'innovation' was used seven times, and the word 'health innovation' was used four times. It was determined that innovation was used as the keyword of 11 articles in total. It was determined that the keywords included innovation-related words, and the concept of 'novelty' was also used instead of innovation. It was observed that 'human resources management' was included in four articles, and the words 'health', 'health management' and 'health organization' were mentioned in 17 articles. Within the scope of the review, it is observed that the keyword 'digital health' is included in three articles, and the words 'e-health' and 'mobile health' are used in one article each. There were a total of four articles containing the keywords 'team satisfaction', 'patient satisfaction', 'satisfaction', and 'job satisfaction', and it has been determined that there is one article each containing the words 'big data', 'telemedicine' and 'informatics'. It was observed that the terms 'Health trends', 'R and D programme', 'hospital' and 'hospital information applications' were used as keywords in one article.

The publication year range of the articles is between 2014 and 2022. With five articles, the year most studies were published was 2017. While 2018 and 2014 ranked second with three studies, 2019 and 2022 ranked third with two studies. The years in which the fewest studies were published, with one publication each, were 2020 and 2021. There are no publications from 2015 and 2016 within the scope of the studies under review.

Summary information about the study subject or concept covered in the reviewed publications and the findings related to the Web of Science category are presented in Table 1. It covers the topics of innovation and sustainability in four articles covering employee and patient satisfaction. In four articles where health innovation is discussed, especially with the concept of digital health innovation, it is seen that the issues of entrepreneurship and patient focus are examined. It is observed that the data used in studies involving mixed methods and quantitative methods are meta-data. Among the qualitative study methods, there is one article in which focus group interviews were used, and it was seen that Everett Roger's "Diffusion of Innovations"

model was used. In the article using a qualitative data collection tool, it was determined that the telephone interview method was used. In a research conducted as a survey study, it was observed that a qualitative study was carried out with some interviewers determined as the second stage. In the article written to determine the needs and challenges of health systems, a database search of scientific articles addressing health system needs and challenges between 2000 and 2016 was conducted. In addition, in a study conducted in 2017, a literature review of studies conducted over a 10-year period was conducted. In the study where health expenditures of 70 countries were analyzed, 15 years of data were analyzed with a panel fixed effects model. It was observed that 8 of the 17 studies were studied within a theoretical framework. It has been observed that systematic literature search methods are also used in studies that can be called general literature reviews. It has been concluded that there are very few empirical studies in the field of health sector, innovation and human resources management. Therefore, it can be said that emphasis should be placed on empirical article research in which systematic review and meta-analysis methods will be used.

It is seen that five of the publications examined were written in the fields of health sciences and health policies. Within the scope of the research, it was observed that two publications were written in the field of labour and industrial relations, two publications were written in the field of management, two publications were written in the field of information and computer informatics, and one publication was written in the fields of city and regional planning, general and internal medicine, clinical psychology, information science (library science) and nursing. The reason why the distribution is so heterogeneous can be explained by the fact that innovation has recently taken place in every science/university department.

When the methods used in publications were examined, it was determined that field research findings were reported in a total of seven articles. In four of these studies, it was determined that primary data was collected and evaluated by applying a survey based on the quantitative method. Another study used a mixed research methodology in which both quantitative data were obtained through the survey method and qualitative interview data were collected. In two studies, it was determined that only qualitative data were collected, and the findings were reported. The study, which included both quantitative and qualitative research, aimed to analyze the satisfaction of interprofessional team members; following a survey conducted on 409 people, the research was deepened by interviewing 15 people from the teams with high scores. Based on health innovation, "Does Health Innovation Reduce the Burden of Disease? In the study titled "Comprehensive Evidence", it was observed that the data of 70 countries between 2001 and 2016 were analyzed, and a detailed analysis was made for health R&D studies within the scope of health innovation. Although there are studies with a larger population, the study titled "Talent Management Model for Nurses Working in Malawi Public Hospitals" was conducted quantitatively by applying the Human Capital Index Survey adapted to public hospitals, Minnesota Job Satisfaction Survey (MSQ), Innovative Work Behavior Scale (IBS), Utrecht, the research was conducted (cross-sectional). It was found to be the most comprehensive research article using the Work Engagement Scale (UWES) and Career Orientation

Inventory (COI). Spearman's rank correlation was used to determine the connection between variables in the study. In addition, the study is valuable as it is the only publication in which the search words' innovation', 'human resources management' and 'health sector' are included together.

Within the scope of the study, it is observed that five articles are compilations, one article is science mapping, and one article is a systematic review. In one article, panel data analysis was studied with the fixed effects model. Two studies are book chapters. The compilations were written on the subjects of digital technologies and digital health, mobile health applications, literature review in health innovation, digital technologies as health providers, and digital health initiatives. This situation can be explained by the reflection of technology, which has gained momentum with the globalization process and the incredible rapid advancement of Industry 4.0 in the field of health. Especially digital applications and, in this context, digital health applications have caught a big trend.

3. RESULTS AND DISCUSSION

The key characteristic of innovation in health is its ability to improve health outcomes and deliver value to patients, providers, and healthcare systems. Innovation in health typically involves the development and adoption of new technologies, processes, or models of care that lead to better health outcomes, increased efficiency, and enhanced patient experience. Economic and social factors are at the root of the changes that have taken place in the last decade and are still ongoing. In the health sector, the quality of service delivery and patient care are important cost items. This situation leads to the necessity of continuous improvement of the service provided.

The results of the interviews conducted at the Chilean Hospital are quite striking. Analysis of interviews identified five themes: attributes of interprofessional work; collaboration, communication, and social interaction; interprofessional team innovation; shared leadership; and interpersonal relationship interface work/social. This is important in terms of health policy and labor relations. The relationship between innovation and patient satisfaction is crucial in healthcare. Innovation can lead to improvements in the quality and efficiency of care, which can directly impact patient satisfaction. When healthcare organizations adopt innovative practices, technologies, and approaches that prioritize patient needs and preferences, it can result in higher levels of patient satisfaction. Patients are more likely to be satisfied with their care when they experience better outcomes, have easier access to services, and feel that their needs are being met effectively. Therefore, fostering a strong relationship between innovation and patient satisfaction is essential for delivering high-quality healthcare services.

Digital health is an area where the effects of innovation are clearly visible. In conclusion, the ELSI of the digital health field are compelling and proportional to the positive impact of digital technologies in healthcare. Consequently, normative orders such as law and ethics should act as beneficial limit-setters and promoters of just, creative and innovative realities.

Technological advances brought about by the globalization process affect countries at the macro level and institutions and organizations at the micro level. The formula to survive in this process is to catch up with technology and even be a pioneer in technology. Therefore, innovation activities are of great importance for businesses to both maintain and improve their status. In light of the changes experienced, innovative practices are essential in the health sector, as in every sector. Implementing innovative practices also affects the economic performance of countries, and more innovative initiatives can be realized thanks to the increase in economic performance.

It is the human resource that will develop and implement innovative approaches. The effective use of human resources depends on the effectiveness of human resources management. In line with this determination, this systematic review study was carried out in order to reveal the studies in scientific articles published in the international literature on innovation and human resources management in the health sector. Following the scanning process within the framework of predetermined parameters in the Web of Science Core Collection database, 17 articles on the subject were examined. Then, the articles were examined and evaluated in line with the determined parameters. According to the analysis made according to the keywords, purpose and subjects of the research, it was observed that although there are many articles on innovation in the health sector, minimal research has been done on innovation and human resources management in the health sector, and only a minor health innovation and human resources management are included.

It is observed that most survey studies are conducted in the field, and the focus is on employee and patient satisfaction in the context of innovation and innovation. As in other businesses, the way to provide better, higher quality and safer service in healthcare businesses is primarily through employee satisfaction. The working conditions of personnel employed in the health sector already contain a stress factor in itself. Therefore, the primary goal is to develop a systematic study on the satisfaction of health human resources. For the patient/customer-oriented approach, which is the key to a quality-based service approach, employee satisfaction must first be ensured. In light of this reality, it can be seen that the subject of satisfaction is included in studies.

It was determined that five of the empirical articles used the survey method as a data collection tool, two used interviews, and one used both a survey and an interview. Sample size varies in studies where the survey method is applied. In the articles in which qualitative studies were conducted, it was observed that the topics did not overlap with each other; one measured the perception of conflict, while the other was based on satisfaction. It has been observed that the field of digital health has been widely researched in studies written as compilations and book chapters. Recently, the importance of digitalization, which all countries have implemented with innovative approaches, has been demonstrated once again. When the studies are evaluated in general, it is observed that health institutions are multidisciplinary study areas, and research is conducted in different disciplines.

SAĞLIK SEKTÖRÜNDE INOVASYON VE INSAN KAYNAKLARI YÖNETIMI: SISTEMATIK DERLEME ÇALIŞMASI

1. GİRİŞ

Dünya genelinde ekonomik, sosyal ve kültürel bağlamda etkileşimi hızlandıran ve değiştiren teknolojik gelişmeler tüm sektörleri etkisi altına almıştır. Teknolojinin çalışma hayatına getirdiği önemli kazanımlardan biri de inovatif uygulamalardır. Sağlık sektöründe tele sağlık uygulamaları, yapay zeka ve makine öğrenimi teknikleri, mobil sağlık uygulamaları, genetik testler ve kişisel bazda gerçekleştirilen tıp uygulamaları, robotik sistemlerin cerrahi ameliyatlarda kullanılması inovatif uygulamaların başında gelmektedir. Bu uygulamalar sayesinde daha erişilebilir, etkin ve kaliteli sağlık hizmeti sunulmasına imkan tanınmakta; hasta odaklı yaklaşım sağlık kurumları için ön plana çıkmaktadır.

Sağlıkta insan kaynakları yönetimi sektöre özgü bir takım özellikler taşımaktadır. Personel planlaması sağlık işletmelerinde öncelikli konuların başında yer almaktadır. Sağlık işletmelerinin ihtiyacı doğrultusunda planlama yapılması, işletmenin hedef kitlesine, yatak sayısına, işyüküne vb. diğer faktörlere dayanarak doğru sayıda nitelikli işgücünün istihdam edilmesi önemlidir. Sağlık kurumları insan kaynakları bakımından birbirinden farklı birçok mesleğin istihdam edildiği işletmelerdir. İnovasyon uygulamalarında ise bahse konu meslekler için farklı yaklaşımların yer aldığı görülmektedir. Bu durum bir taraftan inovasyonun önemini arttırırken; diğer taraftan kurumların yönetim anlayışlarını değiştirmelerine sebep olmaktadır.

İnsan kaynakları yönetimi içinde inovasyon kavramı özellikle değişim sürecinin efektif olması bakımından önem taşımaktadır. İnovasyon sayesinde çalışanların adaptasyonu daha kısa sürede daha verimli olarak gerçekleşebilir. Bu süreçte çalışanların yeni beceri ve yetenek edinmeleri gerekebilmekte; inovasyon çalışanların bu becerileri kazanmaları için eğitim ve gelişim fırsatları sunarak onların potansiyellerini artırmada öncü rol oynayabilmektedir. İnovasyon süreçlerine dahil olan çalışanlar, kendilerini değerli ve önemli hissederler. Fikirlerinin dikkate alındığını görmek, motivasyonlarını artırabilir ve memnuniyetlerini yükseltebilir. Bu bakımdan inovasyon çalışma hayatında çalışanların motivasyonu ve eğitimi için önemli bir araç olarak görülebilir.

2. YÖNTEM

Bu çalışmanın temel amacı sağlık sektöründe insan kaynakları yönetimi alanında inovasyon konusu kapsamında yapılmış araştırmaların incelenmesidir. Araştırmanın yöntemi sistematik derleme (meta-sentez) olarak belirlenmiştir. Araştırmanın amacı kapsamında 'Web of Science Core Collection' veri tabanında belirlenen ölçütlerle 'inovasyon' ve 'insan kaynakları yönetimi' kavramları ile ilişkili "İnovasyon" AND "İnsan Kaynakları yönetimi", "İnovasyon" AND "Sağlık Sektörü", "İnovasyon" AND "İnsan Kaynakları Yönetimi" AND "hastane", "İnovasyon" AND "İnsan Kaynakları Yönetimi" AND "Sağlık", "İnovasyon" AND "İnsan Kaynakları

Yönetimi" AND "Sağlık Sektörü", "Yenilikçilik" AND "İnsan Kaynakları Yönetimi" AND "Sağlık Sektörü", "Yapay Zeka" AND "İnsan Kaynakları Yönetimi" AND "Sağlık Sektörü", "Yapay Zeka" AND "İnsan Kaynakları Yönetimi" AND "Hastane", "Yenilikçilik" AND "İnsan Kaynakları Yönetim" AND "Hastane" anahtar kelimeleriyle yapılan araştırmalar analiz edilerek çıkarım yapılmıştır.

Araştırma kapsamında inovasyon ve insan kaynakları yönetimi anahtar kelimelerini içeren toplam 415 çalışma yapıldığı, inovasyon ve sağlık sektörü anahtar kelimelerini içeren toplam 464 çalışma yapıldığı görülmektedir. Yapılan çalışmalar konularının içeriği ve tekrarlama durumları incelenerek elemeye tabi tutulmuştur. Son 10 yıl içinde yapılan çalışmalar ve ilgili kriterler kapsamında toplam 17 makale incelenmiştir. İncelenen makaleler araştırmacı tarafından belirlenen ölçütlere göre (anahtar kelime, çalışma konusu, yayının yapıldığı yıl, kullanılan yöntem, ölçek, örneklem büyüklüğü, yazıldığı bilim/anabilim dalı, çalışmanın türü olmak üzere ulaşılan temel bulgular) değerlendirilmiştir.

4. BULGULAR

Araştırmadan elde edilen sonuçlara göre; inovasyon kavramı ile direkt ilintili olarak insan kaynakları yönetimini içeren sadece bir çalışmanın mevcut olduğu görülmüştür. Makalelerde çalışılan konuların genellikle inovasyon, insan kaynakları ya da inovasyon, sağlık sektörü olduğu görülmüştür. Çalışan ve hasta memnuniyetini içeren dört makalede yenilikçilik e-sürdürülebilirlik konularını içermektedir. Sağlık inovasyonun özellikle dijital sağlık inovasyon kavramı ile ele alındığı üç makalede girişimcilik ve hasta odaklılık konularının mercek altına alındığı görülmektedir.
Şili Hastanesi'nde yapılan görüşmelerin sonuçları oldukça çarpıcıdır. Görüşmelerin analizi beş tema belirlemiştir. Bunlar; meslekler arası çalışmanın nitelikleri, iş birliği, iletişim ve sosyal etkileşim; meslekler arası ekip inovasyonu, paylaşılan liderlik ve kişiler arası ilişki. Bu durum, sağlık politikası ve çalışma ilişkileri açısından önemlidir.

İnovasyon ve hasta memnuniyeti arasındaki ilişki sağlık hizmetlerinde çok önemlidir. İnovasyon, bakım kalitesi ve verimliliğinde iyileşmelere yol açabilir ve bu da hasta memnuniyetini doğrudan etkileyebilir. Sağlık kuruluşları, hasta ihtiyaçlarına ve tercihlerine öncelik veren yenilikçi uygulamaları, teknolojileri ve yaklaşımları benimsediğinde, bu durum daha yüksek düzeyde hasta memnuniyeti ile sonuçlanabilir. Karma yöntem ve nicel yöntemin yer aldığı çalışmalarda kullanılan verilerin meta-veri olduğu gözlenmektedir. Nitel çalışma yöntemlerinden odak grup görüşmesinin yapıldığı bir adet makale yer almaktadır. 17 çalışmanın sadece üçünde teorik çerçevede çalışıldığı görülmüştür. Genel literatür incelemesi denilebilecek nitelikteki çalışmalarda sistematik literatür araması yöntemlerinin de kullanıldığı gözlenmiştir. Sağlık sektörü, inovasyon ve insan kaynakları yönetimi alanında ampirik çalışma sayısının çok az olduğu çıkarımı yapılmıştır. Bu nedenle alanda sistematik derleme, meta-analiz yöntemlerinin kullanılacağı ampirik makale araştırmalarına ağırlık verilmesi gerektiği söylenebilir.

5. TARTIŞMA

Yayınlarda kullanın yöntemler incelendiğinde; toplam yedi makalede alan araştırması bulgularının raporlandığı tespit edilmiştir. Bu çalışmalardan dördünde nicel yönteme dayalı anket uygulaması yapılarak birincil veri toplandığı ve değerlendirildiği tespit edilmiştir. Diğer bir çalışmada ise hem anket yöntemiyle nicel veriye ulaşıldığı hem de hem de görüşme nitel verisinin toplandığı karma araştırma metodolojisine yer verilmiştir. İki çalışmada ise sadece nitel verilerin toplandığı ve bulguların raporlandığı tespit edilmiştir. Hem nicel hem nitel araştırmayı kapsayan çalışmada meslekler arası ekip üyesinin memnuniyeti analiz edilmeye çalışılmış, 409 kişi üzerinde yapılan anket çalışmasının ardından puanı yüksek olan ekiplerden 15 kişi ile görüşme yapılarak; araştırma derinleştirilmiştir. Evrenin daha geniş olduğu araştırmalar mevcut olsa da "Malavi Devlet Hastanelerinde Çalışan Hemşireler için Yetenek Yönetimi Modeli" adlı çalışmanın kamu hastaneleri üzerine uyarlanmış İnsan Sermayesi Endeksi Anketi, Minnesota İş Memnuniyeti Anketi (MSQ), Yenilikçi Çalışma Davranışı Ölçeği (IBS), Utrecht uygulanarak nicel bir araştırma (kesitsel) yürütülmüştür. İşe Bağlılık Ölçeği (UWES) ve Kariyer Oryantasyon Envanteri (COI)'nin kullanıldığı en kapsamlı araştırma makalesi olduğu görülmüştür. Çalışmada değişkenleri arasındaki bağlantıyı belirlemek için Spearman's rank korelasyonu kullanılmıştır. Ayrıca çalışma 'inovasyon', 'insan kaynakları yönetimi' ve 'sağlık sektörü' arama kelimelerinin bir arada yer aldığı tek yayın olması bakımından değerlidir.

SONUÇ

Yapılan çalışmalarda, meta-analiz ya da bibliyometrik analiz yönteminin çok az sayıda olduğu tespit edilmiştir. Alanda daha ziyade anket çalışması yapıldığı, inovasyon ve yenilik bağlamında çalışan ve hasta memnuniyeti üzerine odaklanıldığı görülmektedir. Diğer işletmelerde olduğu gibi sağlık işletmelerinde de daha iyi, kaliteli, güvenli hizmet verebilmenin yolu öncelikle çalışan memnuniyetinden geçmektedir. Sağlık sektöründe istihdam edilen personelin çalışma koşulları zaten başlı başına stres faktörü içermektedir. Bu nedenle, öncelikli hedef sağlık insan kaynağının memnuiyeti üzerine bir çalışma sistematiği geliştirmektir. Kalite temelli hizmet anlayışının anahtarı konumundaki hasta/müşteri odaklı yaklaşım için öncelikle çalışan memnuniyetinin sağlanması gerekmektedir. Bu gerçeklik ışığında memnuniyet konusuna çalışmalarda yer verildiği görülmektedir. Son dönem özellikle tüm ülkelerin inovatif yaklaşımlar bünyesinde uygulamaya koyduğu dijitalleşmenin önemi bir kez daha ortaya konmuştur.

Şili'de yapılan çalışmada; meslekler arası çalışmanın nitelikleri, işbirliği, iletişim ve sosyal etkileşim, meslekler arası ekip inovasyonu, paylaşılan liderlik ve kişiler arası ilişki konularının önemli temalar olduğu görülmüştür. Bununla birlikte 534 hemşireyi kapsayan çalışmanın sonuçlarına göre hizmet odaklı yaklaşımın hasta memnuniyeti üzerinde anlamlı bir pozitif etkiye sahip olduğunu ve hemşireler arasındaki içsel pazarlama algısının hizmet odaklı yaklaşım ile hasta memnuniyeti arasındaki ilişki üzerinde anlamlı bir pozitif moderatör etkiye sahip olduğu görülmüştür. Sağlık insan

kaynakları ve inovasyon alanında önemli bir hale gelen dijital sağlık ve dijital teknolojiler için yaratıcı ve yenilikçi gerçekliklerin faydalı sınır belirleyicileri ve destekleyicileri olarak hareket etme gerekliliğini ortaya koymuştur.

Çalışmalar genel olarak değerlendirildiğinde; sağlık kurumlarının multidisipliner bir çalışma alanı olduğu ve farklı disiplinlerde araştırma yapıldığı gözlenmiştir. İncelenen yayınlardan beşinin sağlık bilimleri ve sağlık politikaları alanlarında yazıldığı görülmektedir. Araştırma kapsamında iki yayının çalışma ve endüstri ilişkileri alanında, iki yayının yönetim alanda, iki yayının bilgi ve bilgisayar bilişim alanında, birer yayının da şehir ve bölge planlaması, genel ve dahili tıp, klinik psikoloji, bilgi bilimi (kütüphane bilimi) ve hemşirelik alanlarında yazıldığı görülmüştür. Dağılımın bu kadar heterojen olması nedeni son dönemde inovasyonun her bilim/anabilim dalında yer almasıyla açıklanabilir.

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