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Distance Education through the Perspective of Students of Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician Programs

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Abstract

Aim: The study aimed to evaluate the distance education process through the perspective of associate degree programs and to identify crucial issues for potential future pandemics.
Methods: The study group (n=166) consisted of associate degree students of the Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician Programs. Data were collected through an electronic questionnaire regarding main headings: "Theoretical Courses, Practical Courses, and Professional Development", "Course Participation and Motivation", "Measurement and Evaluation", and "Student Suggestions for Distance Education". Questions and statements were scored by 5-point Likert.
Results: When the effects of distance education *"On the level of internalization of the profession"* and *"On the effect on professional competencies"* were assessed, the scores of Medical Imaging Technician Program students were lower than the scores of Anesthetic Technician Program students and Emergency Medical Technician Program students ($p<0.05$). Most of students from Anesthetic Technician Program (96.7%) prefer *"YouTube content to support their learning, in addition to the course content offered by the faculty member"*. In addition, 55.7% of Anesthetic Technician Program students stated that the *"Ideal education model is a hybrid model that combines face-to-face and distance education".*
Conclusion: Different acceptance levels for distance education were observed. A hybrid model may be an option for future education models when appropriate conditions are provided.

Keywords: Distance Learning, Measurement and Evaluation, Anaesthesia Program, Emergency Medical Technician Program, Medical Imaging Technician Program.

INTRODUCTION

During the pandemic, with the mandatory change over to distance education, problems arose in process management, adaptation of educational contents to the new system, ensuring an effective communication environment between the faculty members and the students, management of exams, evaluation and measurement processes (Al-Balas vd., 2020) and continuity in delivering healthcare with a patient safety-oriented team approach (Puljak vd., 2020). However, no research or assessments exist on how the compulsory distance education process has affected the students of the Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician Programs at the associate degree level, an intensive education program for clinical practice. In the same context, Anesthetic Technician Program students at the associate degree level are healthcare professionals who carry out the necessary preparations for anesthesia applications before surgery (Shallik vd., 2022), Emergency Medical Technician Program students are health care professionals who can perform emergency medical intervention during pre-hospital medical care (Ozainne vd.,

2023), and Medical Imaging Technician Program students are healthcare professionals actively involved in the process of radiological examinations (Kasban vd., 2015).

In this context, the study aimed to evaluate the distance education process through the perspective of Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician associate degree programs and to identify crucial issues for potential future pandemics.

During the online education process in the field of health sciences, the interruption of clinical practice training and the inability to support theoretical knowledge with practice caused associate degree students to be concerned about their professional development (Mortagy vd., 2022) (Abbasi vd., 2020) (Chakraborty vd., 2020). Interprofessional learning is essential for improving patient safety and continuity of service in healthcare delivery (Jones vd., 2020) (Ozainne vd., 2023). During the pandemic, ensuring the stable continuity in delivering healthcare with a patient safety-oriented team approach was an element that could also affect the interprofessional learning process (Khalil et al., 2020; Merga, 2016; Singh & Matthees, 2021).

When studies in this field are examined in general, it is observed that the adverse effects of COVID-19 have been experienced intensively at undergraduate education levels in medicine (Holzmann-Littig et al., 2022), nursing (Wallace et al., 2021) and dentistry (Lollobrigida vd., 2022; Mumcu vd., 2022) (Al-Balas vd., 2020; Arain vd., 2022; Elshami vd., 2021; Holzmann-Littig vd., 2022; Hsu vd., 2022; Kanagaraj vd., 2022; Nguyen vd., 2022; Puljak vd., 2020; Wallace vd., 2021; Yousry & Azab, 2022). However, no research or assessments exist on how the compulsory distance education process has affected the students of the Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician Programs at the associate degree level, an intensive education program for clinical practice.

1. RESEARCH METHODOLOGY

Study design: This cross-sectional study was conducted at a Foundation University on the Anatolian side of Istanbul, providing education with 320 students in associate degree programs. The study group consisted of associate degree students of the Anesthetic Technician, Emergency Medical Technician, and Medical Imaging Technician Programs in a Foundation University (Table 1).

Although all students were invited to the online survey, the minimum sample size was calculated as 160 at 90% confidence level with an absolute precision of 5% for the study by using G power 3.1. In the study, 166 associate degree students participated to the online survey.

Setting: On-line "Blackboard Learn" is the learning management system used by all students participating in the study. As of the 2021-2022 academic year, with the prevailing pandemic, theoretical courses were held online while practical courses were taught primarily face-to-face, and also online when necessary, depending on the course of the pandemic. In addition to theoretical courses, practical courses, and summer internships were also held as hybrid. Students of the Anesthetic Technician and Emergency Medical Technician Departments at the associate degree level also worked in hospitals as student interns once a week during the semester. The Medical Imaging Technician Program includes theoretical courses, practical courses, and summer internships. Student subjects attending all the three programs at the associate degree level completed the "Summer internship" programs in their curricula, either by doing assigned projects or by working in a hospital environment, according to their preferences during the 2021-2022 academic year.

Participants: A total of 166 students (F/M:127/39; mean age: 20.70±2.51 years) studying at the Associate levels participated in this research.

Data sources: The study data were obtained by performing an e-survey with students via e-mail and SMS by the university at which the research was conducted between September 10. 2021, an d March 08. 2022. Before starting the e-survey, an information screen was established for the stu dents, and they were allowed to participate in the research upon their consent. The permission wa s approved by the Ethics Committee of Maltepe University (No: 2021/16-05).

Data for the distance education process were collected using a structured e-questionnaire form. The questions in this form were prepared by the researchers, taking into account the existing literature (Al-Balas vd., 2020; Bal, 2017; Chandrasinghe vd., 2020; Ibrahim vd., 2021; Khalil vd., 2020; Khoshhal vd., 2017; Kurtgöz, 2020; Mumcu vd., 2022; Puljak vd., 2020).

The students' answers to the e-survey/e-questionnaire were classified under the following main headings: "Theoretical Courses, Practical Courses, and Professional Development", "Course Participation and Motivation", "Measurement and Evaluation", and "Students' Suggestions for Distance Education". Items and statements were assessed by the 5-point Likert scoring method (1: Strongly disagree - 5: Strongly agree), while the questions and statements covering professional

development were evaluated with the 3-point scoring system (1: Decreased, 2: Neither decreased nor increased, 3: Increased).

Since the distribution of measurement data, including item scores in the e-survey form did not comply with normal distribution, non-parametric tests, Mann-Whitney U test, and Kruskal-Wallis test were used in the analysis. The chi-square test was used to compare categorical data. The statistical significance level was accepted as $p<0.05$. Data were analyzed using the IBM SPSS 28.0 (SPSS Inc., Chicago, IL, USA) statistical software.

Ethics statement: The study was approved by the Ethics Committee of Maltepe University (No: 2021/16-05), and informed consent was obtained from the students to participate in this study.

2. ANALYSIS

Theoretical Courses, Practical Courses, and Professional Development: According to the study data, when the scores given by the students to the statements "I am able to associate theoretical knowledge with clinical applications" and "Theoretical courses are more efficient" were analyzed, it was observed that the scores of the Anesthetic Technician Program students in the Associate Degree group (3.36±0.93),(2.66±1.28) were higher than the scores of the Emergency Medical Technician Program students (3.04±1.21),(2.36±1.20) and Medical Imaging Technician Program students (2.49±0.84), (2.15±1.01) ($p<0.05$) (Table 1).

When the scores given by the students to the statements "Not being able to practice what I learned theoretically negatively affects my professional development" and "I have difficulty focusing on practical courses" were analyzed, it was observed that the scores of Medical Imaging Technician Program students in the associate degree group (4.29±1.06),(3.87±1.13) were higher than those of Anesthetic Technician Program students (3.73±1.17),(2.79±1.44) and Emergency Medical Technician Program students (3.64±1.42),(2.88±1.42) ($p< 0,05$) (Table 1).

Another point to be noted was the effect of distance education "On the level of internalization of the profession" and "On the effect on professional competencies". In the analysis of the responses, it was observed that the scores of Medical Imaging Technician Program students (1.65±0.55), (1.65±0.48) were lower than the scores of Anesthetic Technician Program students (2.02±0.62),(2.00±0.57) and Emergency Medical Technician Program students (2.04±0.77),(1.98±0.76) ($p<0.05$) (Table 1).

Participation in Courses and Motivation: The next point we analyzed was the correlation between participation in courses and motivation, based on the scores given by the students to the statements "Motivation to participate in courses is higher than in face-to-face education", "Motivation to learn is higher than in face-to-face education", and "Time to study in courses is higher than in face-to-face education", It was observed that the scores of Anesthetic Technician Program students (2.31±1.20),(2.33±1.26),(3.26±1.23) were higher than the scores of Emergency Medical Technician Program students (1.82±1.08),(1.73±0.91),(2.39±1.16) and Medical Imaging Technician Program students (1.66±0.97),(1.64±0.85),(2.45±1.35) ($p<0.05$) (Table 1).

Table 1. The effects of distance education on theoretical courses, practical courses, professional development, course participation and learning motivation

	Associate Degree Programs					
	Anesthetic Technician (F/M: 49/12)		Emergency Medical Technician (F/M: 36/15)		Medical Imaging Technician (F/M: 42/12)	
	Mean	SD	Mean	SD	Mean	SD
I was able to associate theoretical knowledge with clinical applications	3.36	0.93	3.04	1.21	2.49	0.84
Theoretical courses are more efficient	2.66	1.28	2.36	1.20	2.15	1.01
Not being able to practice what I learned theoretically negatively affects my professional development	3.73	1.17	3.64	1.42	4.29	1.06
I had difficulty focusing on practical courses	2.79	1.44	2.88	1.42	3.87	1.13
The effect on the level of internalization of the profession [x]	2.02	0.62	2.04	0.77	1.65	0.55
The effect of distance education on the effect on professional competencies [y]	2.00	0.57	1.98	0.76	1.65	0.48
Motivation to participate in courses is higher than in face-to-face education	2.31	1.20	1.82	1.08	1.66	0.97
Motivation to learn is higher than in face-to-face education	2.33	1.26	1.73	0.91	1.64	0.85
Time to study in courses is higher than in face-to-face education	3.26	1.23	2.39	1.16	2.45	1.35

**Data were collected with 5-point Likert Scale Scoring Method (1: Strongly Disagree - 5: Strongly Agree).*

Measurement and Evaluation: The next topic that was covered in the study was "Measurement and Evaluation" of the students' output in the forms of assignments and exams. According to the data obtained, 86% of Medical Imaging Technician Program students (n=43) stated that "Faculty members organized activities for measurement and evaluation in addition to midterm and final

exams" (Table 2). The results were as follows: 81.6% of First and Emergency Aid Program students (n=40) stated that "Faculty members provide feedback to students after evaluation of assignments/cases" (Table 2).

83.7% of First and Emergency Medical Technician Program students (n=41) stated *"Feedback is received by students regarding the evaluation and assessment processes of the course"* (Table 2).

Another challenging aspect of the distance education for students was the management of the process and exam anxiety. The research results were as follows: 62.0% of Medical Imaging Technician Program students (n=31) determined *"The difficulty of process management" as one of the factors causing exam anxiety in the distance education process"* (Table 2).

In addition to the "Process management", "Time management" was also stated as a factor causing anxiety.

78.0% of Medical Imaging Technician Program students (n=39) determined *"Insufficient exam time" as one of the factors causing exam anxiety during the distance education process* (Table 2).

The third factor which caused exam anxiety was noted as "Technical difficulties", and the responses were thus: 73.4% of Anesthetic Technician Program students (n=44) stated that *"Technical difficulties" are one of the main factors that caused exam anxiety during the distance education process* (Table 2).

Students' Suggestions for Distance Education: The students also came up with responses suggesting practices to overcome the predicaments of distance education. 70.6% of *Emergency Medical Technician Program* students (n=36), stated that *"Case discussion is an effective method in their professional development"*. The ideal education model was rated by the same groups of students as follows: 55.7% of Anesthetic Technician Program students (n=34) stated that the *"Ideal education model is a hybrid model that combines face-to-face and distance education"*. 96.7% of Anesthetic Technician Program students (n=58) prefer *"YouTube content" to support their learning, in addition to the course content offered by the faculty member*.

Table 2. Measurement and evaluation process and factors causing exam anxiety in distance education

		Associate Degree Programs					
		Anesthetic Technician		Emergency Medical Technician		Medical Imaging Technician	
		n	%	n	%	n	%
Faculty members organize activities for measurement and evaluation in addition to midterm and final exams (quiz, homework, presentation, etc.)	Never/Rarely/Some times	9	15.0	14	28.0	7	14.0
	Very Often/Always	51	85.0	36	72.0	43	86.0
	Total	60	100	50	100	50	100
Faculty members provide feedback to students after evaluation of assignments/cases	Never/Rarely/Some times	14	23.3	9	18.4	14	28.6
	Very Often/Always	46	76.7	40	81.6	35	71.4
	Total	60	100	49	100	49	100
Feedback is received from students regarding the measurement and evaluation processes of the course	Never/Rarely/Some times	16	28.1	8	16.3	15	30.0
	Very Often/Always	41	71.9	41	83.7	35	70.0
	Total	57	100	49	100	50	100
Process management is difficult in distance education	Never/Rarely/Some times	27	45.8	29	58.0	31	62.0
	Very Often/Always	32	54.2	21	42.0	19	38.0
	Total	59	100	50	100	50	100
Exam times are insufficient	Never/Rarely/Some times	34	56.6	28	55.0	39	78.0
	Very Often/Always	26	43.3	23	45.1	11	22.0
	Total	60	100	51	100	50	100
Technical difficulties may be experienced during the exam	Never/Rarely/Some times	44	73.4	34	68.0	35	70.0
	Very Often/Always	16	26.7	16	32.0	15	30.0
	Total	60	100	50	100	50	100

3. CONCLUSION/DISCUSSION AND RECOMMENDATIONS

Recently, it has become critical to ensure the continuation of the education processes for health professionals during national and/or global emergencies (Dost vd., 2020). Since the weaknesses in the educational processes regarding associate degree students, whose education is mainly based on practice, was not evaluated comprehensively during the COVID-19 pandemic, this cross-sectional study aimed to evaluate the distance education process during the COVID-19 pandemic through the perspective of associate degree and to identify crucial issues.

The lowest scores for the statements *"I was able to associate theoretical knowledge with clinical applications", "Theoretical courses are more efficient", "Motivation to participate in courses is higher than in face-to-face education", "Motivation to learn is higher than in face-to-face education"*, and *"Time to study in courses is higher than in face-to-face education"* were received from students of the *Medical Imaging Technician Program*.

Confirming their negative responses to the previous statements, the same group of students gave the highest scores to the statements, *"Not being able to practice what I learned theoretically negatively affects my professional development", "I had difficulty focusing on practical courses", "Distance education affected my level of internalization of the profession negatively", and "Distance education adversely affected my professional competencies".* The responses given to these two sets of responses, determined that the students of the Medical Imaging Technician Program are the group that experienced the highest degree of difficulty in internalizing job processes required specifically for their profession. It could be interpreted that medical Imaging Technician Program is a program which relies little on communicating with patients; whereas, technical teaching (and practising) is more intensive compared to the Anesthetic and Emergency Medical Technician Programs. It has been observed that these students constitute the cohort facing the greatest challenge in internalizing profession-specific job applications. This observation may be attributed to the nature of Medical Imaging Technician Program, which places a higher emphasis on technical instruction and involves relatively less patient communication when compared to the Anesthetic and Emergency Medical Technician Programs.

As the results suggest, the students of the Anesthetic Technician Program are less affected by the on-line education process, and their motivation is higher than the other groups. This could be due to the fact that *Anesthetic Technicians* work in the operating rooms and pain rooms of hospitals. The higher motivation of these students may be because they consider themselves as part of the solution in medical case management, and challenging situations can be managed in accordance with the curricula and professional definitions of the *Anesthetic Technician* Programs. The heightened motivation of these students may arise from their perception of being integrated into the solution for the management of a medical case, and their belief that challenging situations can be managed in accordance with the curricula and professional standards set by *Anesthetic Technician* Programs. (Hsu vd., 2022; Ozainne vd., 2023).

It has been ascertained that *Emergency Medical Technician* Program students had difficulty in internalizing theory and practice via distance learning, however, they were able to focus on theoretical courses and relate clinical and practical applications to a certain extent. Considering the diversity of cases that may be encountered within the scope of the Emergency Medical Technician Program, the limitation on clinical practices during the pandemic caused students to have difficulty in internalizing theoretical courses during actual practice with patients. This situation corresponds to the literature (Ozainne vd., 2023) and is confirmed by the responses of the students in the associate; for example, the rate of agreement with the statement *"Motivation to learn is higher than in face-to-face education"* is low.

Two of the most challenging aspects within the context of distance education are "Measurement and Evaluation". Approximately three-quarters of the *Medical Imaging Technician* Program students in the associate degree group stated that *factors that cause exam anxiety in distance education are the "Difficulty of process management"* and *"Insufficient exam time"*. Approximately three-quarters of the Anesthetic Technician Program students stated that *"Technical difficulties" are the main factors that cause exam anxiety during the distance education process*. Technical difficulties experienced during the exam due to systemic failures may have occurred because the number of students in the *Anesthetic Technician Program* was higher than the number of students in other programs. Technical difficulties regarding problems with the internet connection during the exam coupled with the confusing and time-consuming nature of navigating through the questions can be considered a stress factor leading to time pressure anxiety about completing the exam within the given time (Abbasi vd., 2020).

Significant feedback was received when students were asked about the methods they considered to be beneficial for the Distance Education process. Approximately three-quarters of the Emergency Medical Technician Program students stated that the effective method for their professional development during the distance education process was *"Case discussion"*, and half of them stated that the ideal education model was "*Only face-to-face education*". Unlike the Emergency Medical Technician Program students, three-quarters of the Anesthetic Technician and Medical Imaging Technician Program students favored "*Video watching*" as the effective method for their professional development during the distance education process, and the other half preferred "*Face-to-face and distance education together*" as the ideal education model. Almost all of the Anesthetic Technician Program students prefer "*YouTube content*" to support their learning

in addition to the course content offered by the faculty member. The reason for this preference must be the regular and visually well-designed content on the YouTube platform, addressing the viewers' needs and preferences. (Dost vd., 2020).

The main limitation of the study was performed only one university. Therefore, the result of this study could not be generalised.

The results of this study encompass significant indications as they include the evaluation of distance education from the student at the associate degree level perspective for the foundation university where the study was conducted. However, it also seems that a hybrid model that can meet the needs of each group when appropriate conditions are provided may be an option for future education models.

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JHMT Editorial

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Human Resources in Health Management: A Bibliometric Review

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Abstract

Aim: The complex relationship between health management and human resources requires extensive study. Effective management, productivity, and quality increase in this field is possible through the strategic management of human resources. This study aimed to classify and analyze articles in health management journals under various subheadings.

Methods: In this study, the contents of human resources-themed articles in the field of health management in journals registered in the DergiPark system, published between 2018 and 2023, with the phrase "health management" or "health administration" in the journal name, were examined by bibliometric analysis. The collected data were processed in Microsoft Office 365. The field of human resources was divided into various subheadings.

Results: 181 articles selected were analyzed. Because of the bibliometric analysis, it was determined that the highest number of publications on human resources in health management were in the Hacettepe Journal of Health Administration, the years with the highest number of publications were 2023, the most studied sub-topic was the behavioral dimension, there were more

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double-authored publications, research articles, and quantitative methods were more preferred. The two scales were the most used quantitative methods.
Conclusion: The analyses in this study are expected to provide guiding information to researchers, policymakers, and health managers.

Keywords: Health management, human resources, bibliometric analysis.

INTRODUCTION

Health management is a complex and dynamic field. The World Health Organization has classified the main components of the health input system as human resources, service delivery, information, medical products, vaccines, drugs, technology, financing, and management. Human resources are recognized as one of the health system most fundamental and essential components (World Health Organization, 2006). Human resources have been described as "the heart of the health system", "the most important aspect of health systems" and "a critical component in health policy", as health professionals have a special responsibility to take care of the health of the population (Pham, 2021).

Despite the importance of human resources, there is consensus that they are a neglected component of health system development in many countries (Hongoro and McPake, 2004). However, there has been a growing interest in human resource management in healthcare services in recent years. Since human resources are recognized as one of the most critical inputs in health care services, it is crucial to manage human capital differently from physical capital (Kabene et al., 2006). The complex relationship between human resources and healthcare services is an area that needs to be studied extensively. Effective management, efficiency, and quality increase in this field is possible through the strategic management of human resources. Effective human resource management is also critical for quality service delivery and organizational efficiency. Successful human resources management in health services includes qualified personnel's employment, training, and motivation.

Considering the importance of human resource management in healthcare services, this study conducted a bibliometric analysis of the studies published on the subject. The bibliometric analysis method examines trends, authors, most cited studies, and methods in this field by using numerical data from scientific publications. Bibliometric studies are methods used to determine the status and development of the research field. In other words, the bibliometric method provides

a general picture of the research field (Merigó and Yang, 2017).

Many studies have been conducted on human resources with the bibliometric analysis method. Examples of these studies are as follows: digitalization in human resources management (Karaboğa and Karaboğa, 2022), employee experience concept (Gerçek, 2022), green human resources management (Korkmaz and Gültekin, 2023), artificial intelligence in human resources management (Kişi, 2022) and training and development in human resources management (Man et al., 2023).

Studies have also been carried out using this method in the field of health management. The topics of some of these studies are as follows: Graduate theses on organizational justice in healthcare workers (Korkmazer and Pirol, 2021), theses on organizational commitment in healthcare institutions (Özyurt and Özgen, 2020), research on strategic cost management in the field of healthcare management (Ünal and Çil Koçyiğit, 2023), articles published in national and international journals in the field of healthcare management (Eke et al., 2020), studies in the field of strategic management in health management (Öztürk and Ünal, 2023), theses conducted in the discipline of health management in Turkey (Şahin and Ocak, 2019), methods in articles published in Hacettepe Journal of Health Administration (Yılmaz et al., 2019), postgraduate theses on health tourism (Canik and Güneren Özdemir, 2019) and studies in the field of health tourism (Kazak and Kazak, 2023).

This research aims to determine the strengths and weaknesses of the studies on human resources in the national literature by analyzing the situation through parameters such as sub-topic, number of authors and citations, type, method, and year of publication and to provide comprehensive information for future studies on the subject.

Studies in the DergiPark system were examined to draw a general framework for studies on human resources in health services at the national level. To limit the scope of the research, in addition to the year criterion, special attention was paid to the fact that the journal names included the word phrases "health management/administration" or "healthcare management" and that the research topic was related to healthcare human resources.

It is thought that the analyses in this study will provide guiding information to researchers, policymakers, and health managers.

1. RESEARCH METHODOLOGY

Purpose of the Study: This study aimed to conduct a content analysis of human resources-themed studies in journals published in health management. This study aims to classify the recent studies under various sub-headings and create awareness of health human resources. The question "What is the distribution of studies on human resources in health management according to subheadings, and what are the methods of these studies?" was determined as the research question.

Method: Pritchard defined the bibliometrics used in this study as "the application of mathematics and statistical methods to books and other means of communication." Also, Fairthorne defined it as "the quantitative study of the characteristics of recorded discourse and related behaviors." (Pritchard and Wittig, 1981). Bibliometric analyses allow for a discussion of past research trends, problems, or corrections in the field of study and help to make accurate predictions about the direction of future trends (Eke et al., 2020).

DergiPark is a project of the Scientific and Technological Research Council of Turkey (TÜBİTAK), which provides hosting and publishing services to journals in Turkey and enables the journal publishing process to be realized more easily and quickly (Aslan, 2019).

In this study, the contents of human resources-themed articles in the field of health management in journals registered in the DergiPark system, published between 2018 and 2023, with the phrase "health management (sağlık yönetimi)" or "health administration (sağlık idaresi)" in the journal name, were examined by bibliometric analysis. The collected data were processed in Microsoft Office 365 application. The field of human resources was divided into various subheadings based on expert opinion and literature. These are the behavioral dimension, management, and leadership, training-development and career, performance evaluation, job evaluation and wage management, bureaucratic procedures, occupational health and safety, industry 4.0-artificial intelligence, health workforce, and communication. These articles were then classified according to their method (quantitative, qualitative, etc.), type (research article, review, etc.), number of authors, journals, and years of publication. In addition, classification was made according to whether the article was derived from a paper or a thesis. The number of scales used in the quantitative studies was also added as a parameter. Finally, the number of citations of the included studies was accessed and classified via "Google Scholar" on 15.03.2024.

Limitations of the Study: Among the journals publishing in the field of health management, those that do not include the phrase "health management (sağlık yönetimi)" or "health administration (sağlık idaresi)" in the journal name or publications on the subject before 2018 and after 2023 were not included in the study. In the journals included in the research, it was observed that studies on human resources increased after 2018 compared to previous years. For this reason, publications before 2018 were not included in our study. Studies on human resources not related to health management in journals meeting the criteria were also excluded. The fact that the number of publications in the six years of the journals meeting the requirements differed was also a limitation when comparing the journals.

Ethics Committee Permission: Because the bibliometric analysis method used in the study is based on a literature review and has no direct effect on any living creature, ethics committee permission was not obtained.

2. ANALYSIS

A total of 9 journals that met the criteria determined in the study were identified. These are Hacettepe Journal of Health Administration, International Journal of Health Management and Strategies Research (USAYSAD), Journal of International Health Sciences and Management (JIHSAM), International Journal of Health Administration and Education Congress (Sanitas Magisterium), International Journal of Health Management and Tourism (IJHMT), Journal of Healthcare Management and Leadership (JOHMAL), SDU Healthcare Management Journal, Journal of Health Sciences and Management (JOHESAM), and Journal of Health Management. A total of 896 articles published in these journals in the last 6 years were analyzed. 181 articles on human resources were included in the analysis. The studies included in the analysis were classified according to the total number of publications made in this process, the name of the journal in which they were published, the year of publication, the subtopic title, the number of citations, the number of authors, the type of article, the method used, and the number of scales. The numerical data obtained here were visualized using various graphs.

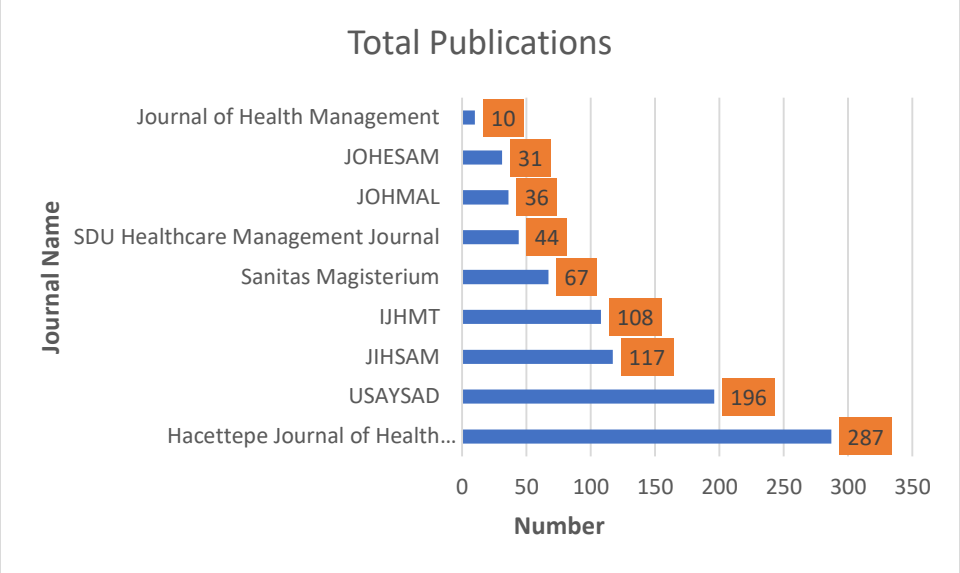

Figure 1. Total Publications

The number of articles published by the journals in the last six years is shown in Figure 1. Hacettepe Journal of Health Administration has published the most articles (287), while the Journal of Health Sciences and Management (31) and the Journal of Health Management (10) have published the fewest articles.

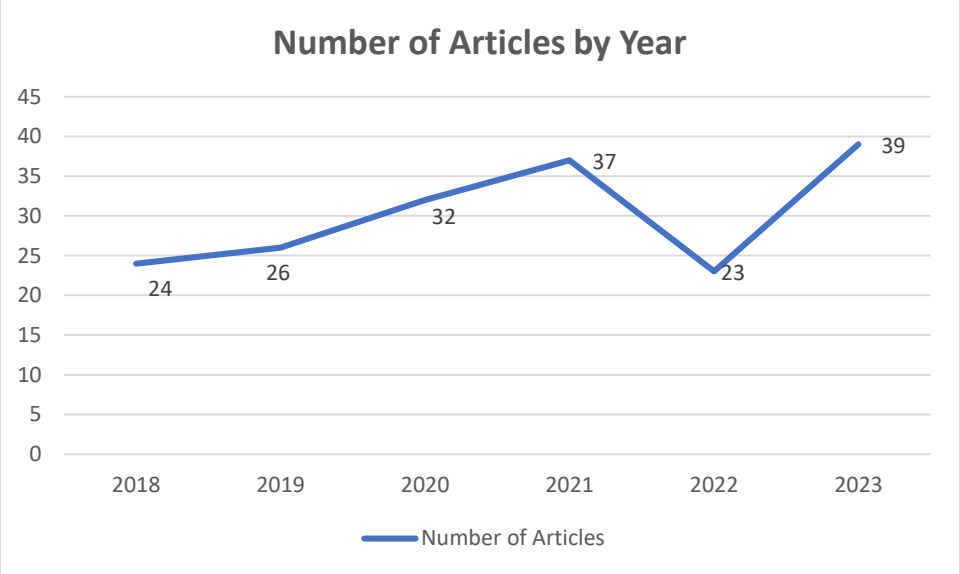

Figure 2. Number of Articles by Year

Looking at the number of publications of human resources studies by year, the most published year was 2023 with a total of 39 articles, while the least published years were 2018 (24) and 2022 (23) (Figure 2).

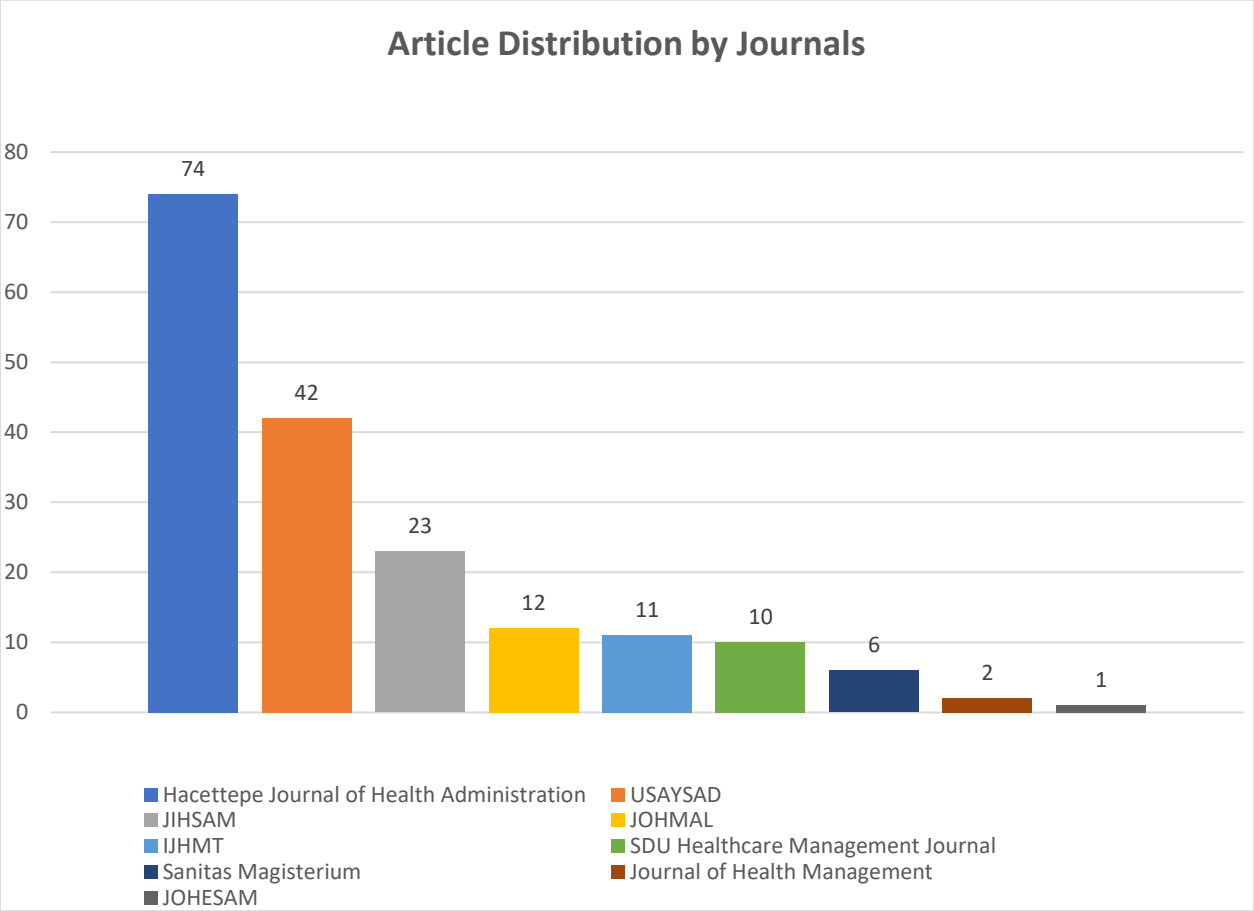

Figure 3. Article Distribution by Journals

As seen in Figure 3, the journal with the highest number of human resources studies was the Hacettepe Journal of Health Administration, with 74 articles. This was followed by USAYSAD (42), JIHSAM (23), JOHMAL (12), IJHMT (11), SDU Healthcare Management Journal (10), Sanitas Magisterium (6), Journal of Health Management (2) and JOHESAM (1).

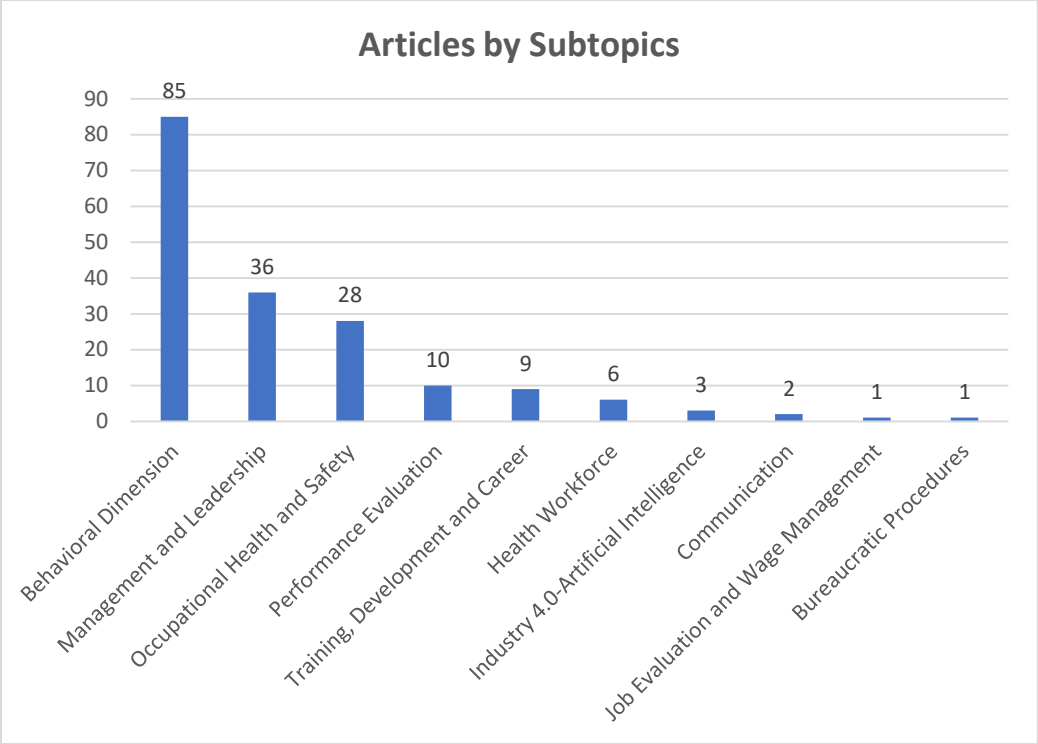

Figure 4. Articles by Subtopic

Figure 4 shows the distribution of studies according to subtopics in human resources. While the highest number of studies were on the behavioral dimension (85) and management and leadership (36), the lowest number of studies were on industry 4.0-artificial intelligence (3), communication (2), bureaucratic procedures (1) and job evaluation and wage management (1).

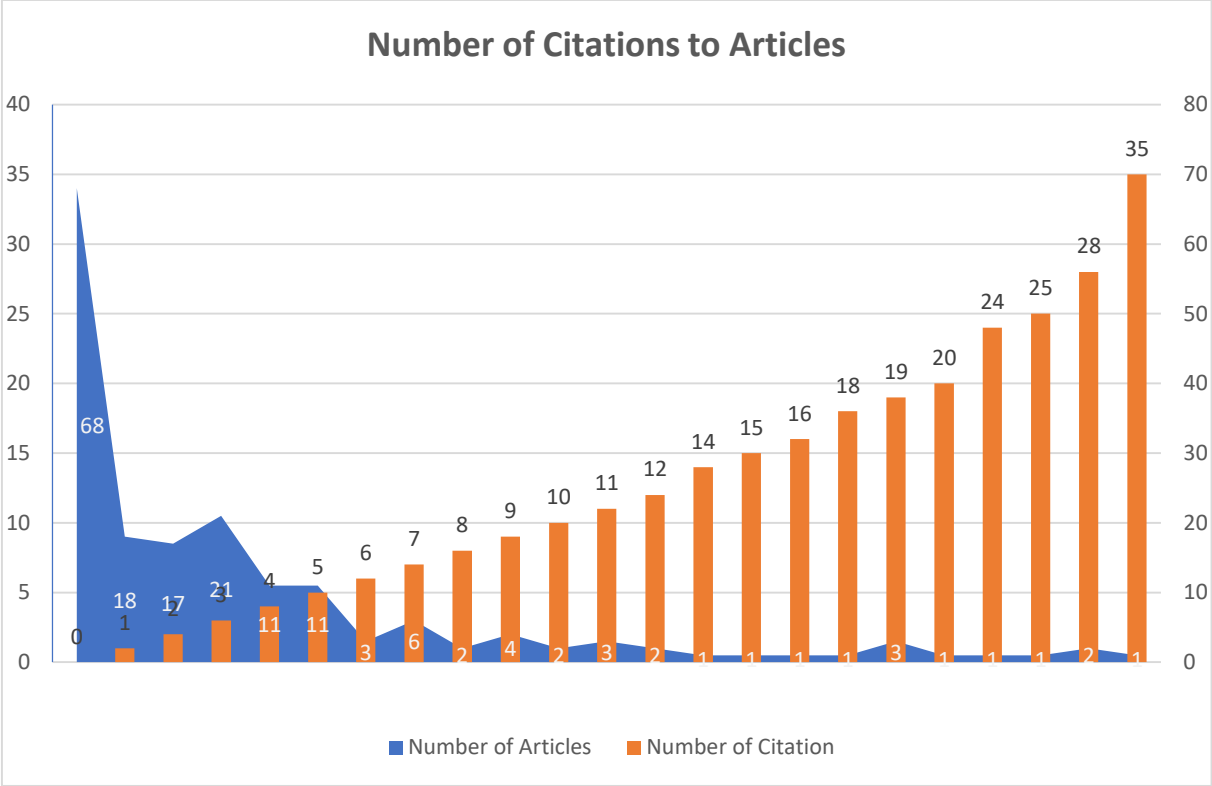

Figure 5. Number of Citations to Articles

Figure 5 shows the number of citations to the articles. Accordingly, 68 studies were not cited at all, 18 studies were cited once, 17 studies were cited two times, 21 studies were cited three times, and 20 studies were cited ten times or more. The most cited study topics were "management and leadership" and "behavioral dimension".

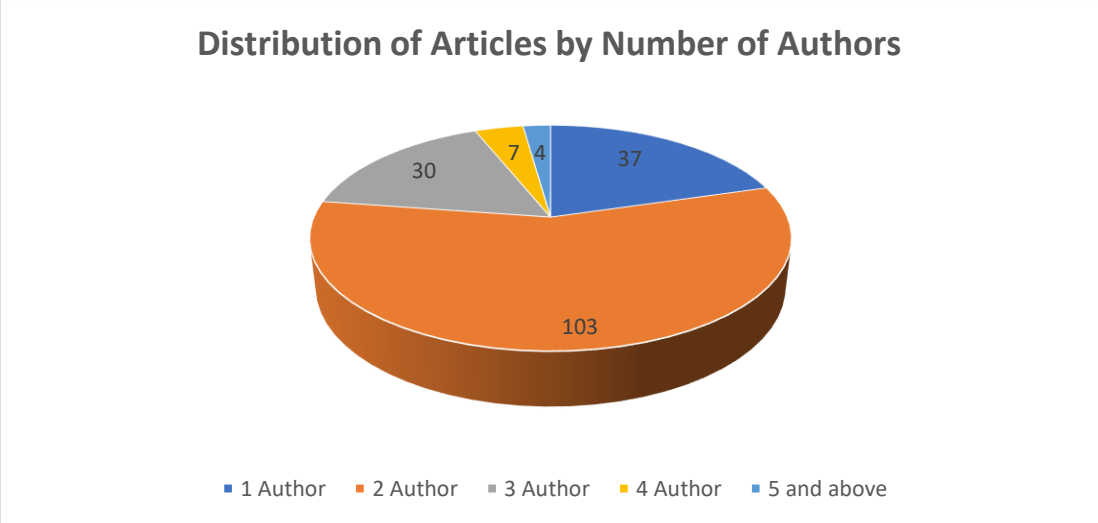

Figure 6. Distribution of Articles by Number of Authors

Considering the number of authors in the studies, it is seen that the highest number of publications were made with two authors (103). In comparison, the lowest number of publications were made with four authors (7) and five or more authors (4) (Figure 6).

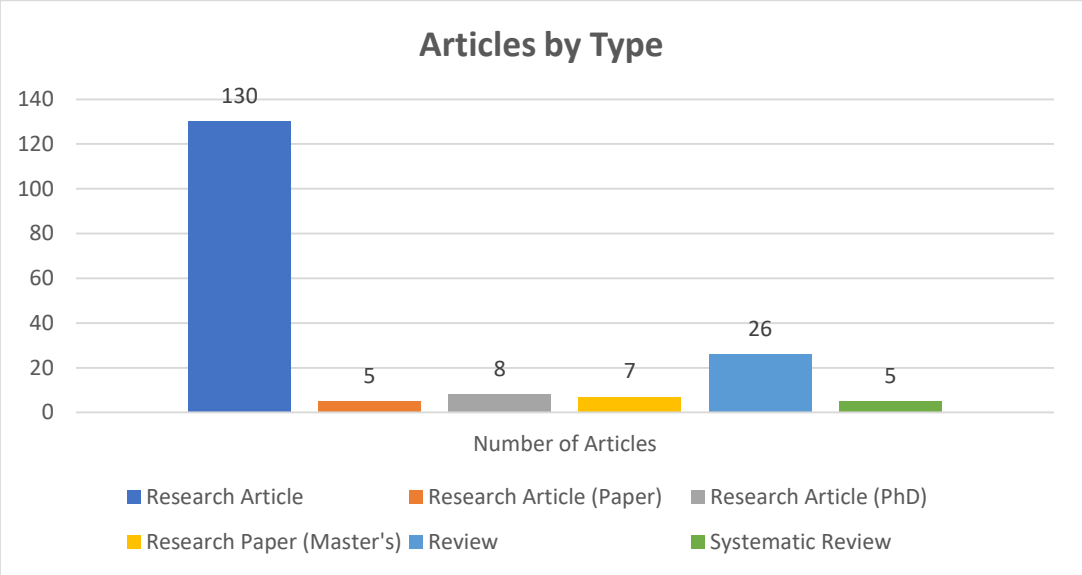

Figure 7. Articles by Type

The types of articles published were categorized as research articles (separate category for those derived from papers, master's and doctoral dissertations), reviews, and systematic reviews (Figure 7). Accordingly, the most common type is a research article with 150 articles. Of these, five were research articles from papers, eight from doctoral theses, and seven from master's theses. The least preferred article type was systematic review (5).

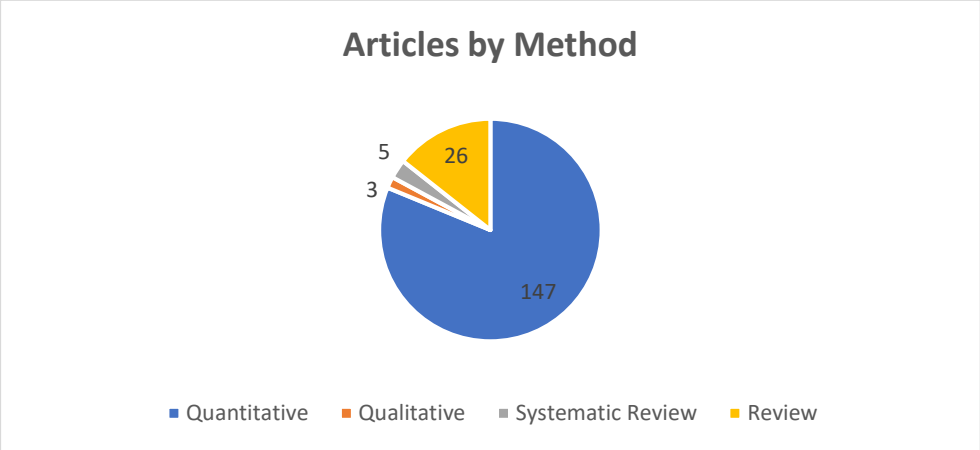

Figure 8. Articles by Method

When analyzed according to the method of the studies (quantitative, qualitative, review, and

systematic review), the quantitative method was used the most (147 times). In contrast, only three qualitative studies were found (Figure 8).

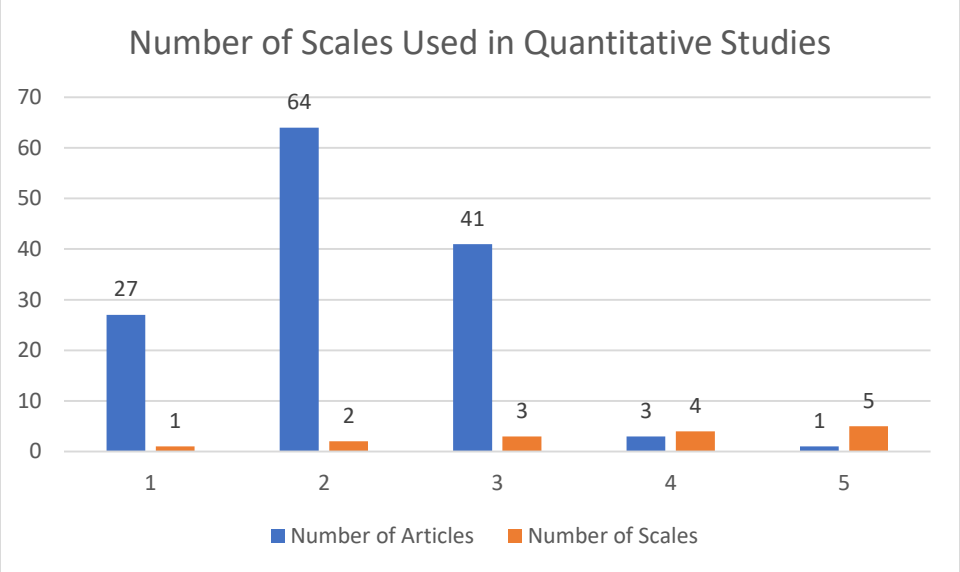

Figure 9. Number of Scales Used in Quantitative Studies

The number of scales used in the quantitative studies is shown in Figure 9. Accordingly, while two scales were preferred the most, four and five scales were used the least.

3. CONCLUSION/DISCUSSION AND RECOMMENDATIONS

In the first stage of our study, journals published in Turkish or English with the title of health management or health administration were searched in DergiPark, one of the systems that contains the largest number of journals in Turkey. A total of 9 journals were found, including Hacettepe Journal of Health Administration, International Journal of Health Management and Strategies Research (USAYSAD), Journal of International Health Sciences and Management (JIHSAM), International Journal of Health Management and Tourism (IJHMT), International Journal of Health Administration and Education Congress (Sanitas Magisterium), Journal of Healthcare Management and Leadership (JOHMAL), SDU Healthcare Management Journal, Journal of Health Sciences and Management (JOHESAM), and Journal of Health Management. In the second stage, a total of 896 articles published by these journals between 2018 and 2023 were analyzed. A total of 181 articles on human resources in health management were included in this study. Finally, these studies were classified according to various experts' opinions and literature. These classifications are as follows: Total number of publications made in this process, publications on

human resources in health management, journal name, year of publication, sub-topic, number of citations, number of authors, type, and method of the article.

In our study, a total of 896 articles that met the specified criteria were examined. Hacettepe Journal of Health Administration, International Journal of Health Management and Strategies Research (USAYSAD), Journal of International Health Sciences and Management (JIHSAM), International Journal of Health Management and Tourism (IJHMT), International Journal of Health Administration and Education Congress (Sanitas Magisterium), Journal of Healthcare Management and Leadership (JOHMAL), SDU Healthcare Management Journal, Journal of Health Sciences and Management (JOHESAM), and Journal of Health Management, which were published between 2018 and 2023, were examined by bibliometric analysis. Within the scope of the study, the journals were classified by the total number of publications made in this process, the name of the journal in which they were published, the year of publication, subtopic title, number of citations, number of authors, and type and method of the article.

When the total number of publications in the years included in the analysis was examined, Hacettepe Journal of Health Administration had the highest number of publications. The journal published its first issue in 1999 and is the oldest among the journals included in the study. In addition, the high number of articles can be considered the result of publishing four issues a year. While the Journal of Health Sciences and Management published its first issue in 2021, the Journal of Health Management published only in 2018 and 2019. The Journal of Healthcare Management and Leadership publishes one issue per year. This has led to a quantitatively negative outlook in the number of articles included in the analysis and other analyses.

Looking at the publication status of human resources-themed studies by year, while there was a steady increase until 2021, there was a significant decrease in 2022. However, it increased again in 2023 and exceeded the number in 2021.

In the human resources-themed studies classified according to journals, it can be easily said that Hacettepe Journal of Health Administration ranks first with a big difference because it is both a well-established journal and there are many publications, as mentioned above. Since the second-ranked International Journal of Health Management and Strategies Research is also the second journal with the highest number of publications, the same connection can be established here. The two journals with the fewest publications did not publish in all the years included in the analysis.

When the included studies are classified according to subtopics, the most studied topic is

the behavioral dimension, which has a significant difference. The behavioral dimension can be shown as the reason that the literature on issues such as management and leadership is enormous, and there are many types of measurement in these areas. This result in our study is in line with the results of the study in which bibliometric analysis of theses conducted in the discipline of health management in Turkey was conducted (Şahin and Ocak, 2019). Industry 4.0 and artificial intelligence, which are among the least published topics, are still very new fields. The low number of publications in areas such as communication, wage management, and bureaucratic procedures can be attributed to the limited number of measurement tools compared with other topics and the fact that these topics have a narrow literature in the field of health management.

When the studies are classified according to the number of citations, it can be said that the high number of studies that have never been cited is due to the publication years being new. The fact that the most cited studies are from studies on management, leadership, and behavioral dimensions can be attributed to the high number of studies on these subjects. It was also observed that there was a positive relationship between studies with ten or more citations and journals with the highest number of publications.

When the number of authors in the studies was examined, studies ranging from 1 to 10 authors were identified. However, it was observed that most of the articles had two authors, with a significant difference, followed by studies with one or three authors. The results of a study conducted on articles published in national and international journals in the field of health management indicate that the top three ranks are the same. The high number of co-authors in international publications was interpreted as the harmony of a common working culture. (Eke et al., 2020).

When the types of articles published were analyzed, it was observed that research articles were preferred in the fields of health management and human resources. Research articles were categorized as research articles (separate category for those derived from papers, master's and doctoral dissertations), reviews, and systematic reviews. Accordingly, it was determined that the most common type was a research article, with 150 articles. Of these, five were research articles from papers, eight from doctoral theses, and seven from master's theses.

One of the most critical issues in academic studies is the study method. When the studies were analyzed according to the method (quantitative, qualitative, review, and systematic review), the quantitative method was used the most, while only three qualitative studies were found. In

another bibliometric analysis study conducted in the field of health management, theses were examined and it was determined that qualitative research methods were used in only three theses out of sixty theses. It was concluded that almost all of the thesis studies analyzed were conducted using quantitative methods (Korkmazer and Pirol, 2021). This may be because quantitative techniques are preferred in the field of health. Finally, the number of scales used in the quantitative studies was classified. Accordingly, the 2, 3, and 1 scale were mostly preferred in the studies. It can be said that the high number of scales makes it challenging to collect research data, which is why such a result was obtained.

Our study is the first study to analyze human resource management issues in health management journals. For this reason, it is thought that our study will be helpful, especially for academicians working in health management. When the results of the study are analyzed, it can be suggested that more studies should be conducted on this subject since there are fewer studies in human resource management in the health management literature compared to other fields. Human resources are the resources that manage, bring together, and use all resources in the organization. Therefore, management success can only be achieved with good human resources.

In the field of human resource management, not only in health management journals but also in all journals in general, the number of publications on specific topics is relatively low. Therefore, there is a significant gap in the literature on workforce planning, job analysis and job design, career planning, industrial relations, and job evaluation. Increasing the studies on these topics can be recommended to new researchers.

One of the most important findings of the research is that the qualitative method was used very little in the studies, and the qualitative-quantitative mixed method was not used at all. Today, the number of mixed design studies is increasing in many fields. It is recommended that qualitative and mixed-design studies on human resources in health management be conducted.

Conflict of Interest: The authors have no conflicts of interest to declare.

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Healthcare Organizations' Readiness for Potential System Transformation to Value-Based Care

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Abstract

Aim: This study aimed to determine the readiness of healthcare organizations for a potential systemic shift to value-based healthcare. Meanwhile, it also sought to understand healthcare professionals' awareness and attitudes toward value-based healthcare, their views on the need for system change, and on what is needed to achieve system change.

Methods: The basic qualitative analysis design was used in the study. Interviews using a semi-structured questionnaire were conducted with 14 clinical and non-clinical health professionals. The data obtained were evaluated by content analysis and MAXQDA 2024 program was used in the analysis.

Results: It's stated that there are deficiencies and failures in the current health system (n=14) and that value-based system can be realized in the long term, provided that some changes are made (n=9). Care delivery and human resources aspects of the current health system are the most problematic and these are the priority areas that will ensure the harmonization of organizations

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with the value-based system through regulation. Evaluations in terms of care delivery process, financial strength, clinical and operational informatics, and provider network comprehensiveness were particularly positive about technology and informatics (n=27). The areas with the most negative evaluations were provider network comprehensiveness (n=23) and financial strength (n=26).

Conclusion: Healthcare professionals' demands on the system are aligned with the promises of value-based healthcare. Many processes, especially in private and city hospitals, are running parallel to value-based healthcare, even if they are not labeled as “value-based”. Private hospitals are better prepared than public hospitals for the potential transition to value. If implemented with the necessary changes, value-based healthcare can be a suitable reform for the Turkish health system and an ideal method to meet the needs.

Keywords: Value, value-based care, value-based care readiness.

INTRODUCTION

Today, rising prosperity and advancing technology have led to a substantial increase in healthcare expenditures worldwide. Despite this increase in healthcare expenditure, there is no visible improvement in the health status of individuals and populations. Healthcare is one of the basic needs of any society, and healthcare providers are committed to providing quality services that meet the needs and expectations of individuals. However, the complexity of healthcare services and the presence of cost and quality issues have made it difficult for healthcare providers to fulfill these obligations. In the literature, the inadequacy of current implementation models in the health system is attributed to three reasons: inability to measure outcomes that really matter to patients, low transparency in financial and clinical outcomes, and lack of integration between providers in the care cycle (Aakash Keswani et al., 2016). Due to the aforementioned shortcomings in the system and healthcare delivery models, healthcare reform is no longer a hypothetical concept, but a necessity for systemic change toward value-based healthcare. This need has ushered in a fundamental shift in payment models and incentive structures - the era of value - where economic rewards are increasingly based on quality, cost and access to care (Bhatt, Forster and Welter, 2015).

Porter (2009) suggests the need for a comprehensive vision for health system change and a clear national strategy to achieve it, with a focus on improving value for patients. The "value" referred to here refers to the health outcomes achieved per dollar spent (Porter, 2006). National

health systems planning to deliver value-based health services by adopting an interrelated six-component model for restructuring health care systems with the goal of inclusive value for patients should build enabling collaborations across their systems to avoid fragmentation in the value chain (Porter and Teisberg, 2006; Porter, 2008; 2010; Porter and Lee, 2013; Kaplan and Porter, 2011). The components of the strategic framework that incorporate the principles described earlier, include (i) organizing care around medical conditions rather than skills and facilities (integrated practice units), (ii) systematically measuring outcomes and costs at the patient level, (iii) developing bundled prices for the full cycle of care, (iv) integrating service delivery across different institutions, (v) extending best practice geographically, and (vi) creating an enabling information technology platform. It is seen that this strategic framework is adopted in the literature as the steps that should be implemented while transitioning to a value-based healthcare system (Wilson et al., 2016). There is an overlap between the key deficiencies that are seen as the cause of dysfunction in the current healthcare system and the ways in which the transition to value-based systems can be implemented.

While moving to value-based care may be a solution to address the failings of existing healthcare systems, it would be wrong to characterize this as something which can be suddenly and easily implemented. Many healthcare providers are facing the fact that making the transition to a value-based healthcare system while ensuring financial sustainability is one of the biggest challenges they face. The first step in the value journey is to understand the characteristics of value-based healthcare organizations and assess their readiness for the process. Only those healthcare providers who are able to proactively design the necessary strategies and develop core competencies with the intention of transforming into value-based organizations will be successful on their value journey (Bhatt et al., 2015). To prepare for this change, healthcare providers should understand the principles and concepts of value-based healthcare and take steps to align their practices with these principles. This involves focusing primarily on organizational readiness and creating a culture of continuous improvement and innovation (Varela-Rodriguez et al., 2022; Nilsonn et al., 2017). Aligning with a value-based system may require changes in workflows, care delivery and the use of technology (Meinert et al., 2018). It is also important for providers to involve their employees in the transition process and ensure that they understand the goals and principles of value-based healthcare and have the necessary skills and knowledge (Nilsson et al., 2017).

In order to become a value-based healthcare organization, there are a number of factors that need to be implemented and considered. A full picture of the strategic, financial, operational, and technological aspects of organizations should be revealed through a value-based readiness assessment. A comprehensive measure of an organization's readiness to deliver value-based healthcare can be revealed by assessing areas such as the service delivery process, the cost of care, payment models and financial strength of the organization, the scope of the provider network, and clinical and operational informatics (Salvatore et al., 2020; Adelson et al., 2016; Bhatt et al., 2015).

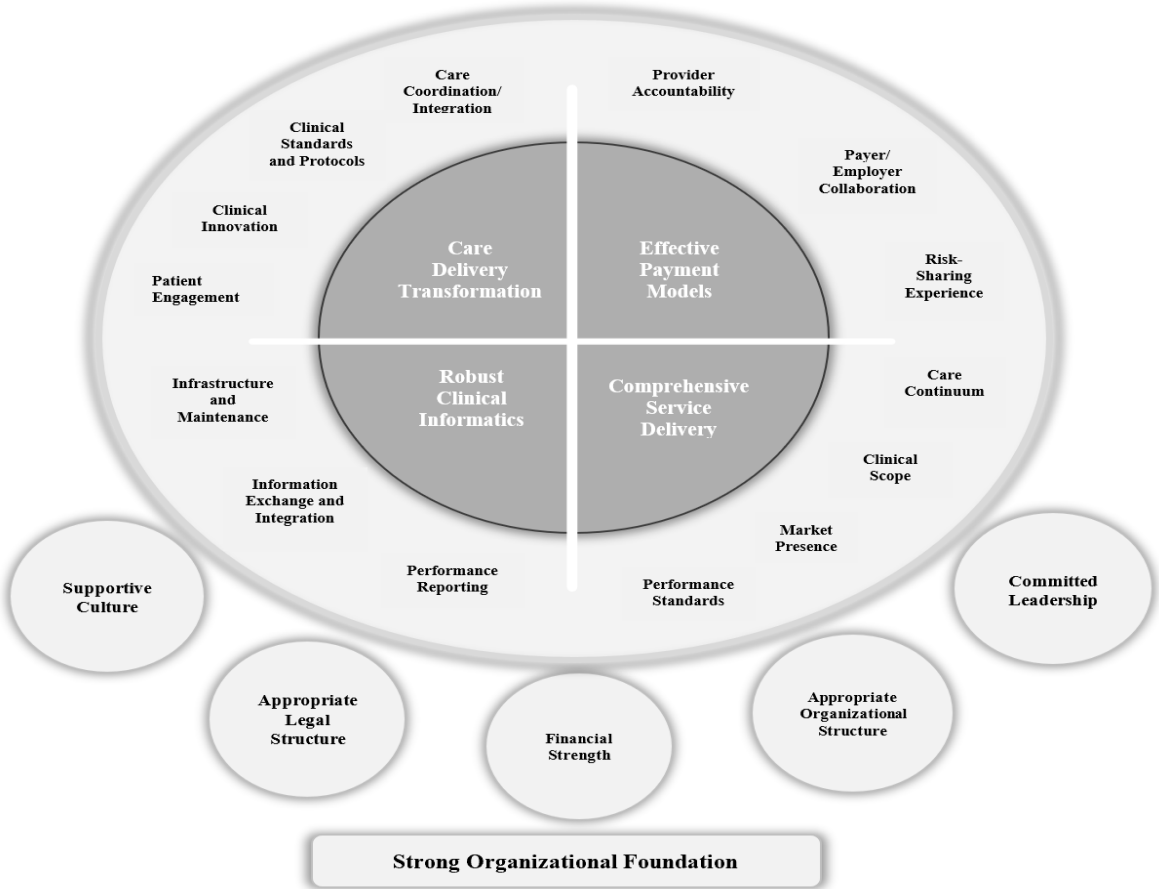


Figure 1. Value-based Healthcare Readiness Assessment Tool (Bhatt et al., 2015, pp.64)

1. RESEARCH METHODOLOGY

Purpose, Model and Design: The aim of the study was to assess the readiness of healthcare organizations for a possible system change towards value-based healthcare. The study was conducted using qualitative research methods and a basic qualitative research design. Revealing

how people make sense of their lives and experiences is the general aim of the basic qualitative research design (Merriam and Tisdell, 2015).

Data were collected from clinical and non-clinical professionals working in healthcare institutions affiliated with the Ministry of Health in a major urban area in Turkey, referred to as "X province" to protect the confidentiality of the participants. This selection was made to provide an in-depth understanding of the readiness of healthcare organizations within a specific urban context. It is important to note, however, that the findings of this study are specific to the healthcare institutions in "X province" and may not be generalizable to the entire healthcare system in Turkey.

Participants: Convenience sampling and criterion sampling, which are purposive sampling methods, were used to determine the participants of the study according to the content and purpose of the study. Convenience sampling method is the sampling of individuals from whom data can be obtained in the easiest way for the research to be conducted (Kurtuluş, 2010). The basic idea in the criterion sampling method is to investigate the situations that meet the specified criteria. The criteria to be established in the study to be conducted using this method can be pre-defined criteria lists or criteria created by the researcher (Yıldırım and Şimşek, 2016). In this context, the criteria determined by the researcher and used in the study are as follows.

- To be working in healthcare organizations affiliated to the Ministry of Health in X province, Turkey,

-To be working as a health professional in a clinical or non-clinical role,

- Worked for at least one year in the current healthcare organization,

-To be over 18 years of age.

When determining the sample criteria, a wide range of different healthcare organizations and positions were considered to enhance the inclusivity and representativeness of the research. This approach aims to obtain perspectives from individuals with diverse experiences, viewpoints, and working conditions, thereby achieving more generalizable and reliable results. To ensure that participants have a comprehensive understanding of the organization's structure, operations, and processes, one of the sample criteria was that participants must have been employed at the organization for at least one year. It is anticipated that this requirement will enable participants to provide more in-depth and informed opinions based on their experiences within the organization, thus enhancing the reliability of the research and the validity of the findings. Additionally, a random sampling method was adopted in the selection process to eliminate the risk of focusing on

a specific group or individual. During the data collection phase, the anonymity and confidentiality of the participants were maintained, which encouraged them to provide sincere and honest responses. All these measures aim to minimize bias in the sample and to enhance the reliability and validity of the study.

The sample size was not calculated within the scope of the study as it is difficult to determine the sample size in qualitative research compared to quantitative research (Büyüköztürk et al., 2016) and cannot be determined by statistical calculations based on factors such as the target confidence interval, margin of error and population size as in quantitative research. Sample size in qualitative research may vary depending on the nature and objectives of the research. Depending on the nature of the research questions, the research design and the complexity of the targeted phenomenon, researchers assess how much data should be collected. An adequate sample size is assumed to be the number of data that will be sufficient to meet the objectives and quality of the research. It is stated that instead of determining a sample size at the beginning, it may be more appropriate to determine the sample size at the point where the data obtained provides sufficient saturation in terms of research (Creswell, 2017). In this context, "theoretical sampling" method was used to determine the sample size of the study.

The study population consists of clinical and non-clinical health professionals from health care organizations operating under the Ministry of Health in Turkey. In qualitative research, sample size is generally not characterized as a goal to reach a certain number of participants in advance. However, a sample size can be predicted by the researchers in order to carry out the data collection process in a detailed and satisfactory manner. In this context, in line with the purpose of the study, the sample size was determined as 20 clinical and non-clinical professionals. However, in the following process, it was decided that the research had reached saturation before reaching the determined sample size and the data of the research were obtained as a result of interviews with 14 healthcare professionals. Information about the participants is presented in Table 1.

Table 1. Participants' Information

Num.	Code	Participant Information
1	CP 1	Physician -Has been in the profession for 9 years. Current workplace is a public hospital and has been working here for 2 years.
2	CP 2	Physician -Has been in the profession for 10 years. Current workplace is a public hospital and has been working here for 3 years.

3	CP 3	Physician -Has been working in the profession for 9 years. Current workplace is a public hospital. Has been working here as a specialist physician for 1,5 years.
4	CP 4	Nurse -Has been working in the profession for 5 years. Current workplace is a public hospital. Has been working here for 5 years.
5	CP 5	Nurse -He has been working in the profession for 7 years. Current workplace is a city hospital. Has been working here for 4 years.
6	CP 6	Home Health Care Nurse -Has been working in the profession for 10 years. Has been working current workplace – a public hospital- for 5 years. For 2 years as a home health nurse in charge.
7	CP 7	Midwife, baby nurse -Has been working in profession for 7 years. Current workplace is a public hospital and has been working here for 2 years.
8	NCP 1	IT Vice Director/ IT Infrastructure Lead and Architect -Has been working in the profession for 24 years. Current workplace is a private hospital. Has been working here for 23 years.
9	NCP 2	Business Services Assistant Business Manager -Had serviced administrative, financial and support service units in various public and private organizations in the sector for 19 years. Current workplace is a city hospital. Has been working here for 2 years.
10	NCP 3	Health Care & Patient Services and Quality Coordinator -Has worked in the sector for 35 years in various public and private organizations. For 7 years has been working in current organization which is a private hospital.
11	NCP 4	Administrative and Financial Personnel -For 13 years, has worked in different units for public hospitals in the sector. Current workplace is a public hospital that has been in for 4 years and is currently working in the accounting department.
12	NCP 5	Administrative and Financial Personnel -For 17 years, has worked in public organizations in the sector and has been working in the purchasing department in the current workplace.
13	NCP 6	Quality Coordinator and Consultant -For 25 years, has been working in the sector and during this period, has worked and managed in various areas of public and private hospitals, especially performance and quality. Currently working as a consultant and coordinator in city hospital.
14	NCP 7	Housekeeping and Administration Manager -Has been working in the sector for 13 years. Current workplace is a private hospital and working as housekeeping and administration manager in here.

Data Collection: Data collection for the study used a semi-structured questionnaire to assess the readiness of health care organizations and professionals to manage the transition to value-based care. The questionnaire assessed the demographic characteristics of clinical and non-clinical professionals, their perspectives on value-based healthcare services and models, organizational readiness, the current status of treatment and care in their organizations, and their views on the barriers they believe exist to the transition to value-based healthcare. It is planned that the data obtained from the healthcare professionals will help us to understand whether the existing resources, processes and employees of the organizations are suitable for the delivery of value-based health services.

The questionnaire used for data collection was developed by the researchers by examining the studies in the literature (Adelson et al., 2016; Bhatt et al, 2015; Ergin, 2019; Salvatore et al,

2020; Wilson et al, 2016) on how organizations should prepare for the transition to value-based healthcare.

The questionnaire, which was created as a result of the literature review, consists of three sections and a total of 10 questions prepared in a way that prevents one-word answers such as yes or no to the research questions. The first section contains questions on the demographic characteristics of the participants, such as age, gender, occupation, length of service in the profession, whether the organization they work for is public or private, and length of service in the organization. The second section includes questions about their views on the current health care system, value-based health care, and change towards value-based health care. In the third section, there are questions to determine the clinical and operational problems they face in their organizations and the care delivery process, financial status, clinical and operational informatics, and the comprehensiveness of provider network.

In order to evaluate the validity and reliability of the questionnaire, expert opinion (3) was consulted in addition to the literature review. The experts were asked to give their opinion on factors such as the content of the questionnaire, the appropriateness and comprehensibility of the questions and whether they accurately reflected the variable being measured. After considering the missing or misunderstood points, the questions that were considered unnecessary or complex, and the differences of opinion among the experts, the necessary revisions were made to the questionnaire and, as a result of these revisions, a consensus was reached among the experts.

The questionnaire was administered by the researcher to those who agreed to participate in the study after explaining the purpose of the study, informing them about the study and obtaining their verbal consent, and interviewing them through online communication tools based on self-report. Considering the principle of confidentiality of participants' personal information, a blackout method was applied on private information about participants and institutions. Before starting the interview, the participants were informed that voice recordings would be created, and voice recordings were created after their consent was obtained. The voice recordings were anonymized by assigning codes to individuals and kept only by the researcher.

Ethical Dimension of the Research: The research was approved by Duzce University Graduate Education Institute Scientific Research and Publication Ethics Committee on 23.11.2023 with decision number 2023/384.

Analyze: The data obtained in the study were evaluated by content analysis, one of the qualitative

data analysis methods, and the findings were presented in a descriptive narrative with direct quotations.

In the first step of the analysis process, a database containing the interview records and transcripts of these records was created. The transcripts were examined by the researcher and a general understanding of the database was obtained and the data coding process began. The coding and analysis of the data was carried out with the MAXQDA 2024 program.

2. ANALYSIS

Demographic Characteristics of Participants: Within the scope of the research, participants were asked to briefly introduce themselves in order to create a participant profile. Descriptive findings regarding the demographic characteristics of the participants based on their responses are presented in Table 2.

Table 2. Descriptive Findings on Demographic Characteristics of Participants

Features	Categories	N	%	Features	Categories	N	%
Gender	Male	5	35,71	Workspace	Clinical	7	50,00
	Female	9	64,29		Non-Clinical	7	50,00
Education	Undergraduate	7	50,00	Type of Organization	Public	8	57,14
	Postgraduate	4	28,57		Private	3	21,43
	Specialization in Medicine	3	21,43		City Hospital	3	21,43
Length of Employment with Current Organization	1-3	5	35,71	Length of Service in the Profession	1-8	4	28,57
	4-7	5	35,71		9-14	5	35,71
	8 and above	4	28,57				
Management obligation	Yes	7	50,00		15 and above	5	35,71
	No	7	50,00				
Total		14	100	**Total**		14	100

Of the participants, 64.29% (n=9) were female, 50% (n=7) had an undergraduate degree, and 50% (n=7) were clinical professionals. 57.14% of the participants work in public hospitals, 21.7% (n=3) in private hospitals and 21.43% (n=3) in city hospitals. 35.5% of the participants have been working in the health sector for more than 15 years and 28.57% (n=4) for less than 8 years. 71.43% of the participants have been working in their organization for less than 8 years and 50% of them have management responsibilities.

Views on the Current Healthcare System: Within the scope of the research, it was tried to reveal the opinions of healthcare professional about the current healthcare system. For this purpose, questions were asked to participants about whether the current system has deficiencies, what these deficiencies are,

if any, and whether the system should be changed. All of the participants stated that there are deficiencies and defects in the current system, 85.7% (n=12) stated that the system should be completely changed and 14.3% (n=2) stated that the system should be upgrade. None of the participants stated that the current system is sufficient and that there is no need for change. The themes and sub-themes that characterize the deficiencies of the current health system, which were formed according to participants' responses, are presented in Table 3. Some of the statements made by healthcare professionals on this topic are also presented In Table 3.

Table 3. Views on Deficiencies of the Current Healthcare System

Main Theme	Sub Themes	n*	%
Deficiencies of the Current Healthcare System	Deficiencies in the Care Delivery Process	19	27,54
	Insufficient Resources	17	24,64
	Access Problems	9	13,04
	Medical Education, Qualified Health Professionals	5	7,25
	Quality and Safety Issues	5	7,25
	Healthcare System Culture and Human Resources Management	4	5,80
	Wrong, Incompatible Policies	4	5,80
	Financial Challenges	3	4,35
	Lack of Health Awareness, Distrust in Care Providers and Treatment	3	4,35
TOTAL		69	100,00

Statement	**Participant**
There is currently a system in where healthcare professionals are unhappy, patients receive poor quality health care, patients are only considered in terms of the the quantity of care they receive, and the service provided is only considered in terms of quantity. The quality of the service provided is not important at all. It is only important that the patient applies to the hospital, not whether they are satisfied with the service they receive. There is a system where only the fact that the patient has received this service is important. There is a system where the number of hospital admissions is billions per year, which leads to poor quality services. First of all, these need to be changed from the beginning. It needs to be changed completely, there is a wrong system, full of wrong practices.	CP 1
Midwifery or nursing is not limited to administering medication and providing treatment. It involves addressing a multitude of patient needs, which may include psychological support and various other aspects of care. In many places and at many times, though not always, we are unable to provide quality care to patients.	CP 7
In terms of numbers, it is not only necessary to have buildings, but also to have qualified human resources in them. I think if we think about the public hospitals now, they were very elegant buildings with very good hotel services, so if I evaluate 35 years of my professional life, physically we worked under very difficult conditions in terms of buildings, and now they are relatively qualified. But in terms of the number of employees, unfortunately, it is not enough to meet the current demand, both quantitatively and qualitatively. But if we come to the private sector,	NCP 3

	of course, in the private sector, for the economic reasons I just mentioned, it is easy for patients to access services, but the number of people who can financially compensate for this is gradually decreasing

*****n indicates the frequency of participant mentions related to the sub-themes.

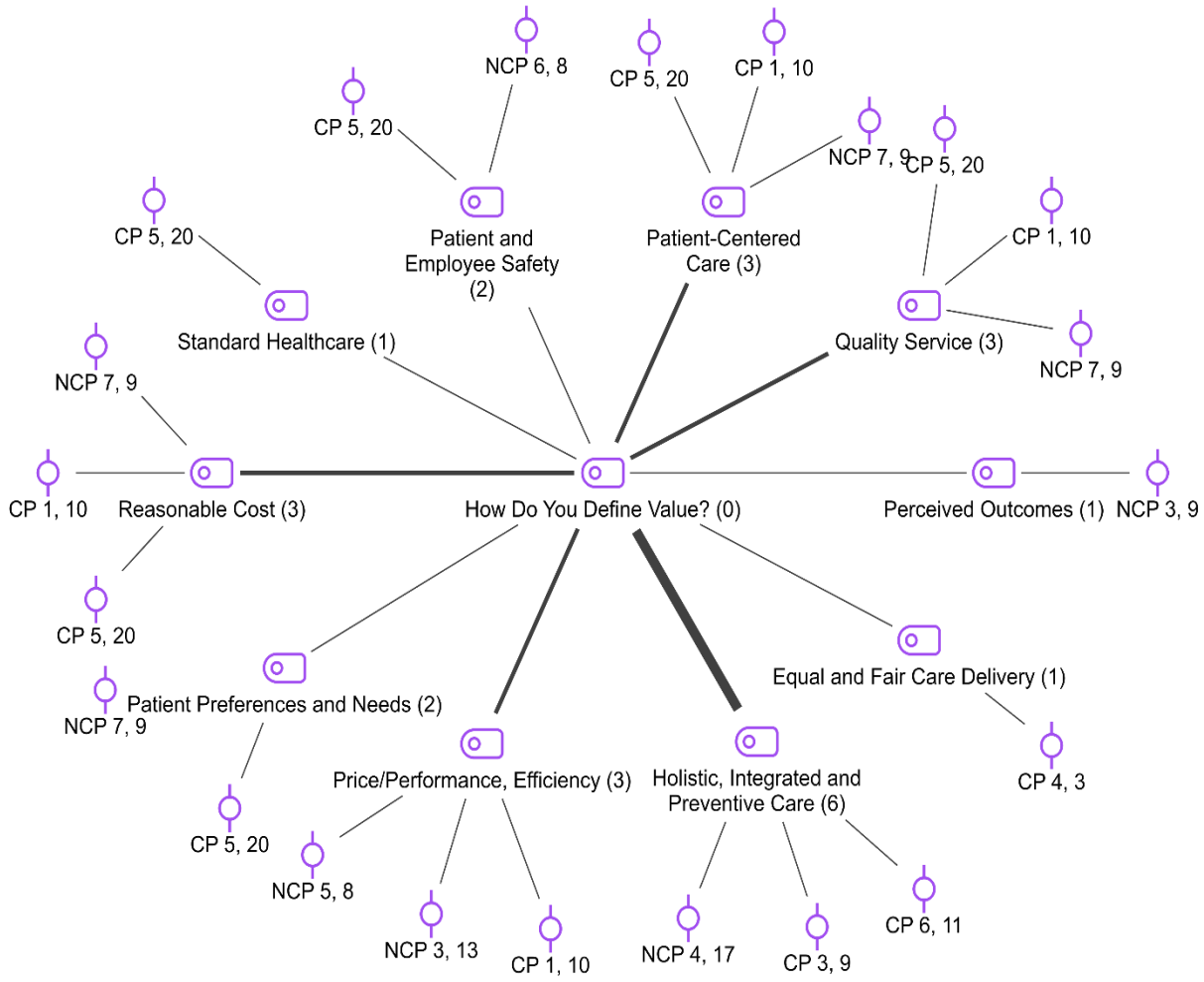
The most frequently mentioned system deficiencies by the participants are the sub-themes of "Deficiencies in the Care Delivery Process" (n=19), "Insufficient Resources"(n=17) and "Access Problems" (n=9). The most emphasized issues related to the service delivery process were the inability to provide holistic care to patients, the fact that qualitative outcomes related to and important to patients are not as important as quantitative outcomes, and insufficient time allocated to the patient. In terms of resources, the most frequently evaluated issue by participants was the inadequacy of human resources in terms of quantity.

When participants' statements are analyzed, an important point stands out. Clinical and non-clinical professionals agree that the most important resource issue is the lack of human resources. However, clinical professionals emphasize the quantitative deficit in human resources, while non-clinical professionals emphasize both the qualitative and quantitative deficit. Clinicians attribute many of the system's failures to inadequate levels and distribution of resources, especially human resources. Non-clinical health professionals, on the other hand, associate the current problems, especially in the service delivery process, with the qualitative as well as the quantitative aspect of the lack of human resources, and believe that radical steps should be taken to change the quality of health professionals and the service delivery process, starting with the medical education curriculum. In the study, none of the interviewees possessed specific expertise in medical education. The statements regarding the need for changes in the medical education curriculum, starting with the curriculum itself, were based on the perspectives of non-clinical health professionals.

Views on the Value-Based Healthcare: After determining participants' views on the current healthcare system, the research sought to determine their views on the value-based healthcare system. The participants in the study had varying levels of knowledge regarding value-based healthcare services. The first step in ensuring that healthcare institutions are prepared for value-based service delivery is the identification and understanding of value. Therefore, in order to assess the readiness of institutions, the initial focus was on determining the participants' levels of knowledge about value. To determine the level of knowledge healthcare professionals had about value-based care, they were asked if they had any knowledge about the value-based care topic

before the interview. 78.6% (n=11) of the participants indicated that they had not heard of value-based care, while 21.4% (n=3) indicated that they had limited knowledge of the topic. All the participants who had heard of value-based healthcare were postgraduate educated and held management roles at their organizations. To determine how employees define value, participants were asked what "value" means to them. The code-subcode model for participants' definitions of value is shown in Figure 2.

Figure 2. Code-Subcode Model for Value Definitions



*The thickness of the arrows indicates the frequency of use of the code.

Figure 2 shows that value in healthcare is most commonly associated with holistic, integrated care and preventive healthcare services. These statements are followed by patient-centered care, quality service delivery, reasonable cost and price performance, and efficiency. According to the

participants, to create value, patient-centered, high-quality care should be provided in a holistic and integrated manner at a reasonable cost. These statements are quite consistent with definitions in the literature on value-based health care. Some of the participants' statements are presented in Table 4.

Table 4. Example Statement on Value Definitions

Statement	Participant
I would like to answer this as a healthcare professional and healthcare manager. We can consider providing a service based on trust to the other party as a value-based approach. In other words, I think that all of the work we do within the scope of patient safety and employee safety can be handled within the value-based approach. So, to explain further, what we mean by value-based is the elements of a safe system that we have created for patients and employees, and I interpret this as the activities we do without expecting any financial return. We are talking about a 360-degree structure. In fact, this is exactly the structure that quality in healthcare aims for. What I mean by patient safety is, for example, when a patient is discharged, when they go home, when they have orthopedic surgery, if there is something that restricts their movement, we question whether they can get home upstairs, or if they have no one to take care of them afterwards, and if they are dependent patients, we question whether they have social services support. Or after discharge, we include the patient in a program by calling and checking the patient at home at a certain frequency to see if the patient has developed a hospital-acquired infection, and if there are symptoms, we detect it beforehand... In fact, in structures and companies that are entirely based on patient safety, services are provided by fulfilling the concept of value you mentioned in this way	NCP 6
When talking about value-based healthcare, I understand it as a healthcare concept where the focus is on the value given to the patient and efforts to increase this value. I perceived it as a healthcare service that is based on price-performance, aiming to deliver quality at a lower cost.	CP 1
As far as I can tell, there is an understanding of coming from the one and going to the whole, that is, looking holistically. Integrating different parts rather than dividing them into parts and generally providing improvement. I believe that value can be created by starting to deal with the disease before it occurs and by changing the treatment and lifestyle of society. This should be approached holistically, not only in terms of healthcare services, but also in collaboration with the food sector, the agricultural sector and all related sectors. By addressing the root causes of disease, value can be created and value-based health care services can be provided.	NCP 4
To create value, care must be patient-centered. This means responding to patient preferences. We must be able to provide quality service for every patient, doing so safely and at a reasonable cost. Currently, with the widespread establishment of city hospitals, it can be said that there is an effort to prefer this type of service delivery that focuses on high-quality, patient-centered care, ensuring patient confidence without creating any additional costs compared to other public hospitals. Indeed, there is an effort to transition to this new system, which, although it yields positive	CP 5

results for patients, we must be cautious of the burden it may impose on healthcare workers and the potential feelings of undervaluation they may experience.	
There is this in private hospitals, of course there is a different process in public hospitals, but when evaluating private hospitals, it is like this: "Yes, I paid a good price, but I got a service that was worth it." Yes, we can think that in the end there is value in comparing quality, fee and service received. Especially from a financial point of view. Both the service recipient and the service provider need to make this comparison.	NCP 3

Views on Potential Transitions to a Value-Based System: After determining healthcare professionals' perspectives on the current system and their thoughts about value-based healthcare, the research sought to determine their views on possible changes to value-based healthcare. Participants were briefly informed about value-based healthcare and then asked if this system could be considered as an alternative to the current healthcare system. All participants (n=14) agreed that a value-based system could be considered instead of the current healthcare system. In response to the question of whether it would be possible to transition to a value-based health care system in Turkey, 69.2% (n=9) of the participants stated that it would be possible. It was stated that the existing regulations in the system are qualified and well prepared to support the value-based system, that there is a will to support it, and that the technological infrastructure is robust.

30.8% (n=4) of the participants stated that the transition to a value-based healthcare system is not possible under the current circumstances. The reason for the impossibility of the transition was attributed to the socio-cultural differences of the society, and it was emphasized that this change is not possible due to deficiencies such as infrastructure deficiencies, lack of resources, and the functioning of management processes, especially in public hospitals rather than private hospitals. Some of the statements on this subject are given in Table 5.

Table 5. Example Statements on Value Based System and Transition to "Value"

Statement	**Participant**
Well, to be honest, if we think about it like that, in our country, for example, some infrastructures are incredibly successful. Here is 'e-Nabız'. I don't think there are many examples in the world, I don't know, to be honest. It is not available in most of the developed countries. E-Nabız is a system that has been developed over a period of maybe 15, 20 years, and since 2005 we have been slowly developing it, and the current telemedicine infrastructure, our sending data... For example, people have also learned, they check the reports on e-pulse, something happens, you share it with the doctor on e-Nabız.. Look, this has been done in our country. With this logic, I say that the system you are proposing can also be done. I mean, of course, the legal supports are regulations, so there is a will to do it. If we were still in the same system that we were in 20 years ago, we could say that there is no way we can do it, but I think it can be done.	NCP 1

In fact, I think the first steps of the structures that need to be built have been taken. In other words, services such as the family medicine system and then the cascade of health institutions are among the building blocks of this. In other words, if the system works properly, it will actually take us there. .... In fact, the standards, regulations, guidelines, whatever you call them, the legal conditions are very well established. Everything is written and described step by step... We have a lot of valuable scientists, professors... They are not people who do not know this work, they are people who come and give conferences all over the world and explain their subjects, so they cannot not know. Therefore, it is necessary to support them and provide them with resources so that the work pays off.	NCP 6
It might be a bit difficult in Turkey. Patients should be ready for this system. They should want holistic care, they should have holistic care and aftercare. They should not consider it as 'I have a disease, let me get well'. For example, family practitioners were established to provide a lot of prophylactic services, to provide early diagnosis, to reduce the burden on hospitals, but as a country we could not implement it. So I think our society is not very suitable for this system. I mean, they do not have the mindset of, "Let the physicians deal with my situation as a whole; let me recover mentally, psychologically, and socially". At least a certain part of it is not.	CP 2
The most important of these aspects is that the infrastructure required for the transition to the system is not ready. The criteria for this infrastructure are the lack of a sufficient number of physicians, the low number of health workers per patient, the accumulation in some health institutions due to the unequal distribution of equipment such as tools and devices in health institutions to all health institutions, and therefore delays in accessing services. Valuable physicians leaving the country, physicians from other cultures and geographies who are deficient in terms of education and qualifications filling the vacancies left by them, the fact that a generation that does not receive proper education in medical faculties is being trained as doctors due to the corruption in the education system, and in parallel to this, the existence of unnecessary universities that are increasing due to the wrong political policies in the country, and the opening of universities - faculties of medicine - that do not even have hospitals... It goes on and on, but for all these reasons, I think that transition to a value-based system will not be possible in Turkey in the near future.	NCP 7

The majority of participants who stated that the transition to value-based health care is possible also indicated that there are some prerequisite changes that must be implemented in order for this transition to be possible and for the transition to be achieved in the long term. The themes and subthemes created from the participants' responses regarding the changes needed to make the transition possible are presented in Table 6. Some of the statements made by healthcare professionals on this topic are also presented In Table 6.

Table 6. Changes Needed to Enable a Transition to a Value-based System in Turkey

Theme	**Sub-Themes**	**n**	**%**
Changes to be made in the system to enable the transition to a value-based system	Education and Awareness Raising	8	28,57
	Management and Managers	6	21,43
	Resources	5	17,86
	Providing Suitable Conditions and Infrastructure	4	14,29
	Changes to Service Delivery	3	10,71

	Changes to Financial Regulations and Payment Methods	2	7,14
TOTAL		28	100,00

Statement	**Participant**
Because it's not just the thing, mind sets need to change as a culture in employees... I mean, such a value-based management is not just about building a hospital and doing it well. That equals city hospitals... The mind-set of the employees also needs to change. Maybe even the mindsets of the people who use these services need to change.	NCP 1
At this point, most managers listen to and take into account what the political authority has to say and are in contact with them. The system is full of managers with no merit and no understanding of health management. These managers do not think about the patient or the healthcare professionals, they only act in a way that makes the political authority happy. Therefore, the biggest obstacle to this system is the current managers and the political authority. The same is true for the organization I work for. There are problems in managerial processes. In other words, we are talking about a system where a person can be appointed because of his/her closeness to someone, regardless of merit, regardless of competence	CP 1

When Table 6 is examined, it is seen that the most emphasized sub-themes by the participants are "Education and Awareness Raising", "Management and Administrators", and "Resources". Participants indicated that comprehensive change is needed, including raising the health awareness of society, supporting the education and development of healthcare professionals, ensuring a change in culture and mindset, and redesigning the medical education curriculum to ensure patient-centered care. They believe that a change in management approach and perspective is needed at all levels of management, from top to bottom. In order to make the transition to a value-based system possible, there should be experienced and competent, merit-based independent managers who are willing to do this work, and the will of political authority and decision-makers is important. In terms of resources, the lack of human resources was particularly emphasized. It was stated that it is essential to increase the quantity of human resources through proper resource planning and allocation. In regards to care delivery and treatment approach, they stated that patient participation should be ensured, a quality-based rather than a quantity-based approach to care should be adopted, and standardization of care delivery, materials used, and physician approach should be ensured. Participants believe that financial arrangements and changes in payment methods can encourage patient participation in care and reduce waste by discouraging unnecessary utilization of services, thus paving the way for an environment conducive to value-based care.

It was tried to determine the opinions of healthcare professionals about the aspects that would challenge organizations and employees in a potential system change. The code-subcode

model created according to the responses of the participants is presented in Figure 3.

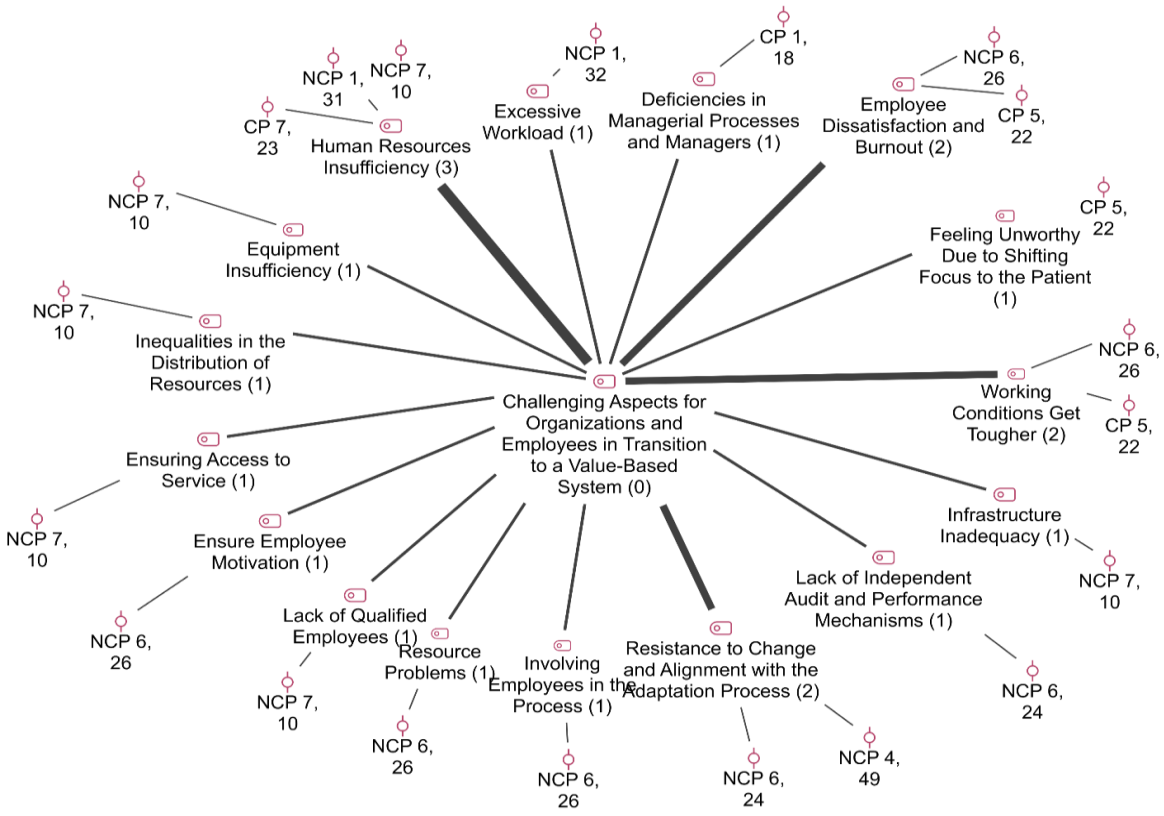


Figure 3. Challenges for Organizations and Employees in Transition to a Value-Based System

*The thickness of the arrows indicates the frequency of use of the code.

Figure 3 shows healthcare professionals' statements about the challenging aspects of the potential system change to value-based care. In this context, healthcare professionals foresee that the challenging aspects of system change will be more difficult for organizations. Resource-related issues are the sub-theme most emphasized by the healthcare professionals. In particular, it was highlighted that human resource shortages are a common aspect that will challenge both organizations and employees. The expectation that the shortage of human resources will lead to a possible increase in workload, more challenging working conditions and consequent lack of motivation and burnout were mentioned by participants as aspects of the shortage of human resources that will challenge employees. It was stated that the human resource shortage will challenge organizations to ensure employee motivation and to establish an appropriate and functioning system due to the importance of a skilled workforce. In addition, overcoming

resistance to change and ensuring adaptation to the adaptation process are also mentioned as aspects that will challenge organizations. Some of the participants' statements on this topic are given in Table 7.

Table 7. Statements on challenges

Statement	Participant
It really puts a huge burden on their existing workload. It would be unfair for us to say: 'You're going to take care of 40 patients in this ward and you're going to do these things on top of that,' people can say, 'Wait a minute, what are you talking about?' If the resources that I just mentioned are really there, if we have enough nurses, enough medical secretaries, enough managers, why can't we do these things, what is the difference between us and other countries? I mean, in the private sector, yes, you can provide some motivation, but in the public sector there is no point in doing certain things. If he is professionally in love with this job and idealistic, he will want to do it wholeheartedly. But if there is no such thing in him, you have to come up with something to motivate him. If you can't do that, then your hands are tied when the employees say, "Why should I do this? You can't make them do anything. Because they're a civil servant under a different law, and you can't really do anything. So we have to do some things to make them want to do it.	NCP 6
For one thing, there may not be enough human resources. One of the basic problems is that there may not be enough physicians, nurses, and support personnel. There is an efficiency problem in the public organizations, and this efficiency problem can cause problems.	NCP 1

After identifying the possible difficulties of the process, the participants' views on the priority areas that would make the institutions compatible with the value-based system and make the transition to this system successful were tried to be determined. The themes and sub-themes that emerged from the participants' responses are presented in Table 8. Some of the statements made by healthcare professionals on this topic are also presented in Table 8.

Table 8. Priority Areas to Regulation for Value-Based System

Main Theme	Sub Themes			N	%
			n	%		
Priority Areas to Ensure the Adaptation of Organizations to the Value-	Structural, Systemic	Adjustments in Care Delivery and Treatment Approach	14	38,9	36	51,4
		Culture and Awareness	6	16,7		
		Policies, Legal and Regulatory Framework	5	13,9		
		Resource Management	5	13,9		
		Political Authority and Decision Makers	3	8,3		
		Payment Methods	2	5,6		
		Training and Development	1	2,8		

Based System	Corporate	Care Delivery Process	8	23,5	34	48,6
		Sources	8	23,5		
		Corporate Culture, Values and Understanding	5	14,7		
		Technological Infrastructure and Data Analytics	4	11,8		
		Audit, Performance Measurement and Monitoring Mechanisms	4	11,8		
		Managerial Processes	4	11,8		
		Preparing for Transition	1	2,9		
TOTAL					70	100

Statement	**Participant**
Will physicians be happy? What role will the healthcare professionals play in this system? Will their workload increase? Since the current authority only cares about the satisfaction of patients... Because there is a minority, the health workers. There is a majority group, the patients, and since they are already considered in terms of quantity... Providing quality service, yes, but it is also important to ensure the satisfaction and professional fulfillment of healthcare professionals. Not just financially. The following can be considered when providing value-based health services If a system is created in which primary health care services are completely freed from the current system, emergencies, outpatient clinics, etc., then it may be useful. Like a referral system, that is, the deserving patient will be cared for in the way they deserve and where they deserve to be cared for. I mean, if the patient who just says he/she has a sore throat occupies the emergency room and prevents the patient with a heart attack from accessing health services, as is the case in this system, then we cannot talk about a value-based health care system.	CP1
Yes, in this general practice of our ministry, family medicine was introduced and a step system was tried. It did not work very well in Turkey. That is, if it becomes a functioning system. In general, I think that each step will be more relaxed, patients will receive more efficient service, and the number of patients, that is, primary care patients, secondary care patients, tertiary care patients, will receive a better quality and more effective service at lower cost after they are separately formed and directed.	CP 2
"I mean, because in this sector, in this kind of service, rather than conceptualizing it in the sector, the main players and a large segment that is influential in policy making are healthcare professionals. So, first of all, healthcare professionals need to believe that this will actually add value to patient outcomes, that it will add value, that it will be a positive development. Otherwise, we can only work on the infrastructure, but the most important thing is the political will. Politicians and political will. Here the things of the decision makers are very important, their competence is very important. Yes, the word competence here.	NCP 2
"I mean, you can't explain this to people right away in the current system, you can't teach it, but starting from scratch, from a university education, the system will evolve in this way. It can be trained that way. They are also based on educating people at the root of everything. I mean, they also need to be supervised, that is to say, qualified personnel need to be trained in order to implement them.	NCP 5

The priority areas that participants think will enable organizations to adapt to the value-based system were evaluated under two sub-themes: structural, systemic (macro) and organizational

(micro). Evaluations on macro areas (n=36) are higher than evaluations on micro areas (n=34). This may mean that the participants think that the regulations in structural, systemic areas are more prioritized.

Regulations regarding the care delivery process were the most frequently mentioned topic for both macro (n=14) and micro (n=8) domains. At the macro level, the importance of preventive health care and public health was emphasized for the care delivery process and treatment approaches. Participants particularly emphasized the need for cascading and the establishment of a well-functioning referral chain. It is widely believed that the proper functioning of cascading will reduce hospital congestion, prevent waste and reduce costs, and provide benefits in terms of access to services by providing the right treatment in the right place for the right need. The emphasis here is on the will of the political authority and decision-makers, and on making the policy, legal and regulatory framework compatible and applicable to the system. It is considered important to establish a system that provides integrated and holistic service delivery to the patient, and to emphasize home health services to ensure patient follow-up. At the micro level, it was stated that an appropriate environment and culture of cooperation should be created in the organization, where the service delivery process can be provided in an integrated manner, and that the necessary organizational, technological infrastructure and audit mechanisms should be brought to an appropriate level. At the macro level, it is pointed out that there is a need for regulation, particularly in relation to culture and raising health awareness in society. Both service providers and recipients need to be encouraged to adopt a holistic and quality approach to care. At the micro level, increasing the quality and quantity of the human resources and the availability and appropriate distribution of other resources are the most important areas. The organizational culture needs to be built in a way that supports the understanding of value and quality service delivery, and management processes need to function in a way that supports this culture. It was stated that management should be based on merit and that competent, experienced and expert managers who are informed about the unit to which they are appointed should be put in charge to improve the quality of services provided to patients and to consider the welfare of health care providers. Some of the statements made by the participants on this issue are given below.

Having determined the participants' views on the issues that will challenge the organization and staff in the transition to a value-based system and the priority areas that will ensure compliance with the regulation, we wanted to determine their assessments of the responsibilities of clinical

and operational leaders in the process of transitioning to a value-based system. The major themes and subthemes that emerged from their responses to the questions posed for this purpose are presented in Table 9. Some of the statements made by healthcare professionals on this topic are also presented in Table 9.

Table 9. Views on the Responsibilities of Clinical and Operational Leaders in Transition

Main Theme	Sub Themes	n	%
Responsibilities of Clinical and Operational Leaders in System Change	Engaging employees in the process	11	39,3
	Characteristics of leaders and applying change management	6	21,4
	Ensure that necessary systems are in place	6	21,4
	Clearly define plans, goals, and activities	3	10,7
	Value-driven management approach	2	7,1
TOTAL		28	100

Statement	Participant
Otherwise, the employee who does not see that his/her feedback is taken into consideration will be lost in that system after a while and will only do what he/she is told. However, our care professionals need to work with a multidisciplinary team spirit so that they feel valued and that they belong to the organization. If they feel that they belong to the organization, and if the criticism that they make gets positive or negative feedback, I think the leader there can make the organization more valuable by solving a lot of problems. It can also make the employees feel more valuable.	NCP 3
Here, the main task of the operational leaders is to ensure and support the training and development of the healthcare professionals who will provide health services... By ensuring the welfare of them, both in terms of salary policy and social opportunities, to ensure their motivation and to ensure that they start work as happy individuals... Because only a health worker who ensures his own self-motivation and feels secure in every respect can then move on to the step of giving importance to "values"	NCP 7

When analyzing the statements of healthcare professionals, it was found that the primary responsibility of clinical and operational leaders in a potential system change to value-based healthcare was seen as involving employees in the process (n=11). To ensure employee involvement, participants indicated that they should make employees and their ideas feel valued and that their feedback is important, adopt and implement methods to ensure employee satisfaction and motivation, keep employees informed about the process and how it works at every stage, and support them with education/skills development. Managers are expected to believe in change, understand people, have problem-solving skills, be experienced and competent, and have a management approach that prioritizes values. In addition, another important issue mentioned by the participants is that in order to realize the change to a value-based system, managers should ensure that the necessary infrastructure and systems that will help provide accessible health care

delivery, such as audit mechanisms and tracking systems, are designed and maintained in the organization. It was also emphasized that it is important to have clear plans, objectives and activities to be carried out. The following are some of the statements made in this regard.

Participants' Views On Their Organizations' Readiness To Transition To A Value-Based System: After determining participants' views of the current system and the value-based system, health care professionals were asked questions to determine their views on the problems they observed in their organizations, the care delivery process, the comprehensiveness of the provider network, clinical and operational informatics, and the financial strength of their organizations to determine the readiness of the organizations for potential change.

The themes and subthemes identified regarding the clinical and operational problems observed by participants in their organizations are presented in Table 10.

Table 10. Clinical and Operational Problems Observed in Organizations

Main Theme	**Sub Themes**	**n**	**%**
Clinical and Operational Problems Observed by Employees in their Organizations	Human Resources Challenges	6	19,3
	Problems Related to Technological Infrastructure and Data Management	6	19,3
	Problems Related to the Care Delivery Process	6	22,6
	Problems with Resources	4	12,9
	Problems with Monitoring Mechanisms	2	6,4
	Problems Related to Managerial Processes	2	6,4
	Payment Methods	2	6,4
	Corporate Culture	1	3,2
	Awareness	1	3,2
TOTAL		30	100

Participants made 30 evaluations about the clinical and operational processes they observed in their organizations. According to these evaluations, the most commonly cited clinical and operational problems are human resources (n=6), technological infrastructure-data management (n=6), and care delivery process (n=6). All of the problems related to human resources, which received the highest evaluation, were mentioned by public and city hospital employees. In particular, the length of working hours, unfavorable working conditions and excessive workload of physicians and nurses providing clinical services were mentioned. It is stated that clinical professionals, who are the building blocks of service delivery, should be motivated, an environment where they can spare time for their families should be created and they should not be

expected to provide services at an intensity based on 24/7 working basis. In addition, it was noted that inequities in workload distribution occur due to the improper functioning of audit mechanisms. The majority of the problems related to technological infrastructure and data management were again assessed by public and city hospital employees. The problems related to technological infrastructure and data management raised by private hospital employees are related to the lack of full digitalization of data, rather than the availability of appropriate infrastructure and data analytics systems.

Problems related to the care delivery process include inadequate time allocated for treatment, access to services, patient participation and follow-up.

Problems encountered in areas such as managerial processes and supervision mechanisms were again only mentioned by public hospital employees.

From this perspective, it can be concluded that the problems faced by public, private and city hospitals are different, and this difference means that they may focus on different priorities in the care delivery process.

Following the participants' general assessments of the problems they faced in their organizations; they were asked to evaluate more specific aspects of their organizations in order to get an overall picture of their readiness for a value-based system. To this end, firstly, their evaluations of the care delivery process of their organizations were revealed. According to the responses of the participants, the themes and sub-themes formed regarding the service delivery process of the institutions and their opinions are presented in Table 11. Some of the statements made by healthcare professionals on this topic are also presented in Table 11.

Table 11. Assesments on the Care Delivery Process

Main Theme	**Sub Themes**				**N**	**%**
		Opinions	**n**	**%**		
Assessments of organizational care delivery processes	Supporting Clinical Innovation/Innovation Idea	Positive	5	41,7	12	20
		Negative	7	58,3		
	Clinical Standards and Protocols	Positive	8	72,7	11	18,3
		Negative	3	27,3		
	Systematic Measurement of Patient Satisfaction	Positive	5	55,6	9	15
		Negative	4	44,4		
	Consideration of Patient Needs	Positive	4	57,1	7	11,7
		Negative	3	42,9		
	Ensuring Patient Participation	Positive	2	33,3	6	10
		Negative	4	66,7		

	Ensuring Coordination and Integration in Care Delivery Process	Positive	2	33,3	6	10
		Negative	4	66,7		
	Service Quality and Standard	Positive	4	80	5	8,3
		Negative	1	20		
	Patient Satisfaction	Positive	1	25	4	6,7
		Negative	3	75		
TOTAL					60	100

Statement	**Participant**
Now we say that we have a holistic approach where the patients themselves are involved in the care. In the care of our patients, it is very important to us not only that health care professionals provide the care and the patient follows it, but also that the patient participates in that care. In other words, if we give the patient the work that he/she can do, and if we make sure that the patient participates in care, the patient will recover faster, be more motivated, and feel better. They don't feel worthless. So we encourage participation in care and try to involve our patients as much as possible	NCP 3
Patient satisfaction surveys are conducted in inpatient, outpatient and emergency services. As you know, there is a guide published by the Ministry of Health on satisfaction practices. According to this logic, all public organizations address the questions contained in their surveys to the patients. Nothing more or less is asked. And you know that there are conditions for this, such as monthly face-to-face interviews, in the period they want, and they fulfill the survey practices in accordance with these conditions. But this is not the case in the private sector, of course, because in the private sector patient loyalty is important, satisfaction is one of the most important criteria. In terms of patient satisfaction, yes, they are inspired by a survey like the Ministry of Health's survey, but they also add their own questions. The things they specifically want to measure are added	NCP 6
Absolutely. Our head nurse of nursing services has a routine meeting with our charge nurses every month. This responsible meeting is also a meeting with an agenda. In one item, we receive feedback on innovation studies, scientific studies or innovations and studies that people want to do in their own fields. We express that we are always open to these ideas, and if there are any ideas about it, whether it is a decision we can make or not, we present it to the board and give this feedback to our friends. Innovation is very important for us because, as I said, we are in serious competition both professionally and institutionally.	NCP 3
"Obviously, this is a cultural thing. In Turkey, clinical innovation, openness to innovation, etc. are not very suitable for our culture. The new assistant doctor does whatever the physician says. They cannot have their own ideas and thoughts. Likewise, if the chief physician says it, the infection control committee approves it. In fact, even if they say the exact opposite of what they said 2 minutes ago, whatever the chief physician says, he says exactly the same as "Yes, you are right, Pasha". So in our culture there is a lot of clinical innovation and so on, maybe in very big health groups, private health groups, but not in Turkey in general. You know, the people who implement it are the ones at the top, it goes down from the top, but I don't think there are many people from the bottom who express opinions like this would be good in this field. I see it in practice.	NCP 2

When participants' opinions of their organizations' care delivery process were examined, it was found that positive opinions on the topics were more common (n=31). The highest positive

evaluations were found in the themes of existence/implementation of clinical standards and protocols (n=8), systematic measurement of patient satisfaction (n=5) and consideration of patient needs (n=4). It should be noted that the majority of the positive evaluations on the themes, especially on the systematic measurement of patient satisfaction, belong to the employees of private and city hospitals. Again, the theme of taking patient needs into consideration in treatment planning and process was generally evaluated positively by private hospital employees. Ensuring patient participation and ensuring coordination and integration in care delivery were generally evaluated negatively by the employees of all organizations. The theme of supporting the idea of clinical innovation was generally evaluated negatively (n=7) and all of the positive evaluations (n=5) belonged primarily to the employees of private and then city hospitals.

Thus, it can be concluded that private hospitals are more prepared for a possible shift to value-based healthcare than public hospitals in terms of the care delivery process. Because their primary goal is to make a profit in addition to providing healthcare services, private hospitals that value patient and employee satisfaction make special efforts to support clinical innovation, work in an integrated and coordinated manner, and systematically conduct measurements such as patient satisfaction. Some statements on this topic are presented below.

Table 12 shows the themes and sub-themes and the corresponding opinions formed according to the responses to the questions asked to determine the participants' views on the comprehensiveness of the provider network of the organization. Some of the statements made by healthcare professionals on this topic are also presented in Table 12.

Table 12. Assessments on Scope of Provider Network

Main Theme	**Sub Themes**				**N**	**%**
		Opinions	**n**	**%**		
Opinions on the comprehensiveness of the organizations' provider network	Continuity of Care	Positive	4	30,8	13	39,4
		Negative	8	61,5		
		I don't know	1	7,7		
	Organization Specific Performance Standards	Positive	2	18,2	11	33,3
		Negative	7	63,6		
		I don't know	2	18,2		
	Clinical Scope	Suitable	1	11,1	9	27,3
		Not Suitable	8	88,9		
TOTAL					33	100,00

Statement	**Participant**

It should definitely start with public health :) In other words, it should start with prevention and raising public awareness. Everything starts at home first, you know. That's why I say that we have come too far up to the 3rd step, that is, before, those village midwives, nurses, doctors, health centers were very good structures. They were the points that solved this issue at the source. Was it enough, no, I mean, their role is also up to a point, but public health is very important. I mean, there are families who run to the hospital when their baby's fever rises a little at home. So we need to teach what can be dangerous and how dangerous it can be, we need to increase health literacy. Medicine, medicine, medicine... I mean we are addicted to too many medicines. We are far away from preventive health services. So I think we need to allocate time and budget for these first. If we solve these points, we will be comfortable with the other steps. Where to start, it should start before people get sick.	NCP 6
The disease is not an issue that can be solved by the patient coming to the hospital for 10 minutes. In other words, at a certain age, people should be followed up for certain tests and then maybe directed to clinics and secondary care centers. Measures can be taken to protect and take precautions without solving the problem only in the hospital. In other words, when a physician comes to the hospital, he/she may not be able to deal with the patient in its entirety, as there are too many things that a physician can do in ten minutes. He has to produce the solution at that moment... So I think the issue can be solved by orienting towards preventive medicine and guiding people.	NCP 5
Continuity of care is closely linked to patient follow-up. The system is not conducive to follow-up. If you want to follow up with a patient, you have to make an extra effort. You have to involve the patient in the process; if the patient is not involved, you cannot follow up. Unfortunately, the system does not create a record for follow-up.	CP 1
There is a performance-related software used by our human resources. The evaluations related to this software, people evaluate themselves, their individual manager evaluates them and it is also approved by the top senior manager, and after that evaluation, performance evaluations, we meet with people one-on-one and discuss with them how their deficiencies can be completed and where they need to be improved. As I said, we also have performance evaluations in the form of rewards, where we support them with bonuses. We have a system that we use in this way.	NCP 3

When the responses of the participants were analyzed, it was determined that the opinions expressed by the organizations on the scope of the provider network were generally negative (n=23). The majority of participants indicated that they were unable to provide continuity of care (n=8). Patient follow-up, especially as expressed by clinical professionals, depends more on the patient's participation. Organization-specific performance standards were not set by many organizations (n=7).

According to the participants, public and city hospitals are based on the standards developed by the Ministry of Health, and public hospitals in particular fail to fully implement these standards. All of the participants who stated that organization-specific performance standards are set and that these standards are followed seriously are employees of private hospitals. Regarding the clinical scope, the participants stated that the disease is a phenomenon that should be dealt with

through preventive services and public health approach before it occurs. After discharge, the patient should continue to be taken care of and controls and follow-up should be ensured. However, it was stated that clinical coverage was not carried out in this way in the organizations where the participants worked (n=8). From this point of view, it can be concluded that the healthcare organizations operating in Turkey are not ready for the change to value-based healthcare in the scope of provider network. Some of the statements on this subject are presented below.

Table 13 presents the themes and sub-themes formed in line with the answers given to the questions asked to determine the participants' views on the clinical and operational informatics of the organization they work for, and their views on these themes. Some of the statements made by healthcare professionals on this topic are also presented in Table 13.

Table 13. Assessments on Clinical and Operational Informatics

Main Theme	**Sub Themes**				**N**	**%**
		Opinions	**n**	**%**		
Assessments on Clinical and Operational Informatics of Organizations	Existing Information System is Appropriate and Adequate	Positive	8	72,7	11	30,6
		Negative	3	27,3		
	Data-Driven Decision Making in the Organization	Positive	5	55,6	9	25
		Negative	4	44,4		
	Systematic Collection and Measurement of Data	Positive			7	19,4
	Data Analytics Specialist	Positive	5	83,3	6	16,7
		Negative	1	16,7		
	Auditing of Stored Data	Positive	2	66,7	3	8,3
		Negative	1	33,3		
TOTAL					36	100

Statement	**Participant**
This is where city hospitals make a serious difference. The infrastructure of the information systems, what we call the neural network of the system, has been very fine-tuned. It has gone far beyond the hospital software program and patient data entry. It has gone to artificial intelligence. We are now using business intelligence, so we have systems that interpret the data that we get and process the data very well, even receiving and processing data from medical devices. You know, we used to give the patient a piece of paper and send it to them. Now all these medical devices talk to the informatics infrastructure. Because the city hospitals are currently following HIMSS standards, everything is completely based on information systems and data analysis. So I think one of the biggest contributions of these city hospital projects is obviously this, electronic patient records and digitization of everything.	NCP 6
The organization never decides on its own. A letter comes from the ministry or higher authority and that's how it happens. In other words, it cannot make a change according to its own data, you know, these are completely quality or according to the ministry's data, not the organization's own data, but according to the ministry's data...	NCP 4

It was found that the themes created for the clinical and operational informatics of organizations were generally evaluated with positive statements (n=27). In terms of clinical and operational informatics, it can be concluded that the gap between private and public is not as wide as in other areas. It is stated that the information systems available in the organizations are generally appropriate and sufficient (n=8). Especially "e-Nabız" integration in some organizations is evaluated very positively. While public hospitals use information systems affiliated with the Ministry of Health, private and city hospitals use their own software, which enables data collection on both clinical and non-clinical processes.

Participants expressed the highest number of negative opinions about data-based decision making (n=4). When the responses were analyzed, it was found that these negative opinions were expressed especially by public hospital employees. This situation was associated with the inability of organizations to make decisions on their own and according to their own data, as decisions are generally made at the ministry level in public hospitals. Data-driven decision-making is a process where decisions are made based on objective data and statistical analyses. This indicates that despite the existing infrastructure for data collection, there is a lack of utilization of the collected data in the decision-making phase in clinical and operational areas. Analyzing all the statements on sub themes, it can be interpreted that IT is the area where organizations are most prepared for a possible change to a value-based system.

Table 14 presents the themes and sub-themes formed in line with the answers to the questions asked to determine the views of the participants on the financial strength of the organization they work for and their opinions on these themes. Some of the statements made by healthcare professionals on this topic are also presented in Table 14.

Table 14. Assessments on Financial Strength

Main Theme	**Sub Themes**				**N**	**%**
		Opinions	**n**	**%**		
Assessments on the Financial Status of Institutions	Population-specific Costing Methods	There is	3	21,4	14	33,3
		No	7	50		
		I don't know	4	28,6		
	Financial Resources and Budget Allocated	Adequate	4	33,3	12	28,6
		Inadequate	8	66,7		
	Resources and Distribution	Inadequate			5	11,9
		Positive	2	50	4	9,5

	Budget for Training and Talent Development	Negative	2	50		
	Budget for Improvement and Change	Positive	2	50	4	9,5
		Negative	2	50		
	Technology and Infrastructure Budget	Positive	1	33,3	3	7,1
		Negative	2	66,7		
TOTAL					42	100

Statement	**Participant**
I do not see it possible to transition to a value-based system in terms of cost and finance. While the cost situation is difficult to manage even in the current system, I think it will be more challenging in a value-based system.	CP 4
Of course, it would be too optimistic to think that the transition to a natural value-based system will happen tomorrow. I mean, first of all, there has to be the will of the public sector and the adequacy of the budget. I don't see this as very valid at the moment.	NCP 2
So there has to be quality against value, and there has to be a fee. In order for us as an institution to get all the quality certificates that we are talking about now, there has to be a fee for that, these are all paid documents, and if you want to provide a quality service in return, you have to allocate a budget for that. If you allocate a budget, if you provide a quality service, you already have good values, so I think these are elements that complement each other. And in this we already have a management that is aware of this, and in our organization there is definitely a budget allocated for these values on the financial side.	NCP 3

It was found that participants' assessments of the financial status of the organization were mostly negative (n=26). The majority of healthcare professionals (n=7) indicated that they do not use costing methods specific to the patient population in their organizations. It was noted that (n=3) of the employees who reported using such costing methods were from private hospitals. In general, the financial resources and budget of the organization were reported by the participants (n=8) to be insufficient for system change. The participants who reported that the financial resources and budget allocated are sufficient were also private hospital employees. (n=4). Regarding the issue of resources and allocation, opinions were generally expressed as inadequate (n=5), and all these opinions belonged to public hospital employees. Based on participants' views of the financial strength of their organizations, it can be concluded that the organizations are not financially ready for the change to value-based care. Some of the statements on this topic are presented below.

3. DISCUSSION

Value-based healthcare is a concept that has gained increasing attention in the healthcare sector in recent years. Studies in the literature show that many countries have adopted value-based methods

to improve their healthcare systems and have achieved positive results (Sorenson et al., 2013; Kamae, 2010; Teperi et al., 2009; Özsarı, 2018). Although there are theoretical studies in Turkey, there are not enough comprehensive studies on practice. However, the results of our study show that even though the delivery approach in private and city hospitals is not labeled as "value-based health care", it is carried out in parallel with this type of care delivery and with the same objectives as the delivery of value-based health care. The fact that service providing in public hospitals cannot be realized in exactly this way can be attributed to the fact that the legal legislation and regulations are too binding for the public sector, and therefore they cannot go beyond them to provide services. In fact, when we look at the expectations of both public and private healthcare professionals from the system, these demands are in line with the promises of the value-based healthcare system. When the results of the study are examined, it can be seen that health professionals criticize Turkey's current health care system mainly in areas such as the care delivery process, lack of resources and disruptions in distribution, problems in access to care, and quality and safety problems.

Amarat (2021), in his study examining stakeholder perspectives on value-based healthcare, reported that participants identified the lack of a holistic approach and the provision of immediate solutions as systemic design problems within the Turkish healthcare system. They also described issues related to service delivery, rising costs, and sustainability as implementation-related problems. According to the participants, problems in healthcare service delivery are among the most significant issues. They associate these problems with dissatisfaction, lack of trust, and the absence of standards, and they believe that these issues can be resolved through value-based healthcare services. These findings are consistent with those of our study.

Ergin (2019), when examining the outcomes related to the creation of value, suggested that creating value could be the solution to similar problems within the Turkish healthcare system. In particular, the inability to provide care in an integrated and holistic manner, the problems in the cascading and referral chain that will ensure this, the problems in the functioning of family medicine, the inability to provide holistic treatment and follow-up of the patient, the quantitative and qualitative shortage of other resources, especially labor force, preventing quality and equal service provision, geographical and wage-based service access problems and inequalities are the problems that are dealt with on the basis of the value-based health care approach (Porter ve Teisberg, 2006; Porter ve Lee, 2013; Kim, Farmer ve Porter, 2013).

In this study, all participants agreed that a value-based system could be considered in place of the current healthcare system. The majority of participants (69.2%; n=9) believed that transitioning to a value-based healthcare system is possible for Turkey. They noted that existing regulations are well-prepared to support the value-based system, there is a supportive will, and the technological infrastructure is robust. Most of the participants who believed in the feasibility of transitioning to value-based healthcare also emphasized that certain preliminary changes are required, and the transition would be a long-term process. The most frequently highlighted sub-themes for change by the participants were "Education and Awareness," "Management and Leadership," and "Resource-Related Changes."

These findings are consistent with Ergin's (2019) study, which also emphasized the importance of education and management adjustments to meet the needs of value-based healthcare services. In our study, 30.8% of the participants (n=4) stated that transitioning to a value-based healthcare system is not feasible under current conditions. The infeasibility was attributed to socio-cultural differences in the society, and particularly the lack of infrastructure and resources in public hospitals, as well as the inefficiencies in managerial processes. These findings align with Amarat's (2021) study, where some participants expressed that transitioning the Turkish healthcare system to value-based services would not be easy. Similarly, literature indicates that stakeholders in the healthcare system often describe value-based healthcare as a utopian vision or an ideal system (Reinhardt, 2006). However, over time, with implementation and development, it becomes apparent that it is more than just a utopian vision. Based on the findings of our study and the literature on value-based healthcare, it is believed that If implemented with the necessary changes, value-based healthcare can be a suitable reform for the Turkish healthcare system and an ideal method to meet the needs.

In particular, the expectations of clinical professionals overlap with the promises of value-based systems. However, clinical professionals are less likely than non-clinical professionals to believe in a value-based healthcare system. The quantitative deficiency of the workforce, the level of awareness of the society, the culture of resistance to change prevailing in Turkey, the belief in the experience and merit of the leaders appointed to health organizations, especially public hospitals, and the belief that the patient-oriented nature of this system will be misunderstood and make them feel less valuable, and most importantly, the belief that this system will not be sustainable as in previous systems, are the biggest obstacles to the confidence of clinical

professionals, the building blocks of the value-based system, in the transition to the system. As Porter and Teisberg (2007) stated in their study, the fact that clinical professionals, especially physicians, are the most important factor in the implementation of value-based health services reveals the importance of convincing and preparing clinical professionals and ensuring their voluntary participation in the process. Nillson et al. (2017) stated that it is important for healthcare providers to involve their employees in the transition process and ensure that they understand value-based health goals and principles and have the necessary skills and knowledge. The findings of our study confirm this recommendation. It was emphasized by the participants that organizations should prepare for the process by raising public awareness, making radical changes, and aligning the care delivery approach of clinical professionals with the value-based system. It was also stated that the most important task for clinical and operational leaders is to prepare employees for the process, support their education and development, care their ideas and feedback, apply methods that will provide motivation and incentives, and ensure their participation in decision-making. Our findings align with those of Ergin (2019), who emphasized that creating value for healthcare employee is contingent upon motivation and recognition, salary and compensation, and the adequacy of healthcare staffing.

The shift to a value-based healthcare model can often represent a radical transformation for healthcare providers, and the success of this change is closely linked to their readiness for this new approach. The first step in preparing is for healthcare providers to shift their focus from volume to value. When the findings of our study are analyzed, it is seen that the majority of participants stated that they had not heard of value-based healthcare before the interview. When asked to define what value means, participants most frequently associated value in healthcare with holistic, integrated care and preventive health services. These were followed by themes of patient-centered care, quality service delivery, reasonable cost and cost-effectiveness, and efficiency. Based on these insights, participants stated that in order to create value, patient-oriented, quality care should be provided at reasonable cost, in a holistic and integrated manner. These perceptions of value are very consistent with definitions of value-based services in the literature (Porter and Teisberg, 2006; Block, 2016; Terrell, 2018; van Citters et al.,2014; Nilsson et al. 2017; Elf et al., 2017; Gordon, Chang and Burrill, 2018). In Ergin's (2019) study, participants' evaluations of what value-based healthcare means to them were categorized into three themes: "cost-quality relationship," "cost-efficiency relationship," and "cost-preventive healthcare relationship." In Amarat’s (2021) study,

participants' responses regarding the concept of value were clearly articulated under a single theme. Accordingly, value-based healthcare encompasses the measurement of service costs, the effective and efficient use of resources, the achievement of desired health outcomes, and the integration of services. While our findings align with these studies, our study indicates that the concept of value is most frequently associated with holistic, integrated care and patient-centered care. In contrast, Ergin (2019) and Amarat (2021) found that cost-related perspectives were more predominant. This suggests that, over time, the importance of patient-centeredness and integrated care has begun to be more widely recognized. Considering the aspects of the system that employees criticize, their expectations from the system and their perspectives on value, it can be concluded that shifting the focus from volume to value will not be very difficult for Turkey. The important thing here will be to ensure stability, will and support.

Determining readiness for change to value-based healthcare requires a comprehensive view that considers many dynamics, including organizational structure, care delivery process, financial status, provider network scope, and integrated clinical and operational informatics. This picture will enable service providers to have foresight about the areas that need to be changed and adjusted in their organizations while preparing for value-based health care delivery. When the findings of our study were analyzed, it was found that the organizations were most prepared for value-based system in terms of informatics. In areas such as the availability of integrated informatics systems, data collection and evaluation, easy access to data, and infrastructure, both public, private, and city hospital employees gave positive evaluations about their organizations. It was found that only in public hospitals the data collected was not used in decision-making, and the reason for this was the tendency to implement the decisions taken by the Ministry of Health in public hospitals. It was determined that the most unprepared aspect of the organizations for the change towards a value-based system was their financial strength. The majority of healthcare professionals, especially public hospital employees, do not consider their financial competence and the allocated budget sufficient to make changes. In particular, the funding and support allocated to areas such as education/skill development and resources were generally evaluated with negative statements. Most of the positive evaluations of the financial strength of the organization belong to private hospital employees. Considering all areas such as care delivery process, scope of service provider network, financial strength, and informatics, it is concluded that public hospitals operating in Turkey are not fully prepared for the transition to a value-based system but can be prepared with

some adjustments. Tracking the value created and the costs incurred for each patient requires information technology platforms capable of collecting, analyzing, and reporting data (LaPointe, 2016; Jensen & Ward, 2016). Studies on value-based healthcare indicate that it is a fundamental strategy for enhancing value in healthcare services and that transitioning to learning health systems is necessary in the future (Menear et al., 2019; Porter, 2010). Arshoff and Knapp (2020) have identified several key elements that may be important in transforming healthcare services into value-based systems. These elements include investments in education, training, and development within the health system, conducting a wide variety of trials and pilot projects, and sharing lessons learned and experiences with stakeholders. In order for the value-based system to be easily implemented in public hospitals in the long term, first of all, there needs to be a radical change in the mind-sets and health awareness of both society and providers. Private hospitals and city hospitals, on the other hand, seem to be more prepared for value-based service delivery, and even if they do not call it a value-based system, they are making great efforts to provide services in parallel with the concept of value-based care delivery.

4. CONCLUSION AND RECOMMENDATIONS

Implementing value-based healthcare requires a strategic agenda that combines the vision of its founders with practical experience. Providers must prepare for change by understanding the principles and concepts of value-based healthcare and taking the necessary steps to align their current practices with these principles. Providers should understand the principles of value-based healthcare and consider steps such as measuring health outcomes, adopting new financial models, using integrative technology, engaging leadership and management, educating employees, and identifying mechanisms to motivate stakeholders to act in a value-based manner. Studies in the literature indicate that when healthcare organizations focus on value-based care, they will achieve a number of benefits, including improved patient outcomes, higher patient satisfaction, and lower costs. In this way, the health needs of the society will be better met and health services will be provided in a more ethical and human-centered approach. Therefore, healthcare organizations should be prepared to adopt and implement this approach.

In conclusion, the value-based healthcare model emerges as a viable and applicable option for Turkey's healthcare system. However, for this transition to be successful, healthcare institutions

must undertake comprehensive preparations. This preparatory phase will facilitate the adaptation of institutions and healthcare personnel to this new system and, in the long term, enhance the quality of healthcare services.

There are certain limitations to this research that must be considered. The findings are based on qualitative research data obtained from a limited sample in a specific province of Turkey within a defined time frame, which makes generalization to the entire country impractical. Consequently, future research should be conducted with broader and more diverse sample groups to examine the long-term effects. Furthermore, it is recommended to use quantitative research methods to measure the impacts of transitioning to value-based healthcare. More research is needed to determine how healthcare providers and stakeholders will adapt to this new model and what factors will influence its success. In this context, comprehensive analyses should be conducted to ensure an effective transition from the current healthcare system to a value-based healthcare model. The strengths and weaknesses of the system should be identified, and opportunities and threats should be assessed. Future studies should consider the socio-demographic characteristics of the population, compare the previous and new healthcare systems, and plan the transition process by identifying areas that require change.

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The Investigation of Health Tourism Potential: The Case of Samsun Province

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Abstract

Aim: To determine the current situation by evaluating the health services offered to health tourists in Samsun province and to reveal the health tourism potential with health tourism data.

Methods: The population of this descriptive cross-sectional study consists of health tourists who received health services in Samsun province between 2017-2021. Data were obtained through the foreign patient tracking system and e-nabız.

Results: The number of health tourists has increased with increasing momentum over the years. According to the type of arrival of health tourists, health services were provided mostly within the scope of health tourism. The clinics to which health tourists mostly applied are emergency medicine, gynaecology and ophthalmology clinics. The highest number of health tourist applications were in July, August and September.

Conclusion: It was determined that Samsun province has a health tourism potential. This potential

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should be developed by integrating medical tourism with other types of health tourism and by carrying out joint activities with the co-operation of all stakeholders.

Keywords: Health, Health Tourism, Health Tourists, Medical Tourism

INTRODUCTION

The World Health Organisation defines health as 'not only the absence of disease and disability but also the state of complete physical, mental and social well-being' (WHO, 2023). People seek health services to protect and improve their health, to treat and rehabilitate diseases. As a result of developments in science and technology, human life span has increased and the elderly population has started to increase. Accordingly, the share allocated to health expenditures is increasing and the global health market is growing day by day. International health tourism can be defined as all health services received by individuals who have come from abroad for a temporary period of time to receive health services, who are not citizens of the country or who are citizens of the country but continue to reside abroad, as well as the support services they receive related to them. Health services provided to individuals who are temporarily in another country for any reason other than their own country and who develop unexpected illnesses and emergencies during this period are defined as 'tourist health'. International health tourists are defined as patients who receive health services within the scope of these two concepts (Official Gazette, 2017; Ministry of Health, 2015; Republic of Turkey Ministry of Health, 2023; TurkStat, 2023). Under the main heading of health tourism, there are health tourism types such as medical tourism, third age tourism, disabled tourism, thermal/SPA wellness tourism (Tengilimoğlu, 2020).

There are many definitions of health tourism in the literature (A.Glinos, Baeten, Helble, & Maarse, 2010; Bookman & Bookman, 2007; Carmen & Iuliana, 2014; Cohen, 2008; Connell, 2006; Lee & Spisto, 2007; Yu & Ko, 2012). Health tourism is the temporary visit of a health tourist, who is in search of health services due to various factors, to a place other than his/her place of residence to receive the health services he/she needs. The most important points affecting the choice of health facility and country by health tourists within the scope of health tourism are the cost, medical technology, quality of health service and rapid treatment methods, the presence of physicians specialised in their field, accommodation criteria and accreditation of the health facility (Ministry of Health, 2015). It is known that Turkey has health facilities that can provide health services to international health tourists within the scope of health tourism, competent health

personnel, technical equipment, knowledge and technology (T.C. Ministry of Health, 2023). Turkey's advantages positively affect its preference in health tourism.

Health tourism is a service export sector that includes knowledge, experience and labour that earns foreign currency in order to contribute to the national economy. In 2021, 670,730 health tourists received health services in Turkey and the income from health tourists amounted to 1 billion 726 million 973 thousand dollars. In 2022, 1 million 258 thousand 382 people received health services within the scope of health tourism and the income obtained was 2.119.059 thousand dollars. In 2023, 1,398,504 people came to Turkey to receive health services and the income obtained increased further and amounted to 2,307,130 thousand dollars (Republic of Turkey Ministry of Health, 2023; Republic of Turkey Ministry of Trade, 2023; TurkStat, 2023; USHAŞ, 2023).

Samsun, which is the centre of the Black Sea Region in terms of geographical location, is one of the cities with the highest tourism potential in the region with its nature, plateaus, canyon, hot springs, cultural and historical richness, beaches, sea, highway, international airport, railway and transportation facilities (Republic of Turkey Ministry of Culture and Tourism, 2023). At the same time, Samsun has the competence to meet the demands of health tourists at the highest level with its health facilities, bed capacity of health facilities, quality of health services, production facilities of medical devices and surgical hand tools, medical technology and technical equipment, health professionals specialised in their fields, trained manpower, agencies providing intermediary services, sports facilities suitable for international Olympics, spas and accommodation facilities (Samsun Provincial Health Directorate, 2023; T.C. Ministry of Culture and Tourism, 2023). When the accommodation facilities in Samsun province are evaluated, there are 3 5-star, 9 4-star hotels, 2 of which are thermal hotels, 15 3-star, 4 2-star hotels, boutique hotels and pensions (Republic of Turkey Ministry of Culture and Tourism, 2023).

The health infrastructure of Samsun province has a total of 4,440 physicians, including 1959 specialists and 719 dentists, and a total of 22,849 qualified human resources, including 5,811 midwives and nurses. It has a total of 27 hospitals, including 10 state hospitals, 3 integrated district hospitals, 2 branch hospitals, 1 oral and dental health hospital, 1 medical faculty hospital, 1 dentistry faculty, 1 training and research hospital, 8 private hospitals, with a total capacity of 5293 beds. It has a strong health infrastructure with 3 oral and dental health centres, 6 medical centres, 5 dialysis centres, 28 dental polyclinics, 108 free physician offices, 188 free dentist offices, 447

family medicine units, 2 healthy life centres. In addition to all internal and surgical health services, many specialised services such as tissue and organ transplantation, IVF treatment, stroke centre, traditional and complementary medicine centres, medical and radiation oncology centres, obesity centre, nuclear medicine centres, dialysis, burns, palliative care, home health care services, genetic diseases evaluation centre are offered. There are 38 health facilities, including 1 training and research hospital, 1 medical faculty university hospital, 1 oral and dental health hospital, 2 state hospitals, 8 private hospitals, 4 medical centres, 4 oral and dental health polyclinics, 17 medical practices, and 7 intermediary institutions with the Ministry of Health International Health Tourism Authorisation Certificate. Considering that health facilities and intermediary organisations that do not have the mentioned International Health Tourism Authorisation Certificate cannot engage in health tourism activities, it has been foreseen that health facilities and intermediary organisations that want to engage in health tourism activities will obtain an international health tourism authorisation certificate. It is stated that Samsun province, which has an important potential within the scope of health tourism, ranked 7th in the list of provinces with the highest number of applications within the scope of health tourism in 2020 (Ministry of Health, 2021; Samsun Provincial Health Directorate, 2023). Considering the new investments made in Samsun province, it is obvious that the existing potential will increase even more. With the completion of Samsun City Hospital, one of the most important health investments in the Black Sea Region, it has been predicted that it will further increase the mobility of health tourists within the scope of health tourism and will receive a higher share of the income obtained within the scope of health tourism.

This study tries to determine the current situation and health tourism potential of Samsun province with health tourism data. The importance of the study can be noted that one of the rare studies evaluating the current situation and health tourism potential of Samsun province with health tourism data and that it will contribute to the field.

1. RESEARCH METHODOLOGY

The population of this descriptive cross-sectional study consists of health tourists who applied to receive health services in Samsun province between 2017-2021. The anonymised data of all health tourists who received health services within the scope of health tourism were obtained by applying to Samsun Provincial Health Directorate. In this study, health tourist data for 2017 and 2018 were

obtained from the Foreign Patient Tracking System, and health tourist data for 2019 and later were obtained from the e-Nabız system due to the system change. Descriptive analysis method was used in the evaluation of the data. Ethics committee approval dated 23/01/2023 and numbered 2023/02 was obtained from Alanya Alaaddin Keykubat University. Institutional permission was obtained from Samsun Provincial Health Directorate dated 11/03/2022 and numbered E-26521195-604.02.02.

2. ANALYSIS

The study was carried out by examining the number of applications of health tourists receiving health services in Samsun province between 2017-2021. Within the context of the study, the distribution of health tourists according to years, type of arrival, type of institution, type of clinic they applied to, countries and time of application is given.

Table 1 shows the distribution of the number of applications of health tourists in Samsun province according to years and type of arrival. It has been noted that the number of health tourists continues with increasing momentum over the years. When the type of arrival of health tourists according to years is evaluated, it has been observed that 44.53% of tourists came within the scope of health tourism 55.47% in the total of 5 years.

Table 1: Distribution of the Number of Applications of Health Tourists in Samsun Province by Years and Type of Arrival

Type of arrival	2017		2018		2019		2020		2021		Toplam	
	n	%	n	%	n	%	n	%	n	%	n	%
The Health of tourist	1467	**75,31**	1477	38,58	9158	**58,00**	5885	32,42	13267	43,73	31254	44,53
Health Tourism	481	24,69	2351	**61,42**	6753	42,00	12268	**67,58**	17072	**56,27**	**38925**	**55,47**
Total	**1948**	**100**	**3828**	**100**	**15911**	**100**	**18153**	**100**	**30339**	**100**	**70179**	**100**

The distribution of the number of applications of health tourists according to the type of institution is given in Table 2. It has been determined that health tourists received health services from private health facilities at a rate of 51% in 2017, 70% in 2018, 80% in 2019, 61% in 2020, and 59% in 2021. Among the types of institutions divided into three groups as public, university and private,

it is seen that health tourists mostly receive health services from private health facilities.

Table 2: Distribution of the Number of Applications of Health Tourists by Type of Institution

Type of Instution	2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%
Public	508	26,08	711	18,57	2137	13,43	6357	35,02	9537	31,43
University	445	22,84	452	11,81	1014	6,37	698	3,85	2906	9,58
Private	995	**51,08**	2665	**69,62**	12760	**80,20**	11098	**61,14**	17896	**58,99**
Total	1948	100	3828	100	15911	100	18153	100	30339	100

It has been figured out that the most common clinic where health tourists apply is the emergency medicine clinic. 29% in 2017, 19.57% in 2018, 15.10% in 2019, 25.64% in 2020, and 34.52% in 2021. Table 3 shows the distribution of health tourists according to the clinics they applied to. Although health tourists apply to different clinics at different rates every year, the most preferred clinical branches are emergency medicine, gynecology, ophthalmology, general surgery, internal medicine, orthopedics and traumatology, dermatology, otolaryngology, cardiology, urology, physical medicine and rehabilitation, neurosurgery, plastic and reconstructive aesthetic surgery.

Table 3: Distribution of Health Tourists according to the Clinics

Clinics	2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%
Emergency	565	**29,00**	749	**19,57**	2403	**15,10**	4655	**25,64**	10378	**34,09**
Gynaecology and Obstetrics	117	6,01	169	4,41	1786	11,22	1945	10,71	2408	7,91
Eye Diseases	111	5,70	139	3,63	1425	8,96	1388	7,65	1520	4,99
General Surgery	75	3,85	255	6,66	702	4,41	943	5,19	1181	3,88
Internal Medicine	69	3,54	167	4,36	971	6,10	1055	5,81	1210	3,98
Orthopaedics and Traumatology	76	3,90	190	4,96	856	5,38	805	4,43	1070	3,52
Dermatology	34	1,75	107	2,80	807	5,07	749	4,13	737	2,42
Ear Nose Throat	72	3,70	121	3,16	552	3,47	622	3,43	646	2,12
Cardiology	51	2,62	206	5,38	530	3,33	558	3,07	580	1,91
Urology	52	2,67	161	4,21	504	3,17	492	2,71	520	1,71
Physical Medicine and Rehab.	44	2,26	157	4,10	381	2,39	332	1,83	506	1,66

Brain and Nerve Surgeon	38	1,95	132	3,45	340	2,14	293	1,61	441	1,45
Plastic Surgery	177	9,09	231	6,03	447	2,81	73	0,40	100	0,33
Other	467	23,97	1044	27,27	4207	26,44	4247	23,37	9142	30,03
Total	1948	100	3828	100	15911	100	18153	100	30339	100

The distribution of health tourists by country between 2017 and 2021 is given in Table 4. Health tourists from 145 different countries have been found to prefer Samsun province to receive health services. In the table, the countries where the most health tourists come from are listed, and although the application rates by country have changed over the years, the first four countries in the ranking are Iraq, Germany, Azerbaijan, and Georgia, which are the countries where the most health tourists come every year.

Table 4: Distribution of Health Tourists by Countries

Country	**2017**		**2018**		**2019**		**2020**		**2021**	
	n	%	n	%	n	%	n	%	n	%
Iraq	596	**30,60**	1154	**30,15**	9661	**60,72**	12876	**70,93**	14480	**47,73**
Germany	255	**13,09**	989	**25,84**	727	**4,57**	560	**3,08**	3710	**12,23**
Azerbaijan	199	**10,22**	217	**5,67**	629	**3,95**	631	**3,48**	1257	**4,14**
Georgia	256	**13,14**	448	**11,70**	1204	**7,57**	746	**4,11**	1147	**3,78**
Afghanistan	49	**2,52**	40	1,04	382	**2,40**	756	**4,16**	1046	**3,45**
Austria	12	0,62	120	3,13	133	0,84	46	0,25	516	**1,70**
Iran	43	2,21	10	0,26	106	0,67	201	1,11	437	1,44
Netherlands	38	1,95	209	**5,46**	75	0,47	84	0,46	372	1,23
Turkmenistan	29	1,49	25	0,65	133	0,84	259	1,43	335	1,10
Romania	3	0,15	3	0,08	28	0,18	186	1,02	300	0,99
Uzbekistan	17	0,87	23	0,60	70	0,44	85	0,47	291	0,96
France	23	1,18	59	1,54	58	0,36	37	0,20	229	0,75
Russia Fed.	41	2,10	24	0,63	115	0,72	101	0,56	252	0,83
Other	387	19,87	507	13,24	2590	16,28	1585	8,73	5967	19,67
Total	**1948**	**100**	**3828**	**100**	**15911**	**100**	**18153**	**100**	**30339**	**100**

The distribution of the application times of health tourists by months during the year is given in Table 5. It was determined that the highest number of health tourist applications were in July, August and September.

Table 5: Distribution of Health Tourists by Application Time

Months	2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%
January	117	6,01	173	4,52	864	5,43	1788	9,85	1264	4,17
February	106	5,44	182	4,75	972	6,11	1609	8,86	1460	4,81
Mart	128	6,57	173	4,52	1049	6,59	1456	8,02	1773	5,84
April	91	4,67	241	6,30	888	5,58	589	3,24	2180	7,19
May	123	6,31	238	6,22	1139	7,16	790	4,35	3178	10,47
June	125	6,42	247	6,45	942	5,92	1537	8,47	3102	10,22
July	400	**20,53**	475	12,41	1832	**11,51**	1713	9,44	3355	11,06
August	264	13,55	607	**15,86**	1724	10,84	1872	10,31	4177	**13,77**
September	177	9,09	456	11,91	1597	10,04	1994	**10,98**	3243	10,69
October	136	6,98	435	11,36	1704	10,71	1683	9,27	2359	7,78
November	134	6,88	305	7,97	1602	10,07	1660	9,14	2056	6,78
December	147	7,55	296	7,73	1598	10,04	1462	8,05	2192	7,23
Total	1948	100	3828	100	15911	100	18153	100	30339	100

3. DISCUSSION

When the results of studies on health tourism potential in different regions of Turkey using different methods are taken into consideration, it has been determined that there is health tourism potential in many regions (Ataberk & Baykal, 2011; Bozça, Kıraç, & Kıraç, 2017; Büyüközkan, Mukul, & Kongar, 2021; Çetinkaya, 2010; Dalkıran, 2017; Dinçer, Aydoğan Çiftçi, & Karayılan, 2016; Dökme, 2016; Eriş, 2019; Köstepen, 2015; Onur İçöz, 2009; Şahin & Uysal Şahin, 2018; Yorulmaz & Söyler, 2020). In some studies, results stating that the current situation and health infrastructure are not at an adequate level within the scope of medical tourism were also found (Gökdayı & Polat, 2015). According to the results of a study conducted by taking the opinions of physicians working in Samsun province, ithas been concluded that physicians were undecided about Samsun's medical tourism potential and the institutional competencies of hospitals (Demir & Sağlık 2020).

In a study conducted by taking the opinions of people receiving health services within the scope of health tourism, it has been noted that Samsun has health tourism potential and especially medical tourism is interesting (Gül, 2019). In another study conducted by taking the opinions of health tourists receiving health services in Samsun, it has been stated that Samsun has an important

potential in medical tourism (Demir, Oruç, Baştürk, & Övey, 2020).

It has been observed that the number of health tourists in Samsun continued with increasing momentum between 2017 and 2021. In 2019, there is a significant increase in the number of health tourist applications. This acceleration is thought to be the result of the activities carried out by the Provincial Health Directorate within the scope of health tourism (Samsun Provincial Health Directorate, 2023). Provincial Directorate of Health has carried out various activities to promote the health tourism potential of Samsun province to tourism agencies, tour operators and other sector professionals from all over the world at the world's largest international fairs. In addition, with the health tourism panel organised, detailed information on international health tourism was given and evaluations were made on the health tourism potential of the province. In addition, emphasis was placed on training relevant personnel on health tourism and awareness on health tourism was raised by organising trainings on the registration and invoicing processes of international patients in hospitals. In addition, trainings were provided on the certification of health facilities within the scope of health tourism and obtaining a health tourism authorisation certificate. It is thought that these trainings contribute to the correct registration procedures and the provision of qualified health tourism services.

In this study, when the type of arrival of health tourists according to years was evaluated, it has been determined that they mostly applied within the scope of health tourism (55.47%). Health tourists who are provided health services within the scope of tourist health are also important. Because the health tourist, who receives health services in case of unexpected illness and emergency in the country where they are temporarily located, sharing the health service they receive when they return to their own country in a satisfied manner increases the potential of the people they share with to come to the country where they receive services as health tourists within the scope of health tourism. For this reason, it has been expected that the proportion of people coming within the scope of health tourism among health tourists will increase more over the years. In a study conducted in Trabzon, according to the type of arrival of health tourists, it was stated that between 2013 and 2015, 70% of the people who came for tourism purposes received services within the scope of tourist health and 30% received services within the scope of health tourism (Yılmaz et al., 2019).

When the number of applications of health tourists according to the type of institution is analysed, it has been figured out that health tourists mostly receive health services from private

health facilities (58.99%). In addition to the high number of private health facilities with health tourism authorisation certificates engaged in health tourism activities, the fact that private health facilities have more advertising and promotional activities within the scope of health tourism is considered as one of the reasons for preference. According to a study conducted in the Thrace region, health tourism activities are concentrated in public hospitals in Kırklareli and Edirne and in private hospitals in Tekirdağ Province (Dalkıran, 2017).

In our study, it has been determined that health tourists from 145 different countries preferred Samsun to receive health services. Although application rates have changed from country to country over the years, the countries where the most health tourists come have not changed. The fact that Samsun has direct flights to countries such as Iraq, Germany and Austria, that many Iraqis live in Samsun and recommend health services to their own country's citizens, that there is a large Turkish population living in Germany, Austria and the Netherlands, and that it is geographically close to countries such as Georgia and Azerbaijan. It has been noted that the availability of road transportation and the fact that Samsun has the strongest health infrastructure in the Black Sea region contribute positively to the higher number of health tourists coming from these countries. It has been mentioned that by increasing the availability of direct flights to Samsun from more countries, the number of health tourists will increase further and the rates of health tourists coming from countries with direct flights may change over the years.

When the application times of health tourists by months throughout the year are examined; The highest number of health tourist applications was in July, August and September. In a study conducted in Trabzon, it was stated that the most health tourists came in August and more health tourists came in June, July and September (Yılmaz et al., 2019). As in tourism, demand for health tourism is higher in the summer months. It has been noteworthy that the demand, which is higher in the summer months, spreads throughout the year. In the studies carried out within the scope of health tourism, health services should be diversified with other types of health tourism and package health services should be offered, taking into account the spread of health tourism over 12 months.

4. CONCLUSION AND RECOMMENDATIONS

The increasing number of health tourists every year and the health services they prefer reveal that the province is an important destination in terms of health tourism. The diversity of services and clinics offered by health facilities show that Samsun is a prominent center in the field of health

tourism. In addition, data such as the countries where health tourists visit the most and the peak periods provide important findings in determining the potential of health tourism.

The health facilities that Samsun has, the bed capacity of the health facilities, the quality of the health service, medical device production facilities, medical technology and technical equipment, expert health professionals, trained manpower, agencies providing intermediary services, sports facilities suitable for international Olympics, spas and It shows that it has the competence to meet the demands of health tourists at the highest level with its accommodation facilities. In order to further develop this potential, medical tourism needs to be integrated with other types of health tourism and all health tourism stakeholders need to work in cooperation.

It has been concluded that Samsun province has health tourism potential and that a joint effort should be made by all relevant stakeholders to further develop this potential. In future studies, it is recommended to increase cooperation among relevant stakeholders and conduct further research to develop the health tourism sector of the province in a sustainable manner.

Author Contributions

All authors declare that they have contributed to the design, execution and analysis of the manuscript and approve the final version.

Conflict of interest

The authors declare that they have no conflict of interest in the study.

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Examination of The Attitudes of Assistant Physicians to Brain Drain In Health Services

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Abstract

Aim: The aim of this study is to determine the attitudes of resident physicians towards brain drain and to examine whether attitudes towards migration make a difference on the socio-demographic characteristics of the participants.

Methods: As a data collection tool, the Attitude Scale Towards Brain Drain developed by Öncü et al. (2018), a questionnaire form containing questions about the socio-demographic characteristics of the participants, their occupations and their evaluations about health brain drain were used. The research was carried out with 232 assistant doctors working in a university hospital serving in Turkey. Data were collected using face-to-face survey method with healthcare professionals. In the analysis of the data, descriptive statistical methods, t-test for independent samples and one-way analysis of variance (ANOVA) were used. The results were evaluated within the 95% confidence interval.

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Results: According to the results of the study, it was found that 67.7% of the residents wanted to immigrate to another country. There is no statistically significant difference between the participant's gender, age, marital status, income, branch, working hours and years, and brain drain attitudes.
Conclusion: It has been found that the occurrence of violence in health increases health migration in our country and migration will be prevented by creating appropriate working hours and conditions.
Keywords: Physicians, attitude, brain drain.

INTRODUCTION

Throughout history, people have migrated to different regions and countries for various reasons. The concept of migration is defined by the Turkish Language Association (TDK) as individuals or communities going to another place from where they live for financial, political, religious, social and social reasons (https://tdk.gov.tr). Since the early 1950s, the migration of qualified people has gained importance. The migration of qualified, trained workforce to other countries is called brain drain (Tezcan, 2000). Brain drain is the departure of scientists and specialists with advanced knowledge and equipment from their home countries to settle and work abroad (https://tdk.gov.tr/).

Health workers are at the top of the ranking with the highest brain drain (Aluttis et al., 2014). The health problems that arise in the globalizing world increase the demand for health workforce (Sell and Williams 2020). Therefore, the migration of health professionals is becoming an important issue today (Bimal et al., 2016). Healthcare workers are migrating from low and medium developed countries to developed countries (Pantenburg et al., 2018). As a result of this situation; there are push and pull factors that affect the migration of health professionals (Rutten, 2009). Attractive factors are the factors that the country of immigration encourages the individual. Favorable working and living conditions, high income, better education and career opportunities and religious/political freedoms are among the attractive factors (Bang and Mitra 2011; Boros et al., 2022). The repulsive factors include the conditions which are related to the sending country leading to migration, and affect the decision of the individual to leave his/her own country. Low income, poor working conditions and heavy workload, inadequate career opportunities, lack of reputation of healthcare professionals, being unsure about the future, security issues, political and social problems are considered repulsive factors (Bell et al., 2015; Pol et al., 2019).

The health brain drain has various effects in terms of sending and receiving countries. From the point of view of the sending country; it causes a decrease in the number of health professionals

and labor shortages, disruption of health services and limited access to services, a decrease in quality, and higher dissatisfaction (Asadi et al., 2018). As a result, brain drain leads to loss of qualified brain power (Kizito et al., 2015). However, it contributes to maintain a health workforce demanded by the receiving country at a lower cost (Buchan, 2008).

The study aimed to determine the attitudes of the assistant physicians in health services towards brain drain, and to reveal whether their socio-demographic characteristics were effective. In the review, research on brain drain in healthcare is limited, and thus, the study is considered to contribute to the literature.

LITERATURE REVIEW

Studies show that there has been an increase in physician migration in Turkey in recent years. The 2022 study report of the Turkish Medical Association includes the distribution of the number of physicians who received documents to work abroad. According to this report; It was stated that it increased 40 times 10 years ago and 2 times compared to the previous year (Turkish Medical Association, 2023). In the 2024 report of the Turkish Medical Association; It was reported that the number of physicians receiving a good conduct certificate was 3,015 in 2023 and that 681 physicians applied to receive a good conduct certificate in the first four months of 2024 (Türk Tabipler Birliği, 2024). Uğur (2022) concluded that 51.6% of assistant physicians want to receive specialist training abroad and 55.3% want to work abroad (Uğur, 2022). In another study, 84% of assistant physicians stated that they were considering going abroad within one to five years (İstanbul Ekonomi Araştırma, 2022). Eser et al. (2022) stated that 70.7% of students studying at medical faculty want to continue their career abroad and 60% of them want to stay abroad permanently (Eser et al., 2022). Kaya et al. (2023), found that 77.5% of medical school students who participated in the study were considering working abroad in the future (Kaya et al., 2023).

In the study conducted by Karaşin and Karagöz (2023), it was found that factors such as social conditions, personal preferences, national sentiment, the search for opportunities abroad, and negative thoughts influence the brain drain of physicians (Karaşin and Karagöz, 2023). In a study by Mollahaliloğlu et al. (2014) examining the attitudes of medical students towards brain drain, it was found that 70% of the participants emigrated due to unfavorable working conditions (Mollahaliloğlu et al., 2014). It has been stated that medical students who plan to study abroad are considering returning to their country if conditions in the country improve (Güner et al., 2024). In

another study; It was observed that there was no significant difference between medical faculty students' gender, age, income level and region of residence and their perceptions of brain drain. It has been observed that brain drain perceptions vary depending on various factors, including the students' class, foreign language level, desire to work in rural areas, the health system and the society's perspective on physicians. The study found that medical school students are seriously prone to brain drain. It has been found that the reason for this situation is due to the problems experienced in the country and the lack of opportunities (Filiz et. al, 2022). Therefore, it is important to determine the factors affecting brain drain and take the necessary precautions.

1. RESEARCH METHODOLOGY

Sampling And Data Collection: The universe of the study consists of 580 assistant physicians working at a university hospital located in the Turkey. By using the sample size calculation formula, the number of samples representing the universe was found 232 at a confidence interval of 95% (Bal, 2001; Karagöz, 2014). 232 assistant physicians working in the institution were reached between April 22 and June 3, 2022. The data were obtained using the simple random sampling method and through face-to-face interviewing.

Data Collection Tools: A questionnaire consisting of three parts was used as a data collection instrument. The first part of the questionnaire included questions aimed at determining the socio-demographic characteristics of the assistant physicians. In the second part, the participants were asked about their occupational and brain drain related opinions. The last part included the "Attitude Scale towards Brain Drain", development and Turkish validity and reliability of which were performed by Öncü et al. (2018). The one-dimensional and two-component [repulsive and attractive factors] structured scale consists of 16 items. It includes two negative statements (items 3 and 15). Each item is rated on a 5-point Likert chart.

Data Analysis: The data obtained in the study conformed a normal distribution. Therefore, descriptive statistical methods (mean, standard deviation, frequency, percentage), independent samples t test and one-way analysis of variance (ANOVA) were used in the evaluation of the data. Analyses were performed at a confidence interval of 95% and a significance level of $p<0.05$. The analysis of the data obtained was made using the IBM SPSS Statistics 25.0 program.

Ethical Approval: Ethical approval was received from The Social and Human Sciences Research Ethics Committee of a university in Turkey [Dated: 25.03.2022, No: 2022-222], and necessary permissions were received from the health institution where the study was conducted [E-19054817-605.01-234335]. Additionally, the study was conducted in accordance with the principles of the Declaration of Helsinki.

2. FINDINGS

Of the assistant physicians participating in the study, 49.1% (n=114) were female and 50.9% (n=118) were male. 29.3% (n=68) were aged 27 and below, 46.1% (n=107) were aged between 28 and 30, and 24.6% (n=57) were aged 31 and over. 49.6% (n=115) of the participants were single and 50.4% (n=117) were married. Given the income level, %18.5 (n=43) had an income of 10000 TL and below, while it was 10001-15000 TL for 29.3% (n=68), 15001-20000 TL for 21.6% (n=50), 20001-25000 TL for 16.8% (n=39), and 25000 and above for 13.8% (n=32). 16.4% (n=38) were branch in fundamental medical sciences, 58.2% (n=135) were branch in internal medical sciences, and 25.4% (n=59) were branch in surgical medical sciences. When the duration of professional experience of the participants were examined, 27.6% (n=64) had one year or less experience, 45.3% (n=105) had 2-3 years of experience, and 27.2% (n=63) had four years or more experience. Considering the weekly working hours, 29.7% (n=69) were working 40 hours and less, while it was 41-65 for 24.6% (n=57), 66-90 for 26.3% (n=61), and 91 and above for 19.4% (n=45) (Table 1).

Table 1. Demographic characteristics of participants

	Type	Number	%		Type	Number	%
Gender	Female	114	49.1	**Professional Experience**	≤1 year	64	27.6
	Male	118	50.9		2-3 years	105	45.3
Age	≤27	68	29.3		≥4 years	63	27.2
	28-30	107	46.1	**Working Hours**	≤40	69	29.7
	≥31	57	24.6				
Marital status	Single	115	49.6		41-65	57	24.6
	Married	117	50.4		66-90	61	26.3
					≥91	45	19.4
Branch	Fundamental Medical Sciences	38	16.4		≤10000	43	18.5

	Internal Medical Sciences	135	58.2	**Income Level**	10001-15000	68	29.3
	Surgical Medical Sciences	59	25.4		15001-20000	50	21.6
					20001-25000	39	16.8
					≥25001	32	13.8

When the assistant physicians were asked about their satisfaction with their working environment, it was found that 56.5% (n=131) were satisfied, and 43.5% (n=101) were dissatisfied. 60.8% (n=141) stated that they enjoy their job, while 39.2% (n=91) stated the opposite. Considering the status of leaving the profession, it was found that 69.8% (n=162) were not willing to leave their profession, while 30.2% (n=70) stated the opposite. It was determined that 67.7% (n=157) wanted to emigrate to another country, and 32.3% (n=75) preferred to stay. Another finding obtained from the study was that 85.8% (n=199) stated that migration could be prevented in the health sector, while 14.2% (n=33) stated that it could not be prevented.

The vast majority of the participants (99.1%, n=230) were stated to believe that the measures taken to prevent the migration of health professionals in Turkey were not sufficient. When the participants were asked about the factors affecting the health brain drain in Turkey, 43.9% (n=102) mentioned the presence of adverse working conditions, excessive workload and long working hours, low wages, insufficient personal rights, 29.4% (n=68) mentioned malpractice, lack of health policies and violence in health, 17.7% (n=41) mentioned decrease professional dignity and 9% (n=21) mentioned the factors of experiencing future anxiety. The participants were asked to evaluate the negative situations that migration would lead to.

The answers given by the participants are as follows; 66.8% (n=155) of them stated that there will be problems in the quality of health services and 33.2% (n= 77) of the negative situations in the health system, difficulties in accessing health, public health will be adversely affected. When responses regarding the practices that need to be performed to prevent brain drain in health were examined respectively, 25% of the assistant physicians (n=58) mentioned the creation of appropriate working hours and conditions, while 15.1% (n=35) advocated the adoption of effective and continuously functioning health policies, 9.9% (n=23) advocated increasing the necessary

enforcements for violence in health, and 9.9% (n=23) advocated reviewing and improving personal rights. 9.5% (n=22) of the participants stated the necessity of improving wages, while 8.6% (n=20) mentioned increasing professional reputation, 4.3% (n=10) mentioned improving the quality of medical education, and 3.9% (n=3) mentioned the regulation of malpractice lawsuits in order to take the necessary measures. Frequency distributions of the responses were performed.

It was found that the majority of the participants agreed to the statement “I believe that working abroad will improve my living standards" (50.9%, n=118). 47.4% (n=110) completely agreed to the statements “I would like to live in another country where I can be away from political pressures." and “I would like to live in another country where I can feel safer". 46.1% (n=107) completely agreed to “I would like to work in another country where I would not worry about the future”, while 45.7% (n=107) completely agreed to "I would like to live in a country with more freedom of thought". 41.4% (n=96) agreed the statement “I believe that working abroad will make me happy.", while 40.9% (n=95) completely agreed to “If I were to do this job in another country, I would have a more enjoyable working life.", 40.1% (n=93) were undecided on the statement “Although I hear about negative experiences, I don't give up the idea of living abroad.”, 39.2% (n=91) agreed to “I believe that living abroad will make my life easier.", and 35.8% (n=83) agreed to “I'm not interested in news on living abroad". 34.9% (n=81) of the participants completely agreed to “Since I have enough opportunities to get a career in my country, it's not necessary for me to go abroad.”, 34.1% (n=79) were undecided on “I can endure the difficulties I may face in order to work abroad.", 32.8% (n=76) agreed to "I would like to work abroad as I can earn more money.” and 32.8% (n=76) were undecided on "I believe that every minute I spend in this country is wasted". It was found that 28% (n=65) of participants agreed with the statement “Job advertisements abroad attract my attention” and 28.4% (n=66) completely agreed with the statement “I research the living/working acceptance criteria of countries for foreigners.”

The mean and standard deviation values of the participants' opinions related to the scale were shown in Table 1. When Table 1 was examined, it was found that the overall score average of the scale was 3.72±0.900. Consequently, assistant physicians were found to have high level of attitude towards brain drain. The highest score was obtained from the statement “I believe that living abroad will make my life easier." (4.21±1.077). The answer "I believe that every minute I spend in this country is wasted." (2.98±1.184) was found to have the lowest value (Table 2).

Table 2. The evaluations of participants' attitudes towards health brain drain

	Mean	Standard Deviation
I believe that living abroad will make my life easier.	3.75	1.212
I would like to work abroad as I can earn more money.	3.69	1.247
Since I have enough opportunities to get a career in my country, it's not necessary for me to go abroad.	3.81	1.199
If I were to do this job in another country, I would have a more enjoyable working life.	3.97	1.158
I believe that every minute I spend in this country is wasted.	2.98	1.184
I believe that working abroad will make me happy.	3.69	1.055
I would like to work in another country where I would not worry about the future.	4.08	1.142
I believe that working abroad will improve my living standards.	4.21	1.077
I would like to live in another country where I can be away from political pressures.	4.03	1.246
Job advertisements abroad attract my attention.	3.53	1.220
I would like to live in a country with more freedom of thought.	4.08	1.137
I research the living/working admission criteria of countries for foreigners.	3.56	1.233
I would like to live in another country where I can feel safer.	4.03	1.204
I can endure the difficulties I may face in order to work abroad.	3.40	1.172
I'm not interested in news on living abroad.	3.84	1.104
Although I hear about negative experiences, I don't give up the idea of living abroad.	3.02	1.124
Attitude Scale towards Brain Drain	**3.72**	**0.900**

In order to determine whether there was a statistical difference in brain drain attitudes according to the socio-demographic characteristics of the participants, independent sample t-test and one-way analysis of variance (ANOVA) were conducted. As a result of the analyses, there was no significant difference in the participants' attitudes towards brain drain in terms of gender, marital

status, age, income, branch, duration of professional experience and working hours variables ($p>0.05$).

3. DISCUSSION AND CONCLUSION

The departure of skilled workforce leads to a decrease in the country's human capital, the rate of financial and social growth, and an increase in inequality and poverty. In addition, poorly managed migration of health professionals causes great damage to the health system. Therefore, the international migration of health professionals has become an important issue on health policy in recent years (Forcier et al., 2004).

As a result of the study, it was found that 67.7% of the assistant physicians wanted to emigrate to another country. It was seen that 56.5% were satisfied with the working environment, 60.8% were enjoying their job, and 30.2% wanted to leave their profession. 85.8% stated that brain drain in health could be prevented, while 99.1% considered the measures taken to prevent migration were insufficient in Turkey. In the study, assistant physicians mentioned ensuring appropriate working hours and conditions, and adopting effective and continuously functioning health policies as the first two practices that should be performed in order to prevent migration. The loss of branch and trained health professionals, poor and unqualified health service and difficulties in accessing health services were among the leading negative consequences of migration. Within the scope of the study, the occurrence of violent incidents in health institutions and adverse working conditions were among the factors affecting the health brain drain.

There were studies in the literature indicating different results. It was found that they migrated abroad to earn higher earnings, have better working conditions, and access educational opportunities and career opportunities (Clarke et al. 2017; Domagałaa and Dubas-Jakóbczk 2019). In addition, security issues and socio-economic and political factors were found to affect the migration of physicians (Astor et al., 2005; Lofters et al., 2013). Campbell (2007) found that despite experiencing numerous economic problems, physicians did not wish to leave their countries, concluding that this is due to their desire to serve their country (Campbell, 2007).

According to the other result of the research; socio-demographic characteristics of assistant physicians did not constitute a significant difference in brain drain attitudes. When the literature was examined; studies were reached stating that the brain drain rate was higher among male, single and young physicians (Pantenburg et al., 2018; Solberg et al., 2013). According to the results of

the study, various recommendations may be provided. Evidence-based policies can be employed to identify the causes, trends and effects of health workforce migration at the international and national levels. The attractive factors that cause the migration of health professionals can be increased, while reducing the repulsive factors. Therefore, it is recommended to improve the working conditions and working hours of health professionals (reducing the number of shifts, creating ergonomic working and rest rooms, etc.), reduce violent incidents, provide career opportunities, improve personal rights, regulate the place and duration of compulsory service, improve professional reputation, expand educational opportunities, and improve wages.

As a result, it is recommended to increase the pull factors that cause migration and to reduce the push factors in order to prevent the negative consequences of health brain drain. Since the study has been conducted in a single province and only in a university hospital, it constitutes certain limitations. Therefore, it is recommended for future researchers to conduct similar studies with a larger sample group.

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JHMT Editorial

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Island and Beach -based Model: A Nature-based Health Tourism Practice at tourism destination

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Abstract

The unique characteristics of islands and beach environments contribute to health tourism, focusing on elements such as clean air, tranquil settings, and natural beauty that promote relaxation and rejuvenation. It highlights the potential for these destinations to become hubs for health and wellness tourism, attracting visitors seeking holistic healing experiences. This research paper explores the Island and Beach-Based Model as an emerging paradigm in nature-based health tourism. With a focus on coastal and island destinations, this thematic analysis and conceptual model integrates the therapeutic benefits of nature with health and wellness practices, which investigates the diverse advantages of island and beach environments for physical, mental, and spiritual well-being, emphasizing the potential impact on tourism destinations. It will focus on the

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development of island-model that also addresses some different opposite aspects. By examining the attributes of coastal settings, contributes to the understanding of how Islands can be implemented as a holistic approach to health tourism.

Keywords: Nature-based health tourism, health, island and beach model, tourism.

INTRODUCTION

Health is something we must pay attention to every single day, because a healthy body is which helps us keep going and live a full life day after day and water based destinations are one of the destination that has been known since ancient times with multiple benefits to care one's holistic health (Hartig et al., 2014).

Islands are unique pieces of the continent, entirely surrounded by water. They are home to a significant portion of global biodiversity and natural resources due to their high species endemism, distinctive functional characteristics, and remarkable evolutionary processes like adaptive radiations and instances of repeated convergent evolution (G. Kier et al., 2009). Today, islands are seizing the opportunity to develop niche markets for nature-based health tourism by leveraging nature's priceless gifts: warm oceans, seas, natural beauty, ecosystems, people, mountains, and rivers (Pessot et al., 2021).

Islands often feature spontaneous and network-organized communities based on various tourism activities. This trend could be considered a new model for nature-based health tourism, emphasizing the planning and management of different tourism processes by fostering a sustainable link between hosts and visitors (Comparing & Tourism, 2022).

Tourism is a central activity for islands because it readily attracts external economies. Focusing on sustainability, growth, and development is particularly crucial for island tourism development. Therefore, new tourism models are needed to find an acceptable balance between tourist health, ecosystems, limited resources, and tourism economies, contributing to a country's economy from various angles.

Tourism has long been associated with improved health and relaxation, highlighted by the rise of spas, yoga, meditation, and rejuvenation centers. These activities create new centers of excellence by offering healthcare services in natural settings. The COVID-19 pandemic has also pushed markets to evaluate different tourism motivations, moving away from crowded destinations and focusing more on smaller places where contact with nature and local communities is possible

(Fernandes & Guiomar, 2018). Therefore, islands are considered suitable geographical locations where nature itself serves as a tourist attraction for a significant number of travellers and tourists (Ruggieri et al., 2022).

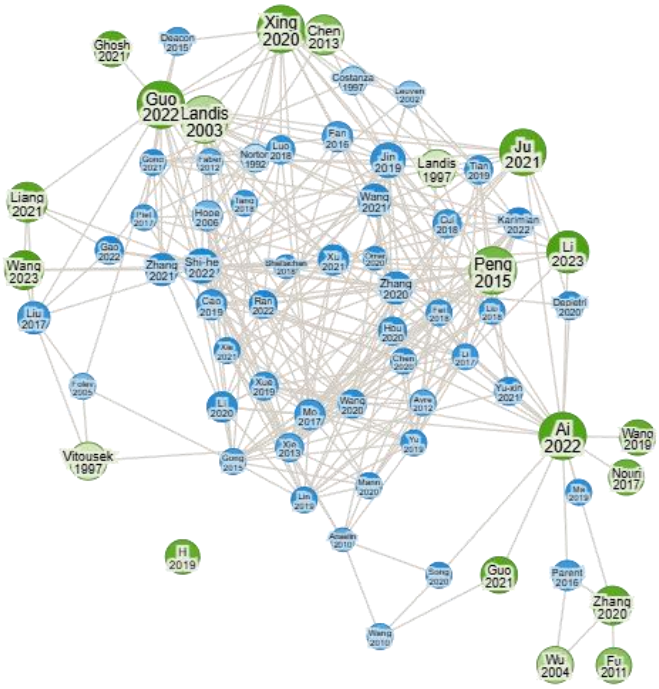
This paper examines the potential rise of nature-based health tourism in island areas and assesses its development potential for creating holistic health experiences for tourists. It also considers the social aspects of sustainability within nature-based health tourism models in natural areas.

Objectives of the study

- To present island and beach- based model (theoretical and creative) as nature- based health tourism practice at tourism destinations.
- To discuss about the various activities at islands and beach regions that will be helpful for nature-based health tourism.
- To study about various natural elements and resources of islands and beach that will boost nature-based health tourism.
- To discuss the about the factors present in island and beach regions that plays a vital role in enhancing tourists health.

Literature Review

Different comprehensive literature review has been done to recognise the need and significance of natural resource i.e. Islands, where tourists can avail natural well-being experience by immersing themselves with natural environment and it's beauty. A bibliometric analysis was done to highlight review of literature by different authors with similar work.



Few literatures has mentioned here:-

Rucong Mo, et al., (2023) this study takes the main island tourism attraction in Jiangmen, China as a case and analyses the tourist experience of island tourism through a text mining method based on the text reviews of tourist on Ctrip.

A Kusumaningram, et al., (2022) aimed to determine the suitability of oceanographic and ecosystem characters in tourism zones as parameters for suitability.

Hong, et al., (2021) in his study evaluated the landscape ecological risks based on LULC (land use/ land cover) and moreover, highlighted the values of ecological risks were discrepant in different time, the order of that being 1986.

H. AgungWahyu, et al., (2019) in this study a qualitative data triangulation has concluded that beach attraction in both locations can be divided into three models.

Jian Gong (2015) demonstrated in this study about the spatially explicit landscape ecological risks analysis combined with simulation driven scenario analysis for guiding the sustainable development of ecological vulnerable land systems.

D. Valeriani, et al., (2015) proposed the study to provide a concept of blue-based tourism management tourism through a descriptive study using primary data and resulted into a model of

tourism development which is able to provide quality of life, quality of opportunity and quality of experience.

Hualin Xe, et al., (2013) provided a result in his study regarding useful information for land eco-management, eco-environmental harnessing and restoration.

S.M.S. Canizares, et al., (2012) analyzed in their study about the tourism situation from demand point of view, in the island of Boavista in Cape Verde (Africa) which is in the phase of take off and development, where the main influx of tourists goes to major tourist resorts with all included packages.

Island and beach-based Model as a Nature- based Health Tourism Practice

Islands create a lasting memory of peace and well-being through it's beautiful specks of paradise. Such experience can be created through movements and to avail such clean and green therapies of islands, a theoretical, descriptive and creative model is created by researcher through comprehensive literature review. This model includes both natural and man-made components to create this model to provide good healthy and greeny experience to visitors.

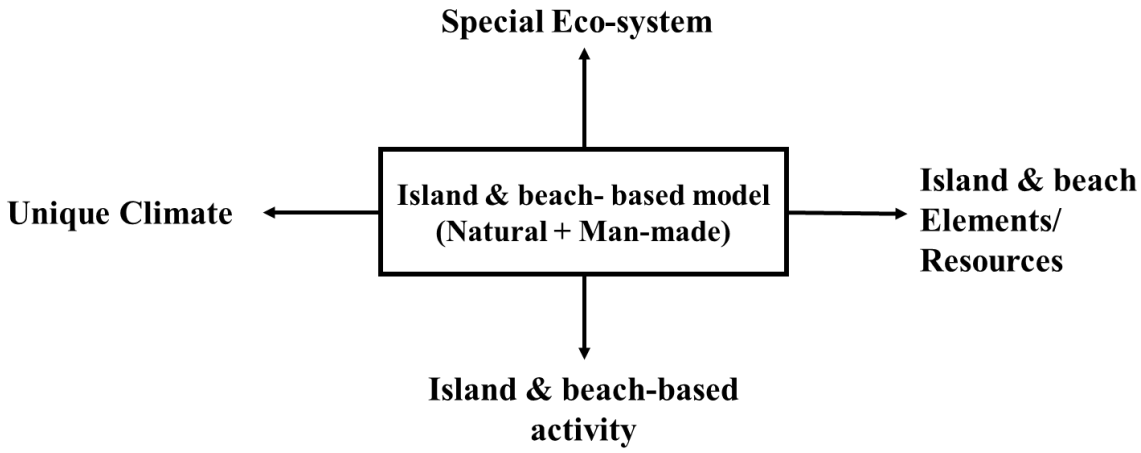


Figure 1. Island and beach-based Model – Natural + Man-made

Source: Own Elaboration

With a thorough study of existing literature, researcher encapsulated the figure 1. to focus on promoting relaxation, rejuvenation and over-all well-being, Islands provide an opportunity to escape from the stresses of everyday life and prioritise self-care. Therefore, this presented model incorporate various activities, eco-system, climate and resources that aims to improve physical, mental and emotional health. Islands are adorned with plethora of various flora and fauna which

regulates the eco-system of that area. Less populated and surrounded with water offers less polluted weather and climate to everyone. Island and beach-based model offers a healthy nature-based health tourism practice at tourism destination sites. Islands and beaches are places with many positive lifestyle aspects, such as clean and healthy environment, and less hassle and stress in life. These components capture individuals' maintenance of their health through various health domains such as physical, psychological and role function. Special ecosystem of island and beach areas allows tourists to explore and appreciate biodiversity, let tourists to experience coral reefs, tropical forests and wildlife and syncing the mind with nature and tuning it, finding more about self for a healthy living. Island and beach resources such as pristine beaches, clear water, sand, mud, minerals gives immense relaxation to tourists health benefits and gives unique nature experience. Such biodiversity and natural resources are an excellent components to maintain and balance climate of a particular region, and climate. Therefore, this creative and theoretical model elaborates the way to develop island and beach based model that provides beneficial health experiences to visitors, as well as supports and stimulates the region.

Island and beach-based Model in Nature-based Health Tourism setting

The island and beach based model in nature-based health tourism aims to provide a holistic experience that promotes relaxation, rejuvenation, and overall well-being. It leverages the therapeutic qualities of natural environments to create a unique and appealing destination for health-conscious travellers. Which can be a better destination to disconnect from routine that will give body a well deserved rest (*Benefits of the Canary Islands for Your Health*, n.d.).

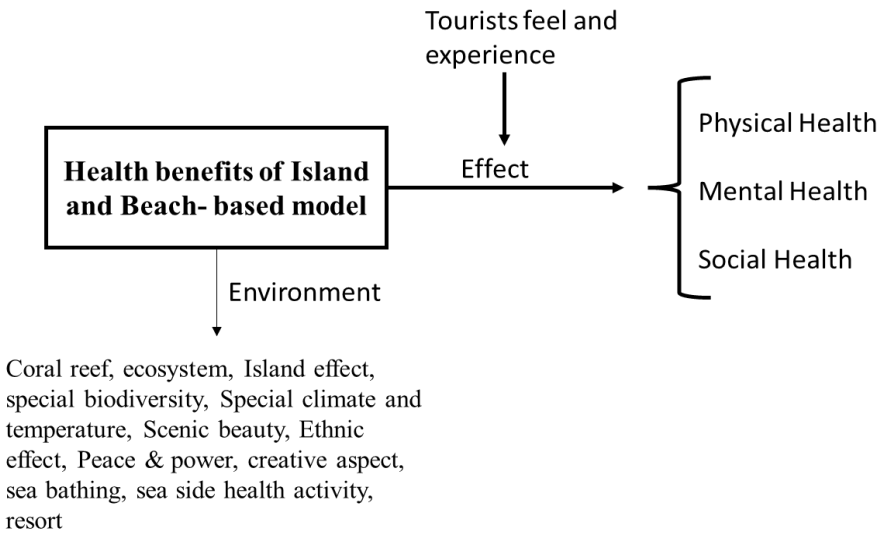


Figure 2. Health Benefits and Effect of Island and beach- based model

Source: Own Elaboration

One can enjoy the numerous benefits for their health with the help of such near by surroundings in the proposed setting of island and beach. As shown in above fig. 2 that explains about the ecosystem and their factors which gives an experiential and beneficial effects to their visitors health. Island offers different aquatic flora and fauna, warmth sun, air, suitable climate and temperature which provides ample space of nature for the visitors to enhance their health in a holistic manner. The tourists will feel and experience different health experiences with a profound positive impact on physical, mental and social health. As it involves interaction between local communities, social connection and promoting a sense of wellness. The island and beach based model as a nature-based health tourism practice gives benefits to people, society, environment and nation.

- **Conservation of special eco-system:** Island and beach model within natural areas helps to conserve and aware everyone to conserve the local flora and fauna of a particular region. Such model emphasizes eco-friendly practices to preserve the natural environment and biodiversity.
- **Preservation of Ethnic Culture:** Tourism activity involves the movement of both hosts and guests, that requires the involvement and exchange of culture and tradition. It is important to preserve the local ethnic culture by highlighting it's importance to present scenario. Interacting with the local culture, traditions, and communities on islands can provide tourists with a sense of purpose and connection, positively influencing mental and emotional health.

- **Local Community Economic Benefits:** Tourism has great importance and economic impact for people and areas near aquatic life. Tourism has the capacity to create employment, attract visitors from outside the area and keep local people spending money inside the area, generate opportunities in many areas where other economic activity may be limited, bring earnings and foreign exchange, provide infrastructure, create economic activity that does not threaten the local environment and provide recreational and social opportunities to the local community and tourists.
- **Sustainable Tourism Development:** Implement sustainable tourism practices to minimize the environmental impact of tourism activities. A healthy environment is crucial for preserving cultural landscapes and ecosystems. Nature-based healthy models creates awareness towards the nature and reflects it's importance from health point of view.
- **Cultural Communication:** Movement of people from one place to another always involves exchange of culture. Educate tourists about the importance of cultural preservation and encourage responsible behaviour. All tourism activities are conducted with a deep respect for the local ethnic culture. This involves understanding and honouring cultural norms, traditions, and values.
- **Social Goodwill:** Island and beach ecosystem offers numerous health benefits, responsible tourism practices are essential to ensure the preservation of these natural environments for future generations that enhances the social goodwill of a country.
- **Good Heartrate:** Due to its atmospheric pressure and biggest amount oxygen in the environment increases the level of oxygen in the blood.
- **A good source of Vitamin D:** Sunbathing with adequate protection, is essential for health. It is rich source to produce endorphins, responsible to create a sense of wellbeing and happiness.
- **Minerals in sea water:** Minerals like iodine present in sea water helps to relax muscles and also skin cell regeneration and wound healing.

Activities involved in Island and beach – based Model

Islands are in ecology, evolution, and environmental sciences (as well as many other fields) considered real-world model systems due to their small size, complex interactions of multiple factors (including broad abiotic gradients within islands), and manifold replication across all world regions and climate zones (Russell & Kueffer, 2019). Such replications allow tourists to

perform various activities in nature-based health setting such as (*Benefits of the Canary Islands for Your Health*, n.d.):

1. **Island Visit:** Visit to islands contribute to the effective implementation of nature-based health tourism at island and beach based areas. The place provides an opportunity to relax and rejuvenate. The unique natural features of these destinations promote health and well-being among tourists.
2. **Adventure Tourism:** Island and beach based models encourages outdoor activities that take advantage of the natural surroundings. This can include activities such as hiking, cycling, water sports, and yoga on the beach. These activities contribute to physical fitness and stress reduction.
3. **Health – base therapy:** Such place provides a good opportunity to practice health therapies like yoga, ayurveda, naturopathy and wellness activity that helps in caring one's physical and mental health. The model supports the development of spas and resorts with a focus on health and wellness. These establishments can provide a range of services health services.
4. **Bird Watching:** Bird watching is another way to relieve stress and attain peace by just simply sitting and feel the immense love of nature. Climatic conditions of islands and beaches allows different birds to fly over the sky.
5. **Special Biodiversity area visit:** A healthy environment is crucial for preserving cultural landscapes and ecosystems. Engaging with special biodiversity of particular areas supports fitness and healthy lifestyle.
6. **Leisure Health Activity:** Sun bathing, beach walk, sand walk etc. are some of the leisure health activities, which has been proved that the proximity to the sea helps us relax and forget about worries.
7. **Special Health Packages:** Different health packages based on natural resource models can be created for tourists to improve their health and wellness experience. It will ease tourists to avail benefits of healthy lifestyle through natural elements in different ways.

Application of Island and beach-based Models in Tourism Destinations

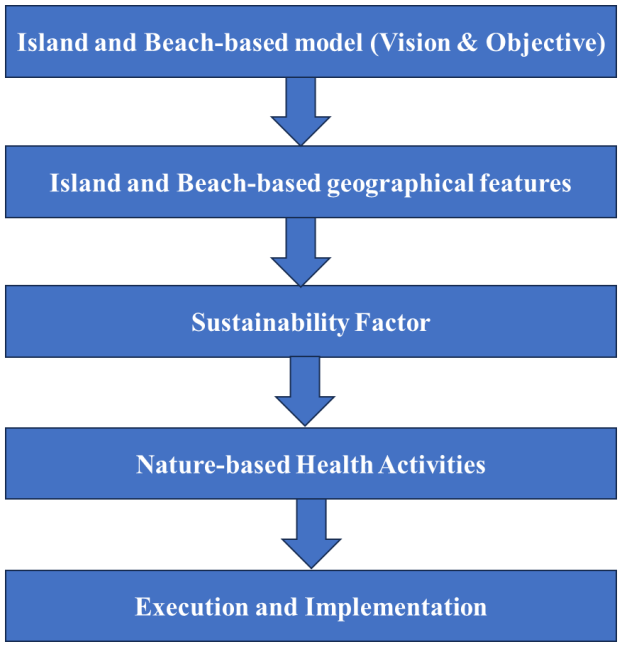


Figure 3. Steps to implement Island and beach-based model in Tourism Destination

Source: Own Elaboration

For industry experts and stakeholders, following are the steps to successfully implement nature-based health models at island and beach areas.

- **Island and beach-model (Vision & Objective):** The first step is to set an objective and vision of implementing nature- based health model at island and beach areas by defining its advantages, uses and it's environmental, social and economical impacts. This model helps in the development and growth of nature-based health tourism at different tourism destinations by promoting sustainability and using natural elements.
- **Island and beach-based geographical features:** Islands and beaches exhibit distinct geographical features that contribute to their unique charm and appeal. Such as landmass, coastlines, elevation, topography, coral origin, flora- fauna, lagoons etc. The combination of these island and beach geographical features creates diverse and picturesque landscapes, attracting tourists seeking natural beauty, recreational activities, and unique ecosystems. The geographical characteristics also play a crucial role in shaping the cultural, ecological, and economic aspects of island and beach destination.
- **Sustainability Factor:** It is based on nature, syncing the mind with nature and tuning it, and it should be designed to support nature-based interventions, by considering the essential

interdependence between human and nature. So, sustainable and responsible factors should be keep in mind where the host and guest will benefit both in terms of health, social, economical and environmental factors.

- **Nature-based Health Activities:** Host community has a role to play in enriching the visitor experiences and this synergy must be demonstrated by offering varied health activities that leads to state of holistic health. Whether it's bike riding in nature, strolling a beach or spending a day at spa etc. will leave lasting effect and memories in the minds of visitors with a feeling of rejuvenation and relaxation.
- **Execution and Implementation:** By combining all the factors, one can easily execute the process of gaining the benefits from nature instead of harming it. It can be a good start accommodating by responsible and more sustainable tourism.

1. RESEARCH METHODOLOGY

For this theoretical research paper, the researcher utilizes secondary sources such as literature reviews, books, magazines, and internet resources related to the island and beach-based model and nature-based health tourism. Additionally, the researcher draws connections between the wellness experiences offered by islands and beaches, tourists, and their destinations, incorporating personal insights. Through this personal think tank, the researcher has conceptualized and developed a model for island and beach-based nature health tourism. This model aims to guide and assist stakeholders in creating a market focused on visitors' health and well-being.

A comprehensive literature review was done for the presented research paper. The presented research paper is an original and conceptual research paper. In this paper, the self-elaborated figures has been created by the researchers after various types of creative thinking and reading research books.

For this process, the figures has been given a creative form based on logic and facts. The concept has been frame worked based on logic through simulation tools. In this way, the presented paper has showcased an idea under the research methodology so that we can better understand the system of Island and the Beach-Based Model. Ultimately, this research paper will showcase the conceptual, creative and research approach in making the model etc.

2. FINDINGS, POSSIBILITIES & RECOMMENDATION

The presented research paper provides an opportunity to both hosts and guests for attaining holistic wellness experience. India has an enormous untapped marine potential. The nation has 1382 offshore islands and islets, a 23 lakh sq. km. Exclusive Economic Zone (EEZ), and a 7516 km. coastline. Most of these islands are located in Lakshadweep and Andaman & Nicobar (*Developing Island Tourism in India*, 2019).

Table 1 : Percentage shares and growth of different States/UTs in Domestic & Foreign Tourist visits, during 2021 & 2022 (in lakhs)

S.No.	States/UTs	2021		2022		Growth Rate		% Share 2022	
		Domestic	Foreign	Domestic	Foreign	DTV 22/21	FTV 22/21	DTV	FTV
1.	Andaman & Nicobar Island	1.262	0.017	2.351	0.045	86.20	164.43	0.01	0.05
2.	Lakshadweep	0.135	0.000	0.228	0.001	69.21	3025.00	0.00	0.00
Total		1.397	0.017	2.579	0.046	155.41	3189.43	0.01	0.05

Source: States/ UTs Tourism Department (INDIA TOURISM STATISTICS 2022 Government of India Ministry of Tourism Market Research Division, n.d.)

This table 1 gives the percentage shares and ranks of both Indian islands visited by foreign and domestic tourists during the year 2021 & 2022. Currently, India welcomes around 10 million foreign visitors annually. According to the India Tourism Statistics Report, vacation, leisure, and recreation account for about 62% of all foreign visitor arrivals. It has been clearly states that, there is a growth of tourists arrivals to Union Territories. It is possible to market the Andaman & Nicobar and Lakshadweep islands to tourists from throughout the world as a new location for leisure travel and relaxation (*Developing Island Tourism in India*, 2019) by providing a new wellness experience to visitors. Lakshadweep and Andaman & Nicobar Island has the infrastructure to serve its residents and handful of tourists. Therefore, it offers a great source and opportunity to establish

such models within the lap of resources. The focus on the sustainable development of these islands will foster growth of tourism in these regions.

3. CONCLUSION

The research article highlighted island and beach-based model at tourism destinations to rethink, redevelop and restore tourism as a nature-based holistic health activity. Therefore, nature-based health tourism in island could follow a more integrated approach with ancient natural health practices, local communities, following relational hospitality based on people. The day is not far when India with such a large treasure of island territories will emerge as a leader in the area of island tourism.

Thus, this study is significant in both the tourism & environment perspectives by exploring innovative pathways that the tourism industry can pursue for stress – ridden people who are eager to have mind-healing experiences from their travel activities. Therefore, by developing such types of sustainable tourism practice at nature-based health tourism destination within well-preserved natural resources, tourist enjoyment can also be better maintained.

Conflict of Interest: The authors have no conflicts of interest to declare.
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Acceptance of Telerehabilitation Among Physiotherapists in Turkey and Factors Affecting Acceptance: A Cross-Sectional Analysis

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Abstract

Aim: This study aimed to assess the factors influencing the acceptance of telerehabilitation among physiotherapists in Istanbul.

Methods: A cross-sectional study was conducted among 170 PTs (F/M: 94/76, mean age:29.4 years) working in Istanbul. Data were collected through a questionnaire regarding scales of ‘‘Unified Theory of Acceptance and Use of Technology’’ (UTAUT) and ‘‘Perception of Innovation’’ (PoI). UTAUT has 5 components which are ‘‘Performance Expectancy’’ (PE), ‘‘Effort Expectancy’’ (EE), ‘‘Social Influence’’ (SI), ‘‘Facilitating Conditions’’ (FC), ‘‘Behavioral Intention’’ (BI). The model was modified by adding ‘‘Telerehabilitation Usage Behavior’’ (TUB) and ‘‘PoI’’ to these structures. After preliminary analyses, structural equation modelling was employed to assess relationships between key constructs and variables within the proposed model.

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Results: The modified UTAUT model demonstrated a good fit for understanding the acceptance of telerehabilitation among physiotherapists, as indicated by favorable goodness-of-fit indices (SRMR = 0.03, GFI = 0.99, AGFI = 0.92, CFI = 0.97, and RMSEA = 0.00). This model accounted for 68% of the variance in ‘‘BI’’ to use telerehabilitation and 28% of the variance in ‘‘TUB’’. The results revealed that ‘‘BI” directly influenced ‘‘TUB’’ (β = 0.53) and ‘‘SI’’ directly affected ‘‘BI’’ (β = 4.96). Additionally, the relationship between ‘‘SI’’ and ‘‘BI’’ was found to vary with age (β =-5.81, p <0.05) when examining moderator variables.

Conclusion: This study emphasized the need to bridge the intention-behavior gap and consider context-specific factors to develop strategies for integrating telerehabilitation into clinical practice.

Keywords: Telerehabilitation, technology acceptance, physiotherapist, UTAUT, innovation perception.

INTRODUCTION

Modern technology advancements are causing a quick evolution in healthcare services. Numerous digital health applications that seek to improve healthcare's accessibility, efficacy, and affordability are at the core of this revolution. Digital hospital concepts, mobile health, e-health, and telemedicine are some of the more notable uses among them. E-health services are the most comprehensive among digital health concepts that differ from each other conceptually. E-Health services include a broader range of digital health applications, such as health information systems, electronic health records, and online health services (Moro-Visconti R. 2021). On the other hand, mobile health is used to provide health behavior interventions and healthcare services through mobile devices such as smartphones and tablets. Mobile health applications are becoming increasingly common to monitor patients via mobile devices and increase patient self-management (Riley et al., 2011).

Digital hospitals, characterized by high-tech infrastructure and advanced communication networks, refer to the delivery of largely digitized healthcare services by establishing systems that increase patient safety, quality of care, cost effectiveness and patient-centeredness through technologies such as artificial intelligence and mobile data (Brand et al., 2023). Telemedicine, a subset of e-health, specifically refers to the use of communication networks to deliver health services and medical education in different geographical locations. This allows for remote diagnosis, treatment, and follow-up, significantly enhancing access to healthcare for patients who are geographically isolated or have mobility issues (Sood et al., 2007).

Transitioning from telemedicine to more specialized applications, we encounter the concept of telerehabilitation. While telemedicine provides a broad range of healthcare services, telerehabilitation focuses specifically on the delivery of physiotherapy services remotely. Tele-rehabilitation is defined as the delivery of physiotherapy services remotely using telecommunication technologies, which has emerged as a promising approach to healthcare. It offers numerous advantages, including increased access to care for patients in geographically remote areas, improved convenience for those with transportation difficulties and potential cost savings for healthcare systems (McCue et al., 2010). Acceptance of telerehabilitation by both patients and physiotherapists (PTs) is crucial for its successful integration into mainstream healthcare, as their endorsement and utilization are critical to its success (Alonazi, 2021; Tousignant et al., 2011). Considering patients' perspectives, existing literature suggests a positive trend towards accepting telerehabilitation (Niknejad et al., 2021). Patients who have experienced it acknowledge its convenience and effectiveness, often highlighting the benefits of reduced travel time and the comfort of receiving therapy from home (Niknejad et al., 2021; Tyagi et al., 2018). However, studies focusing on PT's acceptance of telerehabilitation are limited. These are concentrated around telerehabilitation effectiveness, awareness, expectations, satisfaction and attitudes for physiotherapists (Albahrouh & Buabbas, 2021; Başer Seçer & Çeliker Tosun, 2022; Morri et al., 2024; Saaei & Klappa, 2021; Seron et al., 2021; Vellata et al., 2021). Additionally, existing studies extensively discuss PT's acceptance of telerehabilitation in relation to the Covid - 19 pandemic process and focus on telerehabilitation practices specific to stroke, Parkinson's or chronic diseases (Barry Walsh et al., 2024; Bezuidenhout et al., 2022; D'Souza & Rebello, 2021; Stephenson et al., 2022; Vellata et al., 2021).

The integration of telerehabilitation into standard practice not only expands service delivery models but also offers substantial advantages in terms of convenience, cost-efficiency, and patient engagement. Yet, despite these benefits, the rate of adoption and acceptance by PTs remains an essential factor influencing its widespread implementation (Suso-Martí et al., 2021). So, there is a critical need to understand the factors that facilitate or hinder PT's acceptance of telerehabilitation (Buabbas et al., 2022). Since PT's acceptance plays a key role in the successful implementation of telerehabilitation services, identifying and analyzing these factors is crucial for the evolution of rehabilitation services and healthcare delivery models (Alrushud et al., 2022; Buabbas et al., 2022). Our study is the first to investigate the factors affecting technology

acceptance of physiotherapists in the Turkish population. It also modifies the ‘‘Unified Theory of Acceptance and Use of Technology’’(UTAUT) model while investigating the factors affecting physiotherapists' acceptance of telerehabilitation within the UTAUT framework. It examines the factors in this modified acceptance model and the relationships between these factors.

Aiming to contribute to the literature on technology acceptance within the healthcare field, this research advocates for the utilization of a well-established theoretical framework to comprehensively evaluate the multifaceted factors influencing healthcare professionals' acceptance (Venkatesh & Davis, 2000; Venkatesh et al., 2003).

UTAUT has emerged as a reliable and well-validated model within healthcare research for such investigations (Williams et al., 2015). UTAUT posits that ‘‘Behavioral Intention’’ (BI) to use a technology, ultimately leading to its actual use, is influenced by four key constructs: ‘‘Performance Expectancy’’ (PE), ‘‘Effort Expectancy’’ (EE), ‘‘Social Influence’’ (SI), and ‘‘Facilitating Conditions’’ (FC). Additionally, factors like age, gender, experience, and voluntariness of use can moderate these primary constructs (Venkatesh & Davis, 2000; Venkatesh et al., 2003; Williams et al., 2015). By incorporating these additional elements into UTAUT structures, it is possible to investigate a broader range of factors affecting telerehabilitation acceptance and use. This study aims provides a richer interpretation of PTs' acceptance of telerehabilitation by taking into account the influence of all actors (such as colleagues, institutions, technological environment, social environment) with whom they interact in the provision of health services (Rahimi et al., 2018).

The current UTAUT model may overlook certain significant impacts on PT’s adoption of telerehabilitation. To address this, we will consider two additional factors. These factors are ‘‘Perception of Innovation’’ (PoI) and ‘‘Telerehabilitation Usage Behavior’’ (TUB). ‘‘Perception of Innovation’’ tells us how physiotherapists view telerehabilitation in terms of its newness and usefulness. ‘‘Telerehabilitation Usage Behavior’’, on the other hand, focuses on PT’s past experiences and current habits of using this technology (AlQudah et al., 2021; Rahimi et al., 2018). Through this tailored framework, the study’s goal is to offer a nuanced understanding that could inform strategies for the broader integration of telerehabilitation within the physiotherapy domain. Exploring PT’s acceptance of telerehabilitation affects strategies for patients receiving remote physiotherapy and telerehabilitation services to receive more effective and efficient service. It enables physiotherapists to understand the resistances of telerehabilitation. This makes it easier to

identify institutional actions aimed at breaking down resistances. It enables more effective planning of resource allocations for investments in the field of telerehabilitation. It facilitates the successful integration of the design of "better patient outcomes and a more efficient health system", which is the main purpose of remote health services, in the field of physiotherapy and rehabilitation. By understanding and addressing the particular concerns and expectations of PTs, greater acceptance can be encouraged, thereby enhancing the quality of patient care and strengthening the role of telehealth within rehabilitative sciences. This study aimed to investigate the factors influencing the acceptance and utilization of telerehabilitation for rehabilitation services among PTs at public hospitals in Istanbul.

1. RESEARCH METHODOLOGY

Study Design and Setting: In this cross-sectional study, data were collected from 13 public hospitals in Istanbul, to assess the acceptance of telerehabilitation by physical therapists and determine the influence of ‘‘Behavioral Intention’’, ‘‘Innovation Perception’’, ‘‘Age, ‘‘Gender’’, and ‘‘Professional Experience’’ on this acceptance.

Participants: The research population consisted of public hospitals located in Istanbul. The research sample was determined through convenience sampling from Istanbul Public Hospitals Administration 2.

13 hospitals with physical therapy units, affiliated with the Istanbul Public Hospitals Administration 2., were included in the study. Following obtaining permission from the Istanbul Provincial Health Directorate, introductory emails explaining the purpose of the study and containing a Google Forms link to the survey were sent to the administrators of the selected hospitals, who then forwarded it to the PTs working in their clinics. Participants were able to access the electronic survey by clicking on the link. The survey was conducted between March 2023 and May 2024. A total of 170 completed questionnaires were received from the 190 distributed, yielding a response rate of 89,47%.

The study was performed according to the principles of the Declaration of Helsinki and was approved by the Ethical Committee of Marmara University Institute of Health Science (23.05.2022-66).

Variables: The questionnaire consisted of three sections: The UTAUT questionnaire, the

Innovation Perception Scale, and questions obtaining to sociodemographic characteristics such as age, gender, number of working years, education levels.

The UTAUT is a well-established questionnaire for the assessment of technological acceptance and usage, known for its strong internal consistency and construct reliability, and proven convergent and discriminant validity. This questionnaire has been used within the Turkish demographic in prior research, presenting psychometric elements such as ‘‘Performance Expectancy’’, ‘‘Effort Expectancy’’, ‘‘Social Influence’’, ‘‘Facilitating Conditions’’, ‘‘Behavioral Intention’’, and ‘‘Technology Usage Behavior’’ (Venkatesh & Davis, 2000; Venkatesh et al., 2003). The UTAUT questionnaire includes a total of 19 items: 1-3 as part of ‘‘Performance Expectancy’’, 4-7 as part of ‘‘Effort Expectancy’’, 8-10 as part of ‘‘Social Influence’’, 11-14 as part of ‘‘Facilitating Conditions’’, and 15-17 as part of ‘‘Behavioral Intention’’. Responses to these items are scored on a five-point scale, from 'strongly disagree' (1) to 'strongly agree' (5). Additionally, the questionnaire utilized the innovation perception scale to assess PTs attitudes towards innovation (Karaçelik et al.). With 19 items also scored on a five-point scale, higher scores indicate a greater ‘‘Perception of Innovation’’.

Theoretical Framework: The present cross-sectional study operationalized the UTAUT as the conceptual framework underpinning the inquiry into the determinants of PTs’ ‘‘Behavioral Intentions’’ and ‘‘Technology Usage Behavior’’ in the field of telerehabilitation technology. The UTAUT model consist of our other four key theoretical constructs as pivotal in shaping an individual’s engagement with new technology ‘‘Performance Expectancy’’, ‘‘Effort Expectancy’’, ‘‘Social Influence’’, and ‘‘Facilitating Conditions’’ (Venkatesh & Davis, 2000; Venkatesh et al., 2003).

This study assessed ‘‘Performance Expectancy’’ to measure PT’s beliefs regarding the potential benefits and job performance improvements associated with telerehabilitation in their practice. Additionally, ‘‘Effort Expectancy’’ was included to evaluate the perceived ease or complexity of telerehabilitation systems from the PTs’ standpoint in a clinical context. ‘‘Social Influence’’ was included to assess the degree to which PT’s feel that their professional circle or organizational hierarchy values the acceptance of telerehabilitation technologies. Finally, ‘‘Facilitating Conditions’’ was included to elucidate the perceived availability and adequacy of infrastructural support for telerehabilitation. In this study, the UTAUT model was extended by incorporating a construct for innovation perception. This construct aimed to capture the inclination

of physiotherapists toward telerehabilitation and the degree to which this inclination influences both their behavioral intentions and usage behavior concerning telerehabilitation. Additionally, demographic variables, for age, gender, and duration of professional experience were included as exogenous variables to estimate their potential moderating effects on the primary UTAUT constructs. The integration of these demographic factors, along with innovation perception, as shown in Figure 1, into the UTAUT model, aims to propose an updated model of technology acceptance telerehabilitation practice.

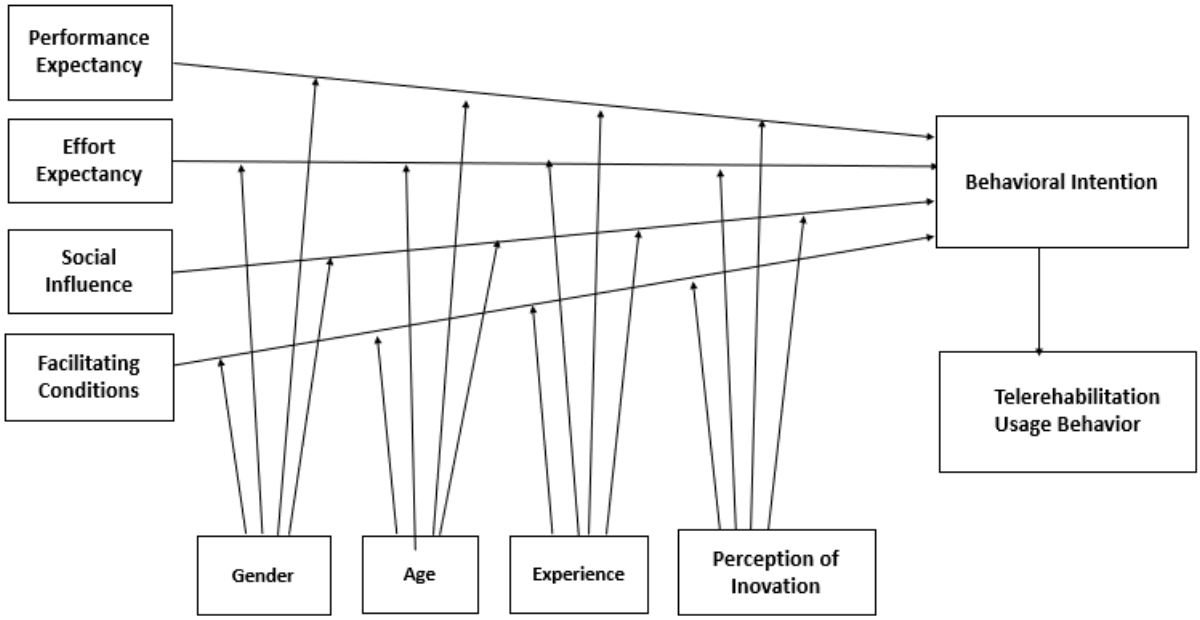

Figure 1: Modified UTAUT Model

2. ANALYSIS

This cross-sectional study was described using descriptive statistics were used the present the demographic profile of the participants. Structural equation modeling (SEM) was used to evaluate the alignment of the collected data with the UTAUT theoretical framework. SEM was particularly selected as it facilitates the concurrent examination of structural relationships (associations between observed variables) and measurement models (relationships involving latent constructs), thereby offering a comprehensive assessment of complex theoretical models (Avkiran, 2018). To evaluate the measurement model's reliability, we computed Cronbach's Alpha for the questionnaire sections to determine their internal consistency. The normality of the data distribution for each

questionnaire item was assessed via their skewness and kurtosis values, subsequent to which a confirmatory factor analysis was conducted.

Data were analyzed using Jamovi version 2.5 (The Jamovi Project, Sydney, Australia), a user-friendly, an open-source software statistical package. A series of fit indices, the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR) were selected to determine the model's goodness of fit. Acceptable model fit was inferred from CFI values of 0.95 or greater, RMSEA values below 0.08, and SRMR values under 0.10 (Avkiran, 2018; Ding et al., 1995; Smith & McMillan, 2001). The numerical values for the model fit indices are consolidated in Table 3. Once the fitness of the SEM model was confirmed, a detailed examination followed. This included an exploration of the interactions between the exogenous variables and ‘‘Behavioral Intention’’ as well as ‘‘Telerehabilitation Usage Behavior’’, the exploration of non-linear relationships, an analysis of the covariance structures among the endogenous variables, and an assessment of the latent variables' direct and indirect impacts on ‘‘Behavioral Intention’’ and ‘‘Telerehabilitation Usage Behavior’’.

Results of Analysis: A total of 170 PTs (F/M:94/76, age mean: 29,4 ± 5,8, years of practice: 9,5 ± 3,9) participated in the study, as their sociodemographic distributions are summarized in Table 1. The average age of participants was 29,4 years (±5,8), with females comprising 55,3% of the study population. A majority of the participants, 70.6%, practiced in general physiotherapy clinics. The average professional experience among the PTs was 9,5± (3,9) years. Additionally, a significant portion of the participants (82,4%), possessed an undergraduate educational level (Table 1). The preliminary analysis of correlations among variables in our path model revealed that while gender (r=0.068) and age (r=0.072) showed minimal direct influence on “Telerehabilitation Usage Behaviors”, experience (r=0.082) and “Perception of Innovation” (r=0.323) demonstrated modest correlations with usage behavior and perceptions of technology (Table 2). Age strongly correlated with experience (r=0.877), suggesting an intertwined relationship impacting other variables. Including moderating variables such as gender, age, experience, and “Perception of Innovation” is justified as they provide insights into how personal characteristics and professional background influence the adoption and utilization of telerehabilitation, underlined by their respective influences on the primary variables in the model.

Table 2. Sociodemographic Characteristics of Participants

Sociodemographic Variables	
Age, mean ± SD	29,4 ± 5.8
Years of practice, mean ± SD	9,5 ± 3,9
Gender, n (%)	
Female	94 (55,3)
Male	76 (44,7)
Education, n (%)	
Undergraduate	140 (82,4)
Master	25 (14,7)
PhD	5 (2,9)
Clinics (%)	
General rehabilitation	120 (70,6)
Orthopedic rehabilitation	32 (18,8)
Cardiopulmonary rehabilitation	10 (5,9)
Neurological rehabilitation	8 (4,7)
Total	170

Table 3: Correlation Coefficient Between Variables Under the Model

		PE*	**SE***	**FC***	**BI***	**TUB***	**Gender**	**Age**	**Exp.***	**PoI***
Performance Expectancy	**r**	,623**	,534**	,421**	,625**	,424**	-,025	-,012	,025	,206**
	p	,000	,000	,000	,000	,000	,752	,877	,761	,007
Effort Expectancy	**r**		,527**	,516**	,534**	,402**	-,019	-,065	-,027	,295**
	p		,000	,000	,000	,000	,811	,406	,740	,000
Social Influence	**r**			,675**	,648**	,451**	,032	-,083	-,066	,214**
	p			,000	,000	,000	,681	,285	,411	,005
Facilitating Conditions	**r**				,585**	,423**	-,103	-,165*	-,110	,163*
	p				,000	,000	,188	,034	,174	,036
Behavioral Intention	**r**					,534**	-,049	,007	,043	,302**
	p					,000	,532	,924	,595	,000
Telerehabilitation Usage Behavior	**r**						-,057	,072	,082	,323**
	p						,460	,348	,306	,000

Gender	**r**							,010	,014	,068
	p							,894	,864	,379
Age	**r**								,877**	-,024
	p								,000	,756
Experience	**r**									,061
	p									,443

**PE: Performance Expectancy *EF: Effort Expectancy *FC: Facilitating Conditions *BI: Behavioral Intention*

** TUB: Telerehabilitation Usage Behavior *Exp: Experience *PoI: Perception of Innovation*

Model Fit: Our model was reliable in terms of fit indices, and our model had acceptable fit values for SRMR (=0,03), GFI (=0,99), AGFI (=0,92), CFI (=0,97) and RMSEA (=0,08). In SEM analysis, fit index values range from 0 to 1 with 0 indicating the worst degree of fit, and 1 indicating the perfect fit (Ding et al., 1995). So, there was no value in the model test analysis that would prevent model fit. Model fit results are presented in Table 3.

Table 3: Model Fit Values

Model Fit Criteria	Value	Good fit	Acceptable fit
SRMR	0,03	0≤ SRMR ≤0,05	0,05≤ SRMR ≤0,10
GFI	0,99	0,95≤ GFI ≤1,00	0,90≤ GFI <0,95
AGFI	0,92	0,90≤ AGFI ≤1,00	0,85≤ AGFI <0,90
CFI	0,97	0,97≤ CFI ≤1,00	0,95≤ CFI <0,97
RMSEA	0,08	0≤ RMSEA ≤0,05	0,05≤ RMSEA ≤0,08

SRMR: Standardized Root Mean Square Residual, GFI: Goodness of Fit, AGFI: The (Adjusted) Goodness of Fit, CFI: Comparative Fit Index, RMSEA: Root Mean Square Error of Approximation

Direct and Indirect Effects: The independent variables of the UTAUT that we modified and used for this study were ‘‘Performance Expectation’’, ‘‘Effort Expectation’’, ‘‘Social İmpact’’, ‘‘Facilitating Conditions’’ and ‘‘Innovation Perception’’. The independent variables were ‘‘Behavioral Intention’’ and ‘‘Telerehabilitation Usage Behavior’’. We tested our hypothesized model against the data, which assumes that ‘‘Performance Expectancy’’, ‘‘Effort Expectancy’’, ‘‘Social Influence’’ and ‘‘Facilitating Conditions’’ had direct effects on ‘‘Behavioral Intention’’ and indirect effects on ‘‘Telerehabilitation Usage Behavior’’ through ‘‘Behavioral Intention’’. We

analyzed how the direct and indirect relationships among the mentioned variables were moderated by gender, age, experience, and ‘‘Perception of Innovation’’ variables. After completing the model fit test, direct and indirect effects were analyzed to estimate the relationships between the variables. Figure 2 presents the direct and indirect effects tested in the model.

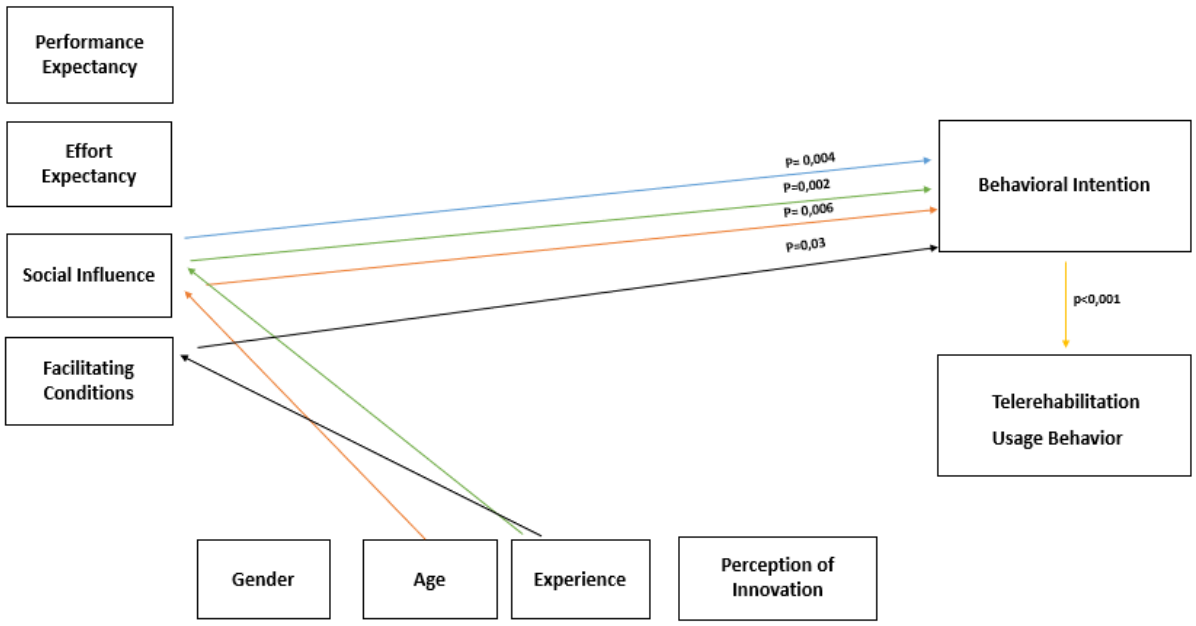

Figure 2: Final Path Analysis Results for the Direct and Indirect Relationships in the Modified UTAUT Model

Blue pathway: β:4,96 (0,004); Yellow pathway: β:0,53 (p<0,001); Orange pathway: β: -5,81 (0,006) Green pathway: β:4,42 (0,002); Black pathway: β: -3,03 (0,03)

Only significant pathways in model with p<0,05 are presented.

For the hypotheses tested in the model, only two **direct** effects were found to be statistically significant (p<0,005). These pathways are the direct effect of ‘‘Behavioural Intention’’ on ‘‘Telerehabilitation Usage Behaviour’’ (β = 0,53) and the direct effect of ‘‘Social Influence’’ on ‘‘Behavioural Intention’’ (β = 4,96). When the **indirect** effects were examined, the effect of ‘‘Social Influence’’ on ‘‘Telerehabilitation Usage Behaviour’’ through ‘‘Behavioural Intention’’ was found to be statistically significant (β=2,64, p<0,05), (Figure 2; See Supplementary Table I).

Analysis of Moderator Relationships: The results on how the direct and indirect relationships between the variables are moderated by the variables of gender, age, experience, and ‘‘Perception of Innovations’’ are presented in the Table 4 and Table 5. As for the direct relationships, the

examination of moderator variables revealed that the influence of age significantly alters the relationship between ‘‘Social Influence’’ and ‘‘Behavioral Intention’’ (β =-5.81, p <0.05). This suggests that as age increases, the impact of ‘‘Social Influence’’ on ‘‘Behavioral Intentions’’ progressively decreases. In addition, experience, which is measured by the length of time working in the profession, appeared to be important among the moderator variables. Experience moderated the effect on ‘‘Behavioural Intention’’ in terms of both ‘‘Social Influence’’ (β = 4,42, p<0,005) and ‘‘Facilitating Conditions’’ (β = -3,03, p<0,05). This indicates that greater experience enhances the effect of ‘‘Social Influence’’ on ‘‘Behavioral Intentions’’, while simultaneously reducing the impact of ‘‘Facilitating Conditions’’. We did not find a statistically significant effect of any other moderator variable on the **direct** relationships (Figure 3; See Supplementary Table II).

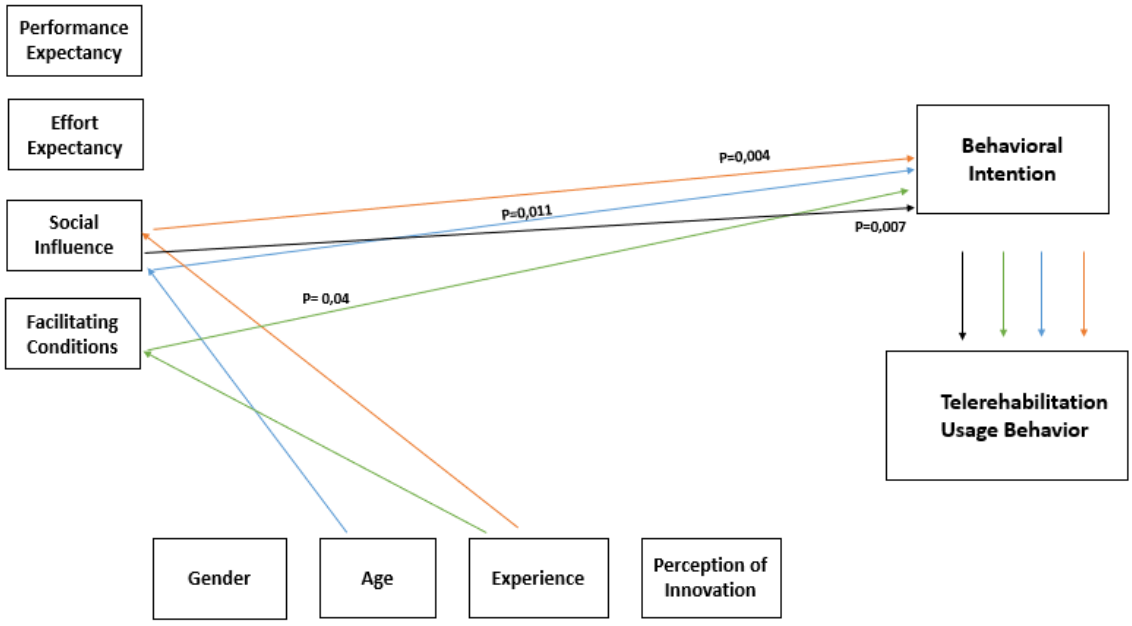

Figure 3: Path Analysis Results for Behavioral Intention as Moderating Variable in the Modified UTAUT model

Black pathway: β:2,64 (p:0,007); Blue pathway: β: -3,10 (p:0,011); Red pathway: β:2,35 (0,004); Green pathway: β: -1,61 (0,04) Only significant pathways in model with p<0,05 are presented.

We also analyzed the effects of moderator variables on **indirect** relationships. Age moderated the indirect effect of ‘‘Social Influence’’ on ‘‘Telerehabilitation Usage Behavior’’ through ‘‘Behavioral Intention’’ (β = -3,10, p<0,05). Similarly, to direct relationships, we found statistically significant results for experience. The indirect effect of both ‘‘Social Influence’’ (β = 2,35, p<0,005) and ‘‘Facilitating Conditions’’ (β = -1,61, p<0,05) on ‘‘Telerehabilitation Usage

Behavior'' through ''Behavioral Intention'' varied depending on professional experience (Figure 3). We did not find a statistically significant effect of any other moderator variable on the indirect relationships (See Supplementary Table III). According to the modified UTAUT framework, the Structural Equation Model depicting the acceptance of telerehabilitation is illustrated in Figure 2. "Behavioral Intention" explanatoryness was found to be R^2=0.68, while "Technology Usage Behavior" explanatoryness was found to be R^2=0.28.

3. DISCUSSION/CONCLUSION AND RECOMMENDDATIONS

This study investigated factors influencing PTs' acceptance of telerehabilitation. Specifically, it explored how these factors contribute to behavioral intention to use telerehabilitation, employing the modified UTAUT model with SEM analysis.

Our model shows good fit based on acceptable values for SRMR, GFI, AGFI, CFI, and RMSEA. This suggests the model effectively captures the underlying relationships in the data. The findings suggest that "Social Influence" and "Facilitating Conditions" indirectly influence "Telerehabilitation Usage Behavior" through "Behavioral Intention". This indirect effect, however, is contingent upon both the PT's age and experience.

The study revealed that two notable direct correlations: firstly, the PTs' intent predicted their actual use of telerehabilitation, and secondly, the extent to which their community influences them correlated with this intent. Furthermore, a significant indirect effect was identified, with "Social Influence" affecting "Telerehabilitation Usage Behavior" through "Behavioral Intention". In evaluating the acceptance of telerehabilitation among PTs, current literature has predominantly focused on "Behavioral Intention" as a principal outcome indicator (Cranen et al., 2012; Whitten et al., 2010). However, we opted for a more comprehensive assessment approach by integrating both "Behavioral Intention" and actual "Telerehabilitation Usage Behavior" into our model of telerehabilitation acceptance.

In our model, "Behavioral Intention" explanatoryness was found to be R^2=0.68, while "Telerehabilitation Usage Behavior" explanatoryness was found to be R^2=0.28. This suggests that factors beyond intention, potentially including access, technical fluency, and perceived usefulness, also influence PTs' ultimate acceptance of telerehabilitation. These results highlight the importance of employing a comprehensive approach to assess telerehabilitation acceptance. While

"Behavioral Intention" serves as a strong predictor, it is essential to consider actual "Telerehabilitation Usage Behavior" to gain a more complete understanding of PTs' engagement with this technology (Turner et al., 2010). This dual criterion not only enriches the understanding of the predisposition towards usage but also encapsulates the translation of that intention into tangible engagement with telerehabilitation services. The correlation between the PTs' intentions and their usage behaviors is crucial for a rounded interpretation of acceptance, reflecting the gap or congruence between what practitioner's plan to do and what they actually do in practice. By deploying the UTAUT model in our study, we capitalize on its ability to account for multiple determinants that influence users' acceptance and usage, providing a model and a nuanced arc of understanding regarding telerehabilitation acceptance amongst PTs. This model's comprehensive nature allows for a more accurate estimation of acceptance, capturing not only the antecedents of intention but also the conversion of that intention into actual use, which is particularly relate in the context of PTs adopting telerehabilitation paradigms. Furthermore, our study explored the moderating effects of "Perception of Innovation", experience, "Facilitating Conditions", and "Social Influence" on the relationships between the core constructs. While the moderating effect of "Perception of Innovation" was not statistically significant with the significant moderating effects of experience, "Facilitating Conditions", and "Social Influence" warrant further discussion. This finding aligns with other studies that have reported mixed results on the influence of demographic factors on technology acceptance. For instance, in their comprehensive UTAUT model, suggest that while age can affect technology use, its impact can be minimal in contexts where the technology is perceived as highly innovative or where usage is deemed essential regardless of age (Venkatesh & Davis, 2000; Venkatesh et al., 2003). This suggests that the perceived novelty or utility of innovations like telerehabilitation may override traditional age-related differences in technology adoption. Further research might explore whether these results hold in differing cultural or clinical settings, or whether shifts in technological landscapes could alter these dynamics.

The experience effect suggests that PTs with more telerehabilitation experience demonstrate a stronger link between "Behavioral Intention" and "Telerehabilitation Usage Behavior" (Cottrell et al., 2017; Theodoros et al., 2008). This aligns with established theories like the Theory of Planned Behavior, which posits that past behavior influences "Behavioral Intention" and "Facilitating Conditions" (Godin & Kok, 1996). This indicates that the environment can

influence how intention translates into action, suggesting the importance of providing PTs with the necessary resources to effectively utilize telerehabilitation tools. Future research could explore the specific factors that bridge the intention-behavior gap in the context of telerehabilitation acceptance among PTs. This exploration could involve qualitative studies to delve deeper into PTs' experiences and the facilitators or barriers they encounter when using telerehabilitation tools.

In the present study, which employed the modified UTAUT model, it was demonstrated that "Social Influence" impacts "Behavioral Intention", and in turn, "Behavioral Intention" acts as a mediator in determining the "Telerehabilitation Usage Behavior" of PTs toward telerehabilitation. A possible interpretation of these nuanced dynamics is the voluntary basis of the PTs' participation. Studies indicates that in situations where participation is voluntary, the impact of "Social Influence" tends to fade (Godin et al., 2008). In contrast, when technology adoption is compulsory, social effect exerted by colleagues or networks gain a heightened significance (Lu et al., 2005). It is crucial to consider that "Social Influence" can manifest and operate through three separate pathways: compliance, where behavior is shaped by external pressures; internalization, where actions are guided by the integration of beliefs and values; and identification, where individuals adopt behaviors to align with the norms of a specific social group (Venkatesh & Davis, 2000). In inquiries into the role of "Social Influence" on the "Behavioral Intention", to use technology, it's noted that "Social Influence" may not significantly impact professionals' populations such as physicians, given their inherent professional independence (Duyck et al., 2010). Similarly, a study with Canadian PTs revealed a small effect of "Social Influence" on "Behavioral Intention", which stands in contrast to our study (Liu et al., 2015; Schaper & Pervan, 2007). This variation could be explained by the degree of autonomy within the practice environments; PTs Canada probably operate more autonomously than those in Turkey.

According to the UTAUT model, "Facilitating Conditions" were identified not only as a direct determinant of "Behavioral Intention" to utilize telerehabilitation but also indirectly influence "Telerehabilitation Usage Behavior" through the mediating role of "Behavioral Intention". This mediation implies that while facilitating conditions directly affect the intention, their impact on usage behavior is realized through the intention to use telerehabilitation. Additionally, the moderating factors like organizational and technical support enhance or alter the effect of "Facilitating Conditions" on "Behavioral Intentions". The more robust these supports, the higher the acceptance rate among PTs. Indeed, this complex interplay illustrates that "Facilitating

Conditions" predominantly influence PTs' employment of telerehabilitation in rehabilitation. Multiple studies, including those by Aggelidis & Chatzoglou (2009) and Zhou (2012), have demonstrated a positive association between "Facilitating Conditions" and "Behavioral Intention" across various technologies among healthcare professionals, thus underscoring the critical role of moderators in shaping these relationships.

In our study, in which the Unified Theory of Technology Acceptance and Use (UTAUT) was used, UTAUT was compared to other models such as Technology Acceptance Model (TAM and TAM2), Unified TAM and Theory of Planned Behavior (C-TAM-TPB), Innovation Diffusion Theory (IDT), Social Cognitive Theory showed superior predictive power. (SCT) and Motivation Model (MM), but its application in telerehabilitation, a subset of rehabilitation, has not been widely studied. The primary contribution of our study is to demonstrate how UTAUT can be effectively applied to telerehabilitation admission in a hospital specializing in rehabilitation. Additionally, our research builds on existing theoretical work on telerehabilitation for physiotherapy by detailing the key factors that influence both the purpose and actual adoption of telerehabilitation practices. This study investigated the factors influencing PTs' acceptance of telerehabilitation. We employed the Unified Theory of Acceptance and Use of Technology (UTAUT) model and found that "Social Influence and "Facilitating Conditions" indirectly influence "Telerehabilitation Usage Behavior" through "Behavioral Intention". It was found that 68% of "Behavioral Intention" to use telerehabilitation and 28% of "Telerehabilitation Usage Behavior" are explained by our modified UTAUT model. The importance of both intention and actual usage for a comprehensive understanding of telerehabilitation acceptance is also highlighted by this study. This study contributes to the field in several ways. First, it demonstrates the effectiveness of UTAUT in predicting telerehabilitation acceptance among PTs Second, it identifies key factors influencing both intention and actual usage. Finally, it explores the moderating effects of experience and "Facilitating Conditions", providing valuable insights for promoting telerehabilitation acceptance.

This study has several limitations. First, unlike the original UTAUT study which tracked participants over time (Venkatesh et al., 2003), our research captured PTs' perceptions, intentions, and current use of telerehabilitation at a single point (cross-sectional design). Given that only limited number of studies have applied UTAUT to technology acceptance, it is necessary from the perspective of validating and extending the model's applicability over time, that future longitudinal studies are conducted to compare our findings with those of Venkatesh's seminal work (Mącznik

et al., 2015) Further studies using UTAUT are recommended to explore its limitations, validity, and applicability in the context of telerehabilitation adoption. The other limitation of this study lies in the omission of the specific telerehabilitation technologies employed. The study shows telerehabilitation as a monolithic concept, neglecting the possibility that the type of technology (e.g., video conferencing, virtual reality applications) may significantly influence both usage patterns and behavioral responses. Future research efforts in this domain would benefit from a more nuanced approach that considers the diverse types of telerehabilitation technologies and their potential impact. Another limitation is there's a potential for social desirability bias. Participants may have been more likely to express positive views on telerehabilitation due to a desire to please researchers. Additionally, we did not receive managerial opinions in terms of health policy, which is another significant limitation as such insights could provide valuable context for the implementation and scalability of telerehabilitation practices. Further studies using UTAUT are recommended to explore its limitations, validity, and applicability in the context of telerehabilitation adoption.

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SUPPLEMENTARY

Table I: Direct and Indirect Effects Between Exogenous and Endogenous Variables

Variables	Standardized Regression Coefficients	P value
Behavioral Intention → Telerehabilitation Usage Behavior	,53	<0,001***
Performance Expectancy → Behavioral Intention	-2,51	0,11
Effort Expectancy → Behavioral Intention	,35	0,79
Social Influence → Behavioral Intention	4,96	0,004**
Facilitating Conditions → Behavioral Intention	-1,66	0,24
Indirect Effects		
Variables	**Standardized Regression Coefficients**	**P value**
Performance Expectancy→ Behavioral Intention → Telerehabilitation Usage Behavior	-1,33	0,11
Effort Expectancy → Behavioral Intention → Telerehabilitation Usage Behavior	,19	0,79
Social Influence → Behavioral Intention → Telerehabilitation Usage Behavior	2,64	**0,007***
Facilitating Conditions → Behavioral Intention → Telerehabilitation Usage Behavior	-,88	0,24

**** = p<0,001, ** = p<0,005, * = p<0,05,*

Table II: Moderator Analysis of the Direct Relationships

Variables	Standardized Regression Coefficients	P value
Performance Expectancy: Gender → Behavioral Intention	,47	0,27
Effort Expectancy: Gender →Behavioral Intention	-,40	0,34
Social Influence: Gender→ Behavioral Intention	-,38	0,23
Facilitating Conditions: Gender →Behavioral Intention	,28	0,36
Performance Expectancy: Age →Behavioral Intention	4,20	0,11
Effort Expectancy: Age →Behavioral Intention	-1,41	0,53
Social Influence: Age→ Behavioral Intention	-5,81	**0,006***
Facilitating Conditions: Age→ Behavioral Intention	3,17	0,12
Performance Expectancy: Experience→ Behavioral Intention	-3,28	0,11
Effort Expectancy: Experience→ Behavioral Intention	1,60	0,36
Social Influence: Experience→ Behavioral Intention	4,42	**0,002****
Facilitating Conditions: Experience→ Behavioral Intention	-3,03	**0,03***
Performance Expectancy: Perception of Innovation →Behavioral Intention	,98	0,27
Effort Expectancy: Perception of Innovation → Behavioral Intention	,40	0,64
Social Influence: Perception of Innovation →Behavioral Intention	-1,55	0,10
Facilitating Conditions: Perception of Innovation → Behavioral Intention	,24	0,73

**** = p<0,001, ** = p<0,005, * = p<0,05,*