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## IJHMT

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## **The Impact of Managerial Personalities on Managerial Roles – A Study on Hospital Managers\***

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Research Article

### **Abstract**

What is the personality types, which features and how to reflect the personality of individuals in business life, both psychology and organizational behavior science has always been a subject of curiosity. Therefore, the scope of the research is to determine whether there is a relationship between these personality types and their roles in managerial activities for managers and how much personality affects which role. The aim of this study is to investigate the effect of personality types on executive roles in various managerial positions in hospital and to determine whether there is a relationship between personality types and executive roles, and if there is a relationship

\* This study is derived from Demet OZANER's doctoral dissertation titled "The Effect of Managerial Personalities on Managerial Roles in Hospital Managers".

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Ozoner, D., Sur, H. (2025). The Impact of Managerial Personalities on Managerial Roles – A Study on Hospital Managers. *International Journal of Health Management and Tourism*, 10(1): 1-26.

between which personality type and which executive role. This study is one of the first study in the context of determining the relationship and effect between managerial roles and personalities of managers. This study is observational, cross-sectional and descriptive. The questionnaire was used as the data collection tool and it was applied to the participants in 298 executive positions, public and private health sector. In the study, 15% of personality types had a leadership role; 13% in the role of external representation; 5% to the entrepreneurial role; 6% for follower role, 10% for resource provider role; 12% effect on the role of spokesperson. Responsibility dimension of personality types; leadership, external representation, resource provider iii and spokesman roles; compatibility dimension to the role of the spokesperson; balance size; leadership, resource provider and spokesman role; the dimension of openness to experience, to all executive roles except the spokesperson; extroversion dimension affects leadership, external representation, entrepreneur and follower roles. In line with the findings of the study, it is thought that the effect of personality types on the managerial roles needed may constitute a criterion in the selection of managers and the study will shed light on the new studies to be done on this subject.

**Keywords:** Personality types, executive roles, executive roles in hospitals

## INTRODUCTION

In the 21st century, the acceleration of scientific research, the widespread use of information systems in organizations, and the diversification of the qualifications required for employees and managers have led to significant changes. The personality traits of employees and managers greatly influence the work performed and its outcomes. For businesses to achieve their goals, it is essential that individuals at all levels of management work together in a harmonious and coordinated manner.

The challenges in healthcare services are deepening due to intense competition, differing expectations of service providers and recipients, rapid developments in service types, and the multi-stakeholder nature of the sector. Healthcare professionals need to adapt their existing structures, technological equipment, financial resources, and human resources to the changing environment in a timely manner in order to look to the future with confidence and sustain their existence. To achieve this goal, managers in this sector, which encompasses various professional groups, must organize management processes effectively and define job roles accurately. The success of managers expected to create value in healthcare services should be to facilitate cooperation among all units and establish a well-functioning service network.



Therefore, based on the view that the personality traits of managers are a decisive factor in making effective, accurate, and rational decisions, especially in the healthcare sector where many different professions collaborate, this topic is considered worthy of study. The purpose of this research is to investigate the impact of personality types on managerial roles among individuals in managerial positions within various departments of a hospital, and to determine whether there is a relationship between personality types and managerial roles, and if so, which personality types are associated with which managerial roles.

## **General Information**

### **The Concept of Manager**

A manager can be defined as a person who aims to achieve organizational goals and carries out planning, organizing, directing, coordinating, decision-making, and control functions in line with these objectives (Bachkirov, 2015:863). In businesses, the manager is most prominently involved in the decision-making function. They take on the role of commanding and directing operations while also focusing on maintaining the organizational structure. Supervision and regulation are among the responsibilities they must fulfill (Brickley et al., 2015:54).

### **Managerial Personality and Desired Traits in Managers**

The necessary traits for managers include being objective, making timely decisions, self-confidence, taking initiative, possessing a sense of responsibility, having a strong will, and being able to communicate effectively. Concepts such as leadership and strategic leadership have emerged in modern management. The primary reason for this is the practical differences created by the classical manager's management style compared to that of a leader-manager. While managers exhibit behavior focused on order, obedience, control, compliance, results, presentation, egocentrism, and authority, leaders are creative, guiding, questioning, empowering, quality-focused, understanding, and group-centered. Although the desired managerial personality and traits may appear as described today, they can vary in practice. In some places, seniority is considered important for management, while in others, a nepotistic approach may be adopted, neglecting meritocracy. However, it is often discussed that an effective manager should possess leadership qualities (Ergeneli, 2006). While most literature presents differing narratives, the functions of a manager can be briefly listed as follows (Ergeneli, 2006):

- Providing information
- Persuasion and influence

- Integration
- Directing
- Teaching and training

### **Mintzberg's Managerial Roles**

Henry Mintzberg aimed to define the roles of managers, emphasizing the significance of good project management for organizational success. He identified ten managerial roles, which can be categorized into three main groups: interpersonal roles (representative, leader, liaison), informational roles (monitor, disseminator, spokesperson), and decisional roles (entrepreneur, disturbance handler, resource allocator, negotiator) (Aypay, 2014:15).

**Interpersonal Roles:** A manager is responsible for engaging in and managing all kinds of interpersonal relationships. They should facilitate the introduction of the right individuals to one another and establish a communication network (Aypay, 2014:7).

**Informational Roles:** Managers receive a continuous flow of information. It is their duty to utilize and disseminate all information—whether political, tactical, functional, or related to control—effectively.

**Decisional Roles:** Managers are responsible for solving problems, redesigning systems, resolving conflicts, correcting deficiencies, creating optimal working conditions with other departments, and eliminating errors or misunderstandings.

Regardless of their level, managers must utilize functions such as rewarding, motivating, persuading, negotiating, mediating, strengthening communication, training, and crisis management for their subordinates. Additionally, a manager is someone who develops strategies, creates resources, and controls operations (Altamony and Garaibey, 2017:922). A manager should draw on scientific knowledge for their theoretical foundation, inspiration and talent from art, and practical problem-solving experience from craft.

### **Hospital Organization and Hospital Manager**

The significant advancements in medicine and technology during the 20th century have rapidly increased specialization in medicine and diversified healthcare personnel. This rapid growth and division of labor have heightened the likelihood of various conflicts among personnel trained at different levels and areas.

Hospital organizations are structurally complex and operate as open, dynamic systems. As 24-hour service providers, they produce uninterrupted services due to their urgent and non-

declinable nature. Moreover, patients are not in a position to determine or evaluate the type and quality of the services provided. These factors present additional challenges inherent to the nature of healthcare (Yükçü and Yüksel, 2015). In addition to the challenges mentioned above, particularly hospitals outside the public sector face issues related to income-expenditure and cost control. High technology and expertise increase both personnel costs and the maintenance costs of medical equipment, complicating the affordability of the services provided. All these challenges impose significant responsibilities on the hospital's management mechanism (Uğurluoğlu, 2015:54).

A hospital manager is responsible for managing the effectiveness of employees and ensuring the achievement of goals, much like managers in other sectors. Achieving superior organizational performance is almost always a manager's responsibility. In literature, a hospital manager is defined as "the person who manages the hospital by using the executive authority granted by the board of directors." However, this can vary in private hospitals and may also undergo periodic changes due to laws and decrees in the public sector. While some private entities have a board of directors, others may have a general secretary, general manager, or just a chief physician. In some cases, particularly in smaller hospitals, these individuals may also be the owners of the hospital (Yükçü and Yüksel, 2015). In the public sector, particularly since 2012, the Health Transformation Program has provided administrative and partial financial autonomy to institutions, and the separation of the chief physician's role from hospital administration has led to the emergence of the hospital director position, with an attempt to adopt a professional management approach.

Healthcare is one of the most responsibility-laden areas within the service sector. The hospital manager is tasked with ensuring the efficient operation of the system. Efficient operation requires a patient-centered approach, flexibility, a strong corporate culture, continuous training and development, adherence to ethical standards, and a 360-degree respectful environment. Additionally, given the significant contribution of the workforce to service output, it is essential for managers to be scientific, skilled, and competent (Yılmaz, 2017:96).

### **Management Roles in Hospital Management**

Sperry (2003) categorized the managerial skills of hospital managers into 12 subheadings under 3 main headings. These are presented in Table 1.

**Table 1: Basic Managerial Skills That Managers Should Have in Healthcare Institutions**

Category	Skill
Operational	- Strengthening commitment and motivation - Maximizing team performance - Delegation of authority to maximize performance - Effective management of stress and time
Relational	- Effective and strategic communication - Managing and negotiating conflicts and difficult people - Coaching for maximum performance and development - Guidance and consultation for maximum performance and development
Analytical	- Strategic thinking and decision making - Dominating the budgeting process - Mastering and controlling financial and human resources - Assessment of company and personal resources

Guo (2003) examined the roles of top hospital managers in six categories. These roles, which are as important for the scale used in this thesis as those of Mintzberg, are listed as follows:

- Leader
- Importance of communication
- Observer
- Crisis/problem solver
- Resource distributor
- Strategist

Pillay (2008) studied hospital management separately for public and private sectors; both were classified in terms of roles, including planning, organizing, leading, controlling, legal-ethical issues, and self-management.

### **The Concept of Personality**

Personality is a concept that emerges from internal factors and includes an individual's learning, interpretation, perception, and thought processes, influenced by biological and environmental factors (Işık, 2018: 142). The quality of interpersonal communication, adaptability to changing conditions, achievements, social status, and happiness are among the variables that have made personality a widely studied topic (McAdams, 2010). Vecchio (1988) viewed personality as a characteristic that distinguishes individuals from one another. Greenberg (1999) defined personality as the unique, stable patterns of behavior, thoughts, and feelings exhibited by individuals. Durna (2005) explained that personality consists of various factors such as physical, mental, and emotional aspects, which can differ significantly. He classified individuals into two

basic personality types: Type A and Type B. According to this classification, Type A individuals are highly competitive, ambitious, impatient, dedicated to their work, and sensitive to time. In contrast, Type B individuals are less confrontational regarding time, more patient, calmly face life's challenges, and have a balanced and relaxed approach. Thus, personality is the way an individual expresses their thoughts, feelings, and behaviors, determining their style of physical and social interaction (Tomrukçu, 2008). Due to the physical, mental, and emotional differences among individuals, they also interpret events differently. This forms the basis of personality (Durna, 2005).

### **Theories of Personality**

While conducting studies related to mental health and attempting to explain its structure, personality has been expressed through various theories, which are six in total:

- Psychoanalytic Approach
- Psychoanalytic-Social (Neo-Freudian) Approach
- Dispositional Trait Approach
- Behavioral/Social Learning Approach
- Humanistic Approach
- Biological Approach

Developed by Paul Costa and Robert McCrae, this theory encompasses all personality traits (Merdan, 2013). McCrae and Costa (2006) proposed that this theory, based on empirical observations, consists of five main dimensions. In terms of the biology of personality, attention should be given to the brain's anatomical structure and the functioning of the nervous system. Goldberg (1992) identified these five fundamental dimensions as:

- Extraversion
- Agreeableness
- Conscientiousness
- Neuroticism (emotional stability)
- Openness to experience

The Five-Factor Personality Model suggests that the characteristic differences among individuals can be classified universally, providing a comprehensive framework for understanding human personality. This model identifies five core dimensions—openness, conscientiousness, extraversion, agreeableness, and neuroticism—that are believed to capture the broad spectrum of

personality traits across different cultures and contexts. Each dimension encompasses specific attributes that contribute to the uniqueness of individuals, such as creativity and curiosity under openness or organization and reliability under conscientiousness. By categorizing these traits systematically, the model not only offers valuable insights into individual behavior but also serves as a foundational tool in various fields, including psychology, management, and human resources. A deeper exploration of these dimensions can reveal their practical implications, particularly in predicting job performance, leadership styles, and interpersonal dynamics.

### **General Managerial Roles**

Generally, in the literature, the roles undertaken by managers are summarized as encompassing a wide range of responsibilities that are crucial for organizational success (Ergeneli, 2006). These roles include, but are not limited to, planning, organizing, leading, and controlling, which collectively form the foundation of effective management practices. Managers are expected to adapt to varying circumstances, balance competing demands, and align their roles with organizational goals. Each of these roles requires distinct skills and competencies, such as strategic thinking, interpersonal communication, and decision-making abilities. Expanding on these roles provides deeper insights into the multifaceted nature of managerial responsibilities and their implications for organizational performance:

- Providing information
- Persuasion and influence
- Unification
- Giving orders
- Teaching/education

Henry Mintzberg, in 1973, aimed to define the roles of managers based on the understanding that effective project management is crucial for an organization's success, and his definitions have gained significant acceptance in the field of business. Within this framework, he identified 10 managerial roles:

- Figurehead
- Leader
- Liaison
- Information seeker and disseminator
- Spokesperson

- Entrepreneur
- Problem solver
- Resource allocator
- Negotiator

Character can be viewed as the foundational structure or skeleton of personality, serving as a framework through which individual differences are manifested and expressed through unique descriptors. These descriptors often reflect deeply ingrained traits that define a person's moral and ethical compass, influencing their behavior and decision-making processes. In the context of management, character traits are particularly significant, as they correspond to certain key attributes that distinguish one manager from another in the eyes of employees. Traits such as honesty, resilience, empathy, and accountability not only shape how managers lead and interact with their teams but also impact the trust and respect they command within the organization. By fostering positive character traits, managers can build stronger relationships with their employees, promote a healthy work environment, and drive organizational success. Exploring the interplay between character traits and managerial effectiveness can provide valuable insights into the dynamics of leadership and employee perceptions (Çam et al., 2023).

Managers are classified based on various attributes: authoritative or democratic, courageous or passive, ambitious or complacent, calm or fiery, compromising or contentious, indicating that these traits are results of the managers' character structure. Such traits are not inherited but are shaped by experiences and various situations encountered throughout life. These traits can always be improved upon and can change within situational contexts (Erkuş and Tabak, 2009: 216).

The concept of personality, therefore, integrates an individual's past experiences, current circumstances, and aspirations for the future, creating a dynamic and evolving framework that shapes behavior and identity. This temporal dimension highlights the inherent complexity of personality, as it is continuously influenced by historical context, present interactions, and future expectations. Consequently, it can be asserted that personality phenomena are strongly correlated with time, reflecting the ongoing interplay between life events, personal growth, and adaptation. Understanding this relationship allows for a deeper exploration of how personality traits develop and change over time, shedding light on the temporal factors that contribute to individual differences and their broader implications in various domains, such as psychology, education, and

organizational behavior. A manager's ability to resolve issues based on their experiences exemplifies the relationship between personality, time, and management. A manager's behavior significantly influences the design of conditions for the future, as well as the organization. However, the relatively unchangeable nature of personality presents challenges in developing managerial skills and the uncertainty regarding the duration of this development. Therefore, personality structure and the roles a manager embodies should not be considered independently (Tozkoparan, 2013).

Family and education significantly influence personality development. Individuals raised in supportive family environments tend to become just, democratic, and understanding individuals (Tokat and Giderler, 2006: 62). A manager who has grown up in such an environment is likely to be honest, visionary, innovative, and democratic. Work and life are not distinctly separated elements. However, since a manager greatly influences the motivation of those within their sphere of impact, the manager's personality traits are of great importance (Tokat and Giderler, 2006: 66). From the perspective of the Five-Factor Personality Theory, it is expected that a manager possesses a high degree of extraversion, emotional stability, agreeableness, conscientiousness, and openness (Cable and Judge, 2003: 200).

When examining personality types through the lens of the Five-Factor Model, it becomes evident that the elevation of each factor shares similar or overlapping traits with Mintzberg's 10 managerial roles. For instance, an extroverted individual may excel in managerial roles such as leader, information disseminator, representative, and spokesperson. Similarly, a person with high openness might perform well in roles like negotiator and problem solver.

It can be anticipated that all five personality traits have some degree of influence or relevance to the ten managerial roles. In our study, we specifically investigate which personality type affects which managerial role, to what extent, and whether these relationships vary based on factors such as age, gender, and position.

## **1. RESEARCH METHODOLOGY**

The purpose of this research is to investigate the impact of personality types on the managerial roles of administrators working in various positions within hospitals and to determine whether there is a relationship between personality types and managerial roles. This study is one of the few



studies in the literature that aims to reveal the relationship between personality types and managerial roles in healthcare institution managers.

The research employs a quantitative methodology through a survey application. During the planning phase, it was proposed to conduct the study across 18 hospitals on the Asian side of Istanbul, including 3 public university hospitals, 3 foundation university hospitals, 3 accredited private hospitals, 3 non-accredited private hospitals, 3 public training and research hospitals, and 3 public hospitals. Due to administrative constraints and voluntary participation issues in public hospitals, data collection was limited to institutions where permissions were granted and participation was achieved. Data was ultimately collected from 3 accredited private hospitals, 3 non-accredited private hospitals, 3 foundation university hospitals, 3 state hospitals, and 5 training and research hospitals where permissions were granted.

The research focused on senior managers working in both public and private sectors, including:

- Chief Physician/Deputy Chief Physician
- Head Nurse/Deputy Head Nurse
- General Manager/Deputy Manager
- Hospital Manager/Deputy Manager
- Other senior administrative managers (Human Resources Manager, Financial Affairs Manager, Finance Manager, Quality Manager, Corporate Marketing Manager, and their assistants)

These hospital managers were selected as the sample, because they are the key decision-makers who directly influence hospital operations, performance, and organizational outcomes. Additionally, convenience sampling was employed, including all senior managers from the specified hospitals who voluntarily agreed to participate in the survey. A total of 298 individuals who completed the scales thoroughly were analyzed.

### 1.1. Scales Used

The research utilized three types of survey instruments:

- Questions to collect sociodemographic data
- Five-Factor Personality Inventory
- Managerial Roles Determination Scale

The Five-Factor Personality Inventory Scale is a tool that has been widely used in both national and international studies. The study referenced in this thesis is "*A Research on the Relationship Between Personality Types, Emotional Intelligence, and Job Satisfaction*" conducted by Sudak and Zehir (2013), which ensured the validity and reliability of the scale. In the study, 79 questions prepared on a 5-point Likert scale were used to measure the variables (50 questions for personality types, 16 for emotional intelligence, and 13 for job satisfaction). After the factor analysis, 21 questions were excluded from the scale because they did not distribute properly or loaded onto other factors, reducing the scale's reliability. The remaining 58 questions were distributed across 11 factors. As expected, the personality types scale, consisting of independent variables, was distributed into 5 factors, while the managerial roles scale, consisting of dependent variables, was distributed into 6 factors. In the validity study, the total variance explained by the exploratory factor analysis was 64.690%. In the literature, reliability analyses of the five-factor personality scale consistently yield values above 0.70, which are considered reliable. In this study, the reliability analysis values for the personality types—Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience—are 0.8457, 0.8188, 0.7974, 0.8719, and 0.7457, respectively.

The Managerial Roles scale underwent a validity and reliability study through a pilot test (pre-test and post-test) conducted by Albayrak (2007). Factor analysis resulted in four factors that explained 65.939% of the total variance. The Cronbach's Alpha values for resource centralization, management centralization, end-user, and management duration were 0.8285, 0.8681, 0.7331, and 0.7054, respectively. In managerial roles, the impact values under Varimax rotation for Leader Role, Liaison Role, Monitor Role, Spokesperson Role, Entrepreneur Role, and Resource Allocator Role across the four criteria are as follows:

- Leadership: 0.1286, 0.2209, 0.0751, -0.0305
- External Representation: 0.1235, 0.0768, 0.2648\*, 0.0394
- Spokesperson: 0.2101, 0.3035\*, 0.0985, 0.1704
- Follower: 0.3253\*\*, 0.2352, 0.2398\*, 0.1254
- Entrepreneurship: 0.1563, -0.0158, 0.0552, -0.0501
- Resource Provider: 0.1151, 0.3125\*\*, 0.2053, -0.0326

(\* $p < 0.05$ ; \*\* $p < 0.01$ ). The correlation value between management centralization and end-user is  $r = 0.3299$ ,  $p = 0.01$ . In this study, descriptive factor analysis was also applied to both scales, and the findings are explained in detail in the results section.

## 1.2. Data Analysis

IBM SPSS 22.0 software was used for data analysis. Normality testing was evaluated based on skewness and kurtosis values between -1 and +1. For difference analyses, an independent samples t-test and one-way analysis of variance (ANOVA) were used, while Pearson correlation was applied for relationship analyses. Linearity in regression was assessed using the Ramsey test, residual normality was checked with the Anderson-Darling test, Durbin-Watson was used for autocorrelation, and the Breusch-Pagan test was utilized for homoskedasticity. The presence of multicollinearity was evaluated using the variance inflation factor (VIF). Linear and multiple linear regression analyses were conducted, and a 95% confidence level was used for interpretations.

## 2. ANALYSIS

This study aimed to investigate the impact of managerial personality traits on the managerial roles of hospital administrators in Istanbul. Data was collected from senior managers (e.g., Hospital Managers, Chief Physicians, Head Nurses, Human Resources Managers, Finance Managers, etc.) at three accredited private hospitals, three non-accredited private hospitals, three foundation university hospitals, three state hospitals, and five training and research hospitals.

### Demographics

- **Hospital Type:** 52% worked in accredited private hospitals, 18.1% in state hospitals, 12.1% in training and research hospitals, 11.1% in non-accredited private hospitals, 5.4% in foundation university hospitals, and 1.3% in public university hospitals.
- **Age:** The average age of hospital administrators was 40. The youngest manager was 22, and the oldest was 69.
- **Marital Status:** 69.5% were married, while 30.5% were single.
- **Gender:** Approximately 67% were female, and about 33% were male.
- **Education:** The majority had a bachelor's degree (37.9%).
- **Work Experience:** The average total work experience was 15.22 years, with an average managerial experience of 7.20 years.

### Personality Traits and Managerial Roles by Hospital Ownership

- **Emotional Stability:** Significant differences were found between public and private sector hospital managers ( $p < 0.05$ ). Public sector managers had an average score of  $3.30 \pm 0.646$ , while private sector managers scored  $3.49 \pm 0.607$ .
- **Entrepreneurial Role:** Public sector managers had a higher average score ( $5.93 \pm 0.891$ ) compared to private sector managers ( $5.66 \pm 0.954$ ), indicating significant differences ( $p < 0.05$ ).
- **Spokesperson Role:** Public sector managers scored an average of  $5.72 \pm 0.855$ , while private sector managers scored  $5.94 \pm 0.767$ , also showing significant differences ( $p < 0.05$ ).

### Marital Status

- No significant differences were found between married and single hospital managers regarding personality traits and managerial roles ( $p \geq 0.05$ ).

### Gender Differences

- **Leadership Role:** Female managers scored significantly higher in the Leadership Role ( $6.10 \pm 0.675$ ) compared to male managers ( $5.91 \pm 0.946$ ) ( $p < 0.05$ ).

### Education Level

- No significant differences were found among hospital managers based on their education levels ( $p \geq 0.05$ ).

### Position Differences

- **Emotional Stability:** There were significant differences in emotional stability based on managerial positions ( $p < 0.05$ ). Post Hoc LSD analysis revealed:
  - General Managers and Deputy General Managers had significantly higher emotional stability scores compared to Head Nurses and their assistants.
  - Chief Physicians scored higher in emotional stability than Head Nurses and their assistants.

### Age Differences

- **Responsibility:** Significant differences were found among age groups regarding the Responsibility trait ( $p < 0.05$ ). Specifically, those aged 22-30 had significantly lower scores compared to both the 31-45 and 46+ age groups.

### Total Work Experience

- **Compatibility:** Significant differences were noted in the Compatibility trait based on total work experience ( $p < 0.05$ ). Managers with over 21 years of experience had significantly higher scores than those with 2-10 years and 11-20 years of experience.

### Managerial Experience

- **Compatibility:** Significant differences were found in the Compatibility trait among managers based on their managerial experience ( $p < 0.05$ ). Managers with 0-1 year of experience had lower scores compared to those with 2-10 years and 11-20 years of managerial experience.
- **Openness to Experience:** Significant differences were found regarding the Openness to Experience trait based on managerial experience ( $p < 0.05$ ). Managers with 2-10 years of experience scored lower than those with 11-20 years and over 21 years of experience.
- **Extraversion:** Significant differences were observed based on managerial experience ( $p < 0.05$ ). Managers with 0-1 year of experience scored lower than those with 2-10 years and 11-20 years of managerial experience.

This comprehensive analysis indicates that personality traits significantly influence managerial roles in hospitals, with variations noted across different demographics and professional experiences.

### Findings on the Relationship Between the Managerial Personalities and Managerial Roles of Hospital Administrators (Correlation Analysis)

#### Regression Analysis on the Impact of Managerial Personalities on Managerial Roles

The impact of managerial personalities on managerial roles of hospital managers was analyzed using separate cross-sectional regression analyses for each managerial role. As a result, six different regression models were constructed to examine the explanatory power of managerial personalities on these roles. In other words, each managerial role was analyzed as a dependent variable, and the validity of the model and the proposed hypotheses were tested using multiple regression analysis.

**Table 2: Correlation Analysis of Managerial Personality Dimensions and Managerial Role Dimensions**

		Responsibility	Agreeableness	Extraversion	Emotional Stability	Openness to Experience	Leadership	External Representation	Entrepreneurship	Follower	Resource Provider	Spokesperson
Responsibility	r	1	0.543**	0.109	0.379	0.465	0.349**	0.319**	0.228**	0.176**	0.318**	0.320**
	p		0.000	0.061	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000
Agreeableness	r		1	0.210**	0.218	0.432	0.225**	0.243**	0.169**	0.098	0.152**	0.301**
	p			0.000	0.000	0.000	0.000	0.000	0.003	0.094	0.009	0.000
Extraversion	r			1	0.096	0.123	0.092	0.072	0.077	0.054	0.125*	0.091
	p				0.097	0.034	0.114	0.215	0.185	0.358	0.033	0.115
Emotional Stability	r				1	0.364	0.245	0.202	0.156	0.137	0.200	0.185
	p					0.000	0.000	0.000	0.007	0.019	0.001	0.001
Openness to Experience	r					1	0.313	0.314	0.204	0.253	0.182	0.261
	p						0.000	0.000	0.000	0.000	0.002	0.000

Pearson korelasyonu

Beyond the results mentioned above, the primary aim of this study is to investigate the extent to which managers' personalities impact managerial roles, and to determine which personality traits influence which managerial role and to what extent. According to the findings, it was observed that personality traits influence managerial roles to varying degrees. The following results were drawn:

- The “Leadership Role” was affected by responsibility, emotional stability, openness to experience, and extraversion, with a total impact of 15%. The most significant factor among these traits was openness to experience, constituting 38.8% of the total effect, while emotional stability had the least impact at 18.8%. Additionally, agreeableness was found to have no statistically significant effect on the leadership role.
- The “External Representation Role” was influenced by responsibility, openness to experience, and extraversion, with a total effect of 13%. Openness to experience made up 44.4% of this effect, whereas responsibility had the least influence at 29.8%. Agreeableness and emotional stability did not have a statistically significant impact on the external representation role.

- The “Entrepreneurial Role” was solely impacted by openness to experience, accounting for 5% of the total effect. Responsibility, emotional stability, agreeableness, and extraversion were found to have no statistically significant impact on this role.
- The “Follower Role” was impacted by openness to experience and extraversion, with a total effect of 6%. Openness to experience was the primary influencing factor in this case. Responsibility, emotional stability, and agreeableness were not found to be statistically significant for this role.
- The “Resource Provider Role” was influenced by responsibility, emotional stability, and openness to experience, with a total effect of 10%. Responsibility had the highest impact at 51%, while openness to experience had the least influence, contributing 21.7%. Neither agreeableness nor extraversion had a statistically significant effect on the resource provider role.
- The “Spokesperson Role” was impacted by responsibility, agreeableness, and openness to experience, with a total effect of 12%. Openness to experience was the dominant factor, constituting 34.6% of the total effect, while responsibility had the least influence at 27%. Emotional stability and extraversion were not statistically significant for this role.

The results indicate that personality traits have the most significant impact on the leadership role among the managerial roles. It is particularly noteworthy that agreeableness did not affect the leadership role, while all other personality traits did.

### 3. DISCUSSION AND CONCLUSIONS

In our study, the effects of hospital administrators' demographic, professional, and personality traits on managerial roles were examined. The results provide significant insights into the profiles of healthcare managers and how their personality traits shape managerial roles.

Among the administrators participating in the study, 52% worked in accredited private hospitals, 18.1% in state hospitals, 12.1% in training and research hospitals, 11.1% in non-accredited private hospitals, 5.4% in foundation university hospitals, and 1.3% in public university hospitals. The high percentage in accredited private hospitals suggests that accreditation processes might have a more pronounced impact on managers. Kusumawardhani et al. (2021) reported that employees and managers in accredited hospitals demonstrated higher performance indicators. Structural differences between the public and private sectors might influence this distribution.

The average age of administrators was 40 years, indicating that they were at a maturity level and had gained sufficient experience in their field. The youngest manager was 22 years old, while the oldest was 69 years old, highlighting the wide age range of managerial positions. The average total work experience was 15.22 years, with 7.20 years in managerial roles, which suggests that participants generally had adequate experience for their positions. A study conducted among nurses with managerial responsibilities in Iran found that caregiving experience significantly influenced job performance (Pourteimour et al., 2021), supporting the idea that experience plays a crucial role in performance.

Additionally, 67% of participants were women, and 33% were men, indicating a significant increase in the presence of women in managerial roles in healthcare, suggesting that challenges like the "glass ceiling" are diminishing. A study conducted in public hospitals in Egypt revealed that female physicians had higher perceived knowledge of managerial policies and protocols (Mousa et al., 2020). Female managers also scored significantly higher in the leadership role compared to male managers ( $6.10 \pm 0.675$  vs.  $5.91 \pm 0.946$ ,  $p < 0.05$ ). This difference might be explained by women's more inclusive and empathetic management styles. When comparing managerial social responsibility levels between women and men in boards of directors, women were found to score higher (Reig-Aleixandre et al., 2023).

The marital status of the participants (69.5% married) was found to have minimal impact on managerial roles. However, the significant difference in responsibility scores across age groups, with older participants scoring higher, suggests that this might be related to experience and age. Considering that younger participants were more likely to be single, marital status could indirectly influence this dynamic. A study conducted among Iranian nurses found that unmarried managers exhibited lower responsibility levels compared to their married counterparts, even after adjusting for all confounding factors, and were more prone to mental health issues (Buckman et al., 2021).

The fact that the majority of administrators held a bachelor's degree (37.9%) indicates that healthcare administrators are generally academically qualified individuals. The lack of a significant relationship between education level and managerial roles suggests that professional experience may be a more decisive factor. Among 204 managers working in a psychiatric hospital, those with postgraduate education were found to have lower satisfaction with their institutions (Daniel & Daniel, 2020). This might be attributed to higher expectations among those with advanced education and the inability of the current work environment to meet these expectations.



Public sector managers had lower emotional stability scores ( $3.30\pm 0.646$ ) compared to private sector managers ( $3.49\pm 0.607$ ,  $p<0.05$ ). This difference might be influenced by the bureaucratic limitations public managers face during decision-making processes. However, another study found that public sector employees had higher emotional well-being compared to their counterparts outside the public sector (Lahat & Ofek, 2022). In the context of healthcare, public sector managers might face higher stress levels due to more rigid bureaucratic processes and resource constraints. On the other hand, private sector managers, benefiting from a more flexible and outcome-oriented work environment, might find it easier to maintain emotional stability.

Public sector managers scored higher in the entrepreneurial role ( $5.93\pm 0.891$  vs.  $5.66\pm 0.954$ ,  $p<0.05$ ) compared to private sector managers. This could be due to their greater ability to make autonomous decisions. In a comparative study, public managers scored 1.8 points higher in leadership than their private sector counterparts, yielding similar results (Fanelli et al., 2020).

In the spokesperson role, private sector managers outperformed their public sector counterparts ( $5.94\pm 0.767$  vs.  $5.72\pm 0.855$ ,  $p<0.05$ ). This difference could be attributed to the private sector managers' more prominent communication skills with external stakeholders. Another study emphasized the necessity of developing digital communication skills among managers (Lee et al., 2024).

Compatibility scores increased with total work experience, with managers having 21+ years of experience scoring higher than those with 2-10 years and 11-20 years of experience ( $p<0.05$ ). A systematic review involving twelve studies on hospital administrators also highlighted the importance of experience (Kakemam et al., 2020). Similarly, this study found significant increases in extraversion and openness to experience levels as managerial experience increased.

Responsibility, emotional stability, openness to experience, and extraversion collectively impacted the leadership role by 15%, with openness to experience being the most significant factor (38.8%) and emotional stability having the least impact (18.8%). A study in Ghana found that openness to experience positively predicted academic knowledge (Britwum et al., 2022). Similarly, openness to experience (44.4%) emerged as the dominant factor in this study. Another study involving 497 nurses identified a positive correlation between conscientious managerial approaches and openness to experience (Alsyouf et al., 2022).

The entrepreneurial role was explained solely by openness to experience (5%), with no significant influence from other personality traits. A study involving 160 organizations in Tehran also found a significant relationship between entrepreneurial roles and openness to experience (Moradi et al., 2021). These findings align with the literature, as entrepreneurial roles require qualities such as generating innovative ideas, taking risks, adapting to change, and leveraging opportunities. Openness to experience enhances individuals' receptiveness to new ideas and experiences, fostering creativity and flexibility, making it a key determinant in undertaking entrepreneurial roles.

Responsibility, emotional stability, and openness to experience impacted the resource provider role by 10%, with responsibility having the greatest effect (51%) and openness to experience the least (21.7%). A study involving 152 managers reported that extraversion, agreeableness, and conscientiousness significantly influenced risk propensity, which negatively affected risk perception. Furthermore, risk propensity fully mediated the relationship between personality traits and risk perception (Wang et al., 2016).

In the spokesperson role, responsibility, agreeableness, and openness to experience collectively impacted the role by 12%, with openness to experience having the strongest influence (34.6%). This role requires skills such as representing the organization, effectively communicating with external stakeholders, and managing the corporate image. Individuals open to experience can successfully perform this role due to their ability to adapt to changing situations and their openness to diverse perspectives. Responsibility and agreeableness are also thought to support the trustworthiness, collaboration, and diplomacy required for this role.

Incorporate personality assessments, such as the Five-Factor Personality Inventory, during the hiring and promotion process for managerial positions. This will help identify candidates with personality traits that align with the specific demands of managerial roles, such as leadership, external representation, and entrepreneurship. Since female managers scored higher in leadership roles, healthcare institutions should implement targeted leadership development programs to harness and further enhance these capabilities. Mentoring and training initiatives can support women in expanding their leadership influence within organizations.

Public sector managers exhibited lower emotional stability compared to their private sector counterparts. Institutions can organize stress management and resilience-building workshops to equip these managers with tools to better handle bureaucratic and resource-related challenges.

Since openness to experience significantly impacts entrepreneurial, leadership, and external representation roles, hospitals should design training programs that promote creative thinking, adaptability, and innovation among managers. Such programs could include exposure to case studies, simulations, and cross-sector collaborations. Given the importance of external communication skills, especially in the private sector, managers in spokesperson roles should receive specialized training in digital communication and public relations. This will help them effectively represent their organizations and adapt to modern communication trends.

The observed similarities between certain leadership roles and different personality types indicate a complex interplay that warrants deeper exploration within the context of existing literature and theories. While the study has successfully identified correlations between personality traits and managerial roles, the underlying reasons for these specific relationships require further investigation. For instance, traits such as openness to experience and extraversion might align with leadership roles due to their inherent connection to adaptability, creativity, and interpersonal skills. However, roles that involve decision-making under pressure or resource allocation may also overlap with traits like conscientiousness and emotional stability, which emphasize organization and resilience. These overlaps suggest that personality traits may not influence roles in isolation but instead interact dynamically, shaped by situational and organizational factors. Future research could delve into these dynamics, integrating frameworks such as Trait Activation Theory or Contingency Leadership Models to better explain why certain traits align more strongly with specific leadership functions. This approach would provide a more nuanced understanding of the relationship between personality and managerial roles (Ayman et al., 1995; Luria et al., 2019).

This study has several limitations that should be acknowledged. First, the research was conducted in a single metropolitan area (Istanbul), limiting the generalizability of the findings to other regions or countries with different healthcare systems. Second, the cross-sectional design of the study does not allow for causal inferences about the relationships between personality traits and managerial roles. Third, while the sample size was adequate, the reliance on self-reported questionnaires may have introduced response bias. Lastly, the exclusion of certain public hospitals due to administrative constraints may have impacted the representativeness of the sample. Future studies should address these limitations by employing longitudinal designs, expanding geographic diversity, and incorporating objective performance metrics.

Despite these limitations, this study provides a valuable foundation for future research by highlighting the importance of personality traits in managerial effectiveness. Future studies should address these limitations by employing longitudinal designs, expanding geographic diversity, and incorporating objective performance metrics. Additionally, exploring the interaction between personality traits and organizational outcomes could offer deeper insights into effective management practices. By focusing on these aspects, future research can contribute to the development of evidence-based strategies that improve leadership selection and training in healthcare settings.

#### Recommendations for Hospital Administrator Appointments:

- **Utilize Personality Assessments:** During hospital administrator appointments, tools such as the Five-Factor Personality Inventory should be used to identify candidates with personality traits suited for roles like leadership, entrepreneurship, and compatibility.
- **Evaluate Leadership Capacities:** Candidate evaluations should emphasize leadership skills, decision-making abilities, and crisis management experience, while ensuring access to training programs to enhance these competencies.
- **Balance Experience and Academic Qualifications:** Administrator candidates should be assessed by balancing their total work and managerial experience with their academic qualifications, considering the impact of experience on roles such as responsibility and entrepreneurship.
- **Support Female Leaders:** Given the strong performance of female leaders in leadership roles, policies and opportunities that support women in managerial positions should be implemented.
- **Focus on Emotional Resilience:** Appointments to public and private sector managerial positions should prioritize emotional stability, with stress management programs designed to strengthen this essential capability.

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## **Bibliometric Mapping of Documents on SPA Tourism in the Scopus Database Between 1990 and 2024**

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Research Article

### **Abstract**

This study aims to provide a bibliometric analysis of spa tourism literature by examining key publications, authors, countries, institutions, and keywords. The research provides an overview of the development and structure of spa tourism studies to guide researchers and industry professionals. In this context, 174 documents indexed in the Scopus database between 1990 and 2024 with the keyword "spa tourism" were analyzed. The bibliometric analysis was conducted using VOSviewer version 1.6.20 and included document, author, country, institution, and keyword citation analyses. The results show that Bakucz Márta, de la Hoz-Correa Andrea, Muñoz-Leiva Francisco, and Han Heesup are among the most frequently cited authors in the field. The most cited studies include "Past themes and future trends in medical tourism research" and "Health or self-indulgence? The motivations and characteristics of spa-goers." In terms of country contributions, Spain, the United Kingdom, Hungary, and South Korea play significant roles in spa tourism research. Among institutions, the University of Granada (Spain), University of Pécs (Hungary), and Tamkang University (Taiwan) are the leading contributors. The keyword analysis

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reveals that "spa tourism," "health tourism," and "tourism" are the most frequently used terms. This study offers a structured overview of spa tourism research, highlighting the necessity for further comparative analyses and interdisciplinary approaches to advance the field.

**Keywords:** SPA tourism, Spa, Bibliometric Mapping Analysis, Scientific Productivity

## INTRODUCTION

Spa tourism is an expanding subfield of health and wellness tourism that has received increasing attention in the academic literature. Smith and Puczko (2015: 207) stated that it is "important to define 'spa tourism,' as the term is frequently used in tourism promotion." The global spa market exhibited significant growth, expanding from \$65.21 billion in 2023 to \$72.97 billion in 2024, with a compound annual growth rate (CAGR) of 11.2% (The Business Research Company, 2024). As the global market for spa tourism expands, the need for scientific research and comprehensive analysis in academic literature has become increasingly important.

A review of bibliometric studies in the field reveals academic interest in various subcomponents of health tourism and identifies research gaps. Temizkan, Çiçek, and Özdemir (2015) analyzed general trends in health tourism by examining 155 articles indexed in the ISI Web of Knowledge database from 1991 to 2014. While their study offered a comprehensive overview of health tourism, it did not focus specifically on spa tourism. Kazak and Kazak (2023) analyzed over 13,700 articles indexed in SCI-EXPANDED, SSCI, and ESCI in the Web of Science database, but their evaluation did not include spa tourism. Doğan and Baynal Doğan (2020) analyzed 494 articles indexed in the SSCI database of Web of Science between 2000 and 2019. Among these, they identified 49 articles related to thermal and spa-wellness tourism, highlighting a significant gap in research on this topic.

Aluculesei et al. (2021) used co-word analysis to examine 627 studies on medical spa research published in the Web of Science Core Collection between 1997 and 2021. Their study revealed general trends and research topics in the field of medical spa tourism and emphasized the need to expand research to include databases such as Scopus and PubMed. Suban (2023) analyzed spa tourism under the umbrella of wellness tourism using the Scopus database from 1998 to 2021. These findings underscore the gaps in the international literature on spa tourism, indicating the need for future studies to address this area. Often categorized under wellness or health tourism, this concept requires independent investigation.

This study aims to guide researchers interested in this field by using the keyword "spa tourism" to analyze all publications in the Scopus database between 1990 and 2024, as of August 27, 2024. Considering the lack of bibliometric studies directly evaluating spa tourism publications, this research is regarded as significant for addressing a major gap in the literature.

### **Spa and Spa Tourism**

Smith and Puczkó (2013: 10) defined "spa tourism as focusing on the relaxation, healing or beautifying of the body in spas using preventative wellness and/or curative medical techniques." In their earlier work, they described spa tourism as "tourism which focuses on the relaxation or healing of the body using mainly water-based treatments; such as, mineral or thermal pools, steam rooms; and saunas. Emphasis tends to be focused on curing, rehabilitating, or resting the body" (Smith & Puczkó, 2009: 85).

In recent years, factors such as urbanization, stressful living conditions, and environmental pollution have increased interest in spa services. Budakkıran and Mercan (2023) noted that this growing demand impacts both health tourism enterprises and hotel operations. Complementary practices such as massage, hydrotherapy, and acupuncture are popular among individuals seeking to improve their physical and mental well-being. Ramos and Untong (2014) described spa centers as places dedicated to renewing the mind, body, and soul, emphasizing their effectiveness in coping with stress caused by modern life.

Spa tourism also stands out as a rapidly expanding sector within wellness tourism. Europe plays a leading role in wellness tourism, with growing interest in spa tourism driven by individuals' desire to maintain physical and mental well-being (Papadopoulou, 2020). Stănciulescu, Diaconescu, and Diaconescu (2015) emphasized that spa services offer a wide range of activities to enhance individuals' social, emotional, physical, and psychological health. Similarly, Koskinen (2019) highlighted that spa tourism contributes to healthy aging and is particularly important for strengthening social ties among older individuals.

Modern spa tourism is characterized by water-based therapies and services provided by professional therapists in specialized spa facilities. Kharisma and Muni (2017) highlighted the positive impacts of spa tourism rooted in local wisdom, such as strengthening the local economy, creating jobs, and preserving cultural values in Ubud. Meanwhile, Erdeli, Dincă, Gheorghilaş, and Surugiu (2011) noted that spa tourism evolves over time with changes in consumer behavior, offering services tailored to different customer profiles and concepts. In recent years, spa tourism

has undergone significant changes by actively embracing wellness and well-being (Pinos-Navarrete, Abarca-Álvarez, & Maroto-Martos, 2022). This evolution has contributed to the diversification of spa services that aim to support physical and mental health through a comprehensive wellness approach.

The popularity of spa tourism calls for further research to better understand these experiences, the nature of their appeal, and how they can be marketed to tourists. Laing, Voigt, and Frost (2013) emphasized that the changing paradigm of spa tourism has introduced new dimensions to tourists' expectations of their experiences.

## 1. RESEARCH METHODOLOGY

This study aims to guide researchers interested in spa tourism by analyzing all publications in the Scopus database from 1990 to 2024 using the keyword "spa tourism." The study seeks to address the following research questions:

1. Which are the most frequently cited core articles in spa tourism?
2. Who are the leading contributors (authors, institutions, and countries) to spa tourism research?
3. What are the main journals that publish spa tourism studies?
4. What are the primary topics covered in spa tourism articles?

To achieve these objectives, bibliometric mapping analysis was employed. Bibliometrics refers to "the numerical analysis of publications produced by individuals or institutions within a specific field, time period, or region, and the relationships between these publications" (Ulakbim Cahit Arf Information Center, 2024).

The data for this study were retrieved from the Scopus database, encompassing 174 documents published between 1990 and 2024, using the keyword 'spa tourism' as of August 27, 2024. Scopus, a multidisciplinary bibliographic database owned by Elsevier, has been a reliable source for citation analyses since 1996 (Ulakbim Cahit Arf Information Center, 2024). It is widely used in social sciences due to its comprehensive coverage (Archambault et al., 2009).

The data from 174 documents were initially exported from the Scopus database in Microsoft Excel format. Bibliometric mapping was performed using VOSviewer 1.6.20 software. VOSviewer uses bibliographic data such as authors, institutions, countries, documents, and keywords to create visual maps, enabling structural analysis of scientific fields (Van Eck & Waltman, 2010).

In this study, no citation-based restrictions or only minimal thresholds were applied, ensuring that all documents, authors, sources, institutions, countries, and keywords were included in the analysis. This methodological approach aligns with the exploratory nature of bibliometric studies, which emphasize comprehensive dataset inclusion to accurately reflect the dynamics of a research field (Cobo et al., 2011). By incorporating all relevant entities, this study provides a more comprehensive evaluation of the scientific landscape, enabling a nuanced understanding of research collaborations, topic distributions, and academic influence within the field of spa tourism. Such an inclusive approach is essential for capturing both established and emerging contributions, as well as identifying potential "Sleeping Beauty" phenomena, where certain works may gain recognition over time (Van Raan, 2004).

To ensure the accuracy and reliability of the network analysis, The association strength normalization method was employed in all visualization analyses. This method is widely used in bibliometric network mapping as it helps determine the connections between nodes by normalizing the co-occurrence ratio between two items based on the total number of co-occurrences in the dataset. As a result, it provides more balanced and meaningful relationships (Van Eck & Waltman, 2009).

Building upon this, overlay visualization was applied to citation analyses, covering various citation metrics such as author, document, source, country, and institutional citations. In this approach, citation count was chosen as the weighting measure to reflect the impact of citations, while the average citation score served as the scoring metric. According to the VOSviewer manual, assigning weights to elements or links based on attributes such as citation count or publication count enhances their prominence in the visualization. Based on these selections, node colors indicate different citation levels: blue represents low citation scores, green indicates medium scores, and yellow signifies high citation scores (Van Eck & Waltman, 2023). Consequently, areas in yellow correspond to research with the highest citation counts, whereas green represents moderate citation activity, and blue signifies lower citation counts.

Furthermore, network visualization was used for keyword analysis to reveal conceptual structures and research trends within the field. This method was selected due to its effectiveness in visualizing conceptual relationships (Van Eck & Waltman, 2014) and identifying keyword clusters. To determine the prominence of keywords, occurrences was selected as the weighting metric, reflecting the frequency of keyword appearances in the dataset. Network visualization also

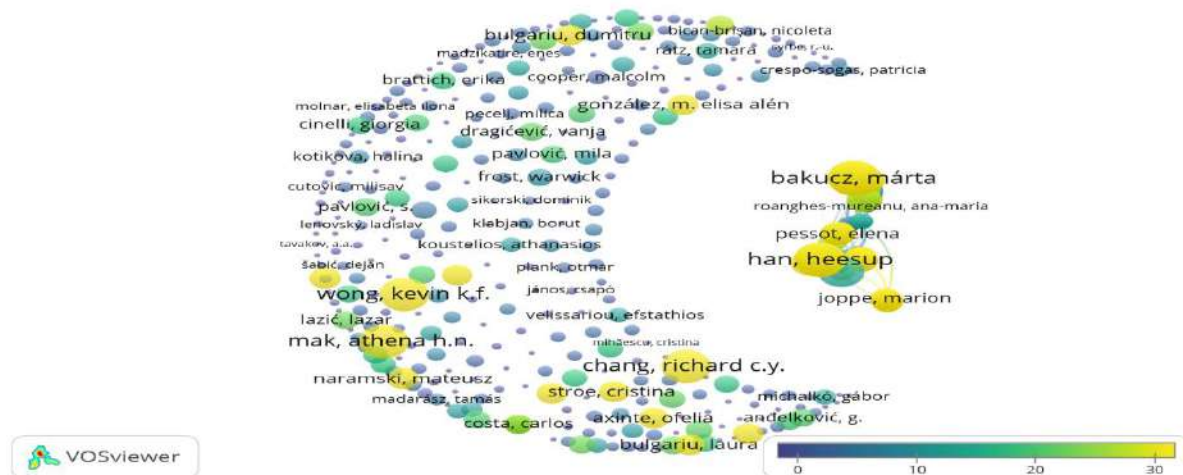
facilitates the grouping of similar topics through clustering methods, where node size represents the importance of a keyword in research, while link density indicates the strength of relationships between terms. Through this clustering analysis, key research trends and core topics within the field were identified (Waltman et al., 2010).

Although link strength was utilized for mapping, it was reported only in keyword analysis, as citation counts were analyzed directly. This is because, in VOSviewer, the calculation and reporting of link strength vary depending on the type of analysis conducted (Van Eck & Waltman, 2014). For example, in co-authorship or co-citation analyses, link strength serves as a fundamental measure indicating the intensity of relationships between nodes (Waltman et al., 2010).

## 2. ANALYSIS and DISCUSSION

### 2.1. Author Citation Analysis

During the analysis, 456 authors with at least one publication and zero citations were selected for evaluation. According to the results of the VOSviewer analysis, the top 10 authors were ranked based on their citation counts as follows: Bakucz, Márta received 187 citations; de la Hoz-Correa, Andrea and Muñoz-Leiva, Francisco each received 174 citations; Han, Heesup, Kiatkawsin, Kiattipoom, and Kim, Wansoo each received 167 citations; Chang, Richard C.Y., Mak, Athena H.N., and Wong, Kevin K.F. each received 154 citations; and Szromek, Adam R. received 117 citations. The results of the author citation analysis are presented in Figure 1.



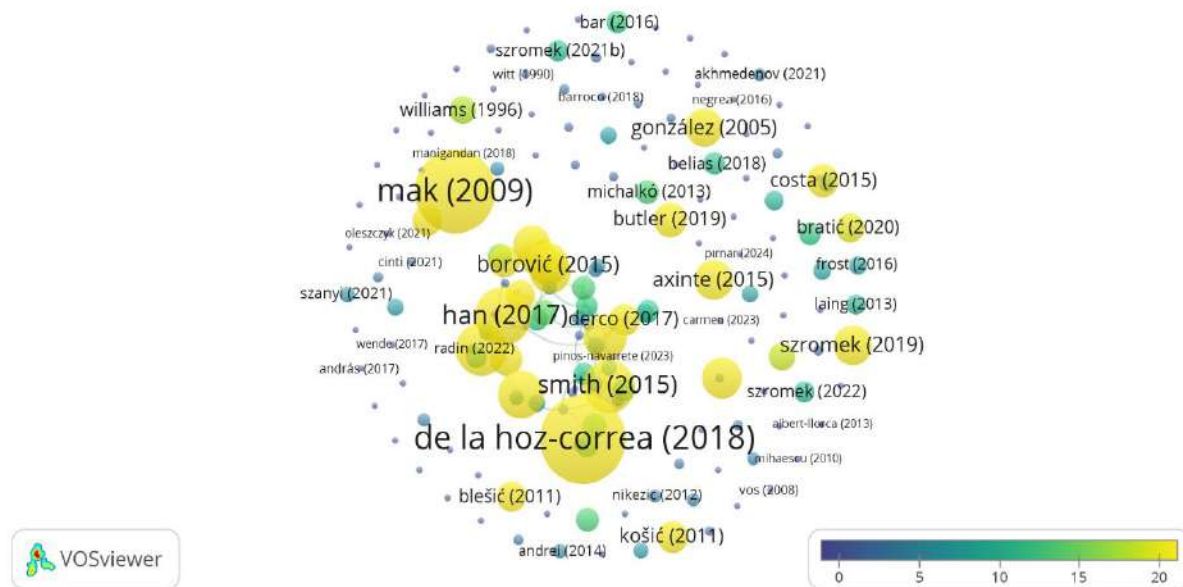
**Figure 1: Results of the Author Citation Analysis**

Note: Only the names of the first authors from each publication are included in the visualization.

An examination of Figure 1, which presents the visual analysis conducted using VOSviewer, reveals that Bakucz, Márta; Han, Heesup; Wong, Kevin K.F.; and Chang, Richard C.Y. stand out as prominent authors in terms of citations. Highlighting spa as a significant subfield of wellness tourism, Suban (2023) identified Smith, M., Voigt, C., and Puczko, L. as the most-cited authors in the wellness tourism literature within the Scopus database. According to the citation analysis, Smith, M. received a total of 189 citations, Voigt, C. 183 citations, and Puczko, L. 164 citations.

## 2.2. Document Citation Analysis

Publications that addressed spa tourism were analyzed based on their citation counts. Considering documents with at least zero citations, 171 documents were selected for analysis. The results of the document citation analysis are presented in Figure 2.



**Figure 2: Document Citation Analysis**

Note: The document analysis visual was created based on the first authors of the publications.

According to Figure 2 and the data obtained from the Scopus database, the most cited publications in the field of spa tourism demonstrate the diversity of research themes and their academic impact. The leading publication, "Past themes and future trends in medical tourism research: A co-word analysis" by de la Hoz-Correa (2018), received 174 citations. Another

significant work is "Health or self-indulgence? The motivations and characteristics of spa-goers" by Mak Athena H.N. (2009), with 154 citations.

Further notable studies include "Investigating customer loyalty formation for wellness spa: Individualism vs. collectivism" by Han, Heesup (2017), with 76 citations, and "More than a special interest: Defining and determining the demand for health tourism" by Smith (2015), with 63 citations. Other important works include "The role of wellness spa tourism performance in building destination loyalty: The case of Thailand" by Han, Heesup (2018), with 61 citations, and "Natural resources in health tourism: A systematic literature review" by Pessot, Elena (2021), with 49 citations.

Additionally, research focusing on the sector's strategic opportunities during COVID-19, such as "Spa tourism opportunities as strategic sector in aiding recovery from Covid-19: The Spanish model" by Pinos Navarrete (2021), received 46 citations. Studies addressing regional spa tourism topics, like "Utilization and tourism valorization of geothermal waters in Croatia" by Borovic (2015) with 41 citations and "Psoriasis treatment via doctor fishes as part of health tourism: A case study of Kangal Fish Spring, Turkey" by Sayılı (2007) with 40 citations, further highlight the scope of academic interest in the field. Other notable works include "Competing hospitalities in Japanese rural tourism" by Knight (1996) with 38 citations. These findings are systematically presented in Table 1.

Aluculesei et al. (2021) conducted a comprehensive bibliometric analysis of studies in the Web of Science Core Collection database to identify past trends in the medical spa field and anticipate future research directions. Among the most cited works in this domain, the article titled "Watering our cities: The capacity for Water Sensitive Urban Design to support urban cooling and improve human thermal comfort in the Australian context" stands out. Published in 2013, it has garnered 263 citations and 4020 reads, underscoring its substantial academic impact.

Another highly influential publication is "Hydrotherapy, balneotherapy, and spa treatment in pain management", published in 2005. This article has received 261 citations, 3342 reads, and a research interest score of 153.9, emphasizing its importance in examining the therapeutic applications of spa treatments in pain management.



**Table 1: Document Citation Analysis Results**

Rank	Document Title	First author names	Year	Number of Citations
1	Past themes and future trends in medical tourism research: A co-word analysis	de la Hoz-Correa	2018	174
2	Health or self-indulgence? The motivations and characteristics of spa-goers	Mak Athena H.N.	2009	154
3	Investigating customer loyalty formation for wellness spa: Individualism vs. collectivism	Han, Heesup	2017	76
4	More than a special interest: Defining and determining the demand for health tourism	Smith	2015	63
5	The role of wellness spa tourism performance in building destination loyalty: the case of Thailand	Han, Heesup	2018	61
6	Natural resources in health tourism: a systematic literature review	Pessot, Elena	2021	49
7	Spa tourism opportunities as strategic sector in aiding recovery from Covid-19: The Spanish model	Pinos Navarrete	2021	46
8	Utilization and tourism valorisation of geothermal waters in Croatia	Borovic	2015	41
9	Psoriasis treatment via doctor fishes as part of health tourism: A case study of Kangal Fish Spring, Turkey	Sayili	2007	40
10	Competing hospitalities in Japanese rural tourism	Knight	1996	38

Source: Compiled by the author from VOSviewer analysis.

### 2.3. Source Citation Analysis

When a source is required to appear at least once in a document and to have been cited at least once, 90 out of 119 sources were analyzed. As a result of the analysis performed using the VOSviewer software, Figure 3 was generated.

**Figure 3: Source Citation Analysis Results**

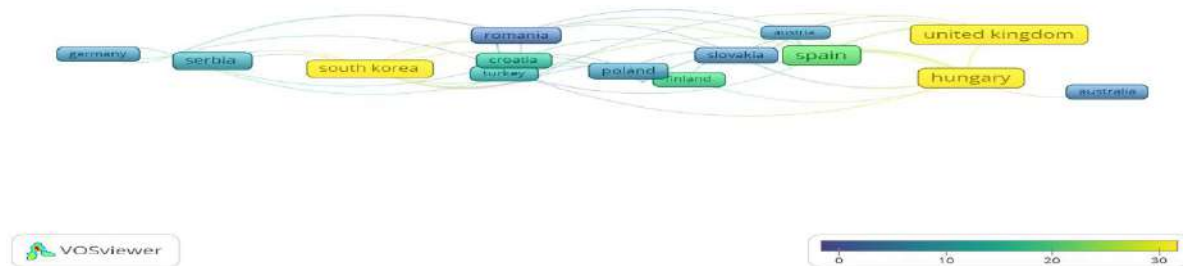
Note: The visual was created with the 32 items most closely related to each other out of 90 sources.

As shown in Figure 3, derived from the VOSviewer analysis of data obtained from the Scopus database, the top 10 journals with the highest number of citations are as follows: Tourism Management with three publications and 216 citations, Sustainability with ten publications and 198 citations, International Journal of Tourism Research with one publication and 154 citations, International Journal of Hospitality Management with one publication and 76 citations, Tourism Recreation Research with two publications and 69 citations, Renewable and Sustainable Energy Reviews with two publications and 63 citations, Journal of Travel and Tourism Marketing with one publication and 61 citations, International Journal of Spa and Wellness with eight publications and 47 citations, Tourism and Hospitality Research with one publication and 46 citations, and Journal of Vacation Marketing with two publications and 40 citations.

In the study by Aluculesei et al. (2021), among the journals publishing the most articles in the medical spa field in the Web of Science Core Collection database, the International Journal of Biometeorology (USA) ranks first with 24 articles. It is followed by Acta Balneologica (Poland), Balneo Research Journal (Romania), and Sustainability (Switzerland), each with 10 articles. Additionally, the Asia Pacific Journal of Tourism Research (USA), Dermatologic Clinics (USA), Environmental Earth Sciences (USA), Journal of Clinical Microbiology (USA), Rheumatology International (Germany), and Science of the Total Environment (Netherlands) have each contributed 7 articles to this field.

#### 2.4. Country Citation Analysis

In the analysis of country citations, a minimum threshold of one publication and zero citations per country was set. The results of the country citation analysis are presented in Figure 4.



**Figure 4: Country Citation Analysis Results**

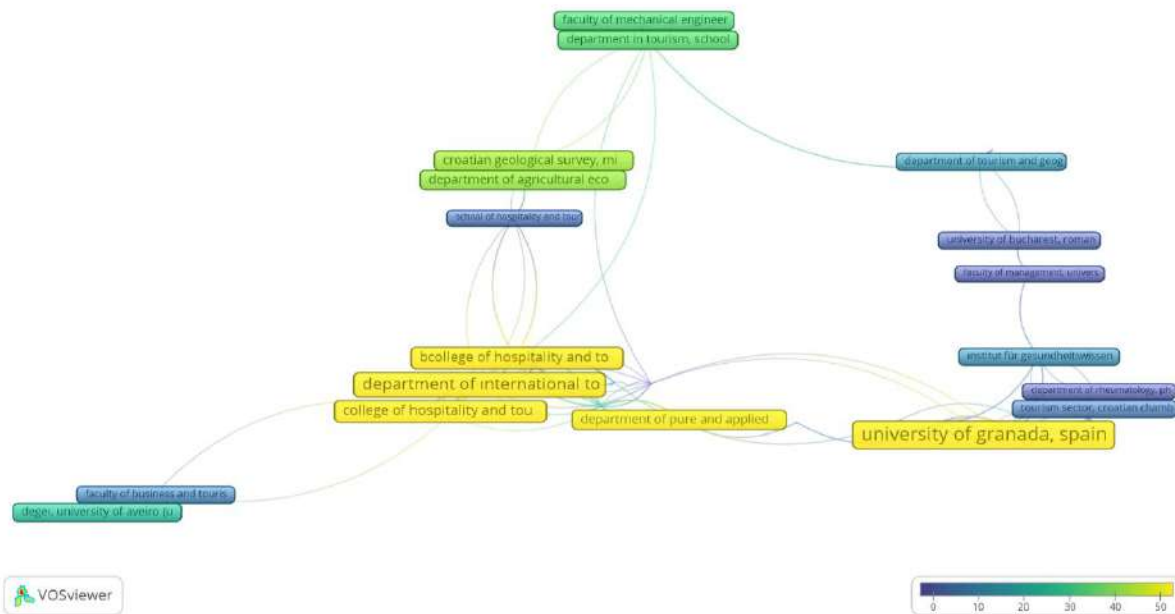
Note: The visual was created with the 24 items most closely related to each other out of 40 countries.

According to the analysis results and Figure 4, Spain ranks as the most cited country in SPA tourism research, with 16 publications and 327 citations. (In VOSviewer visualizations, node colors are usually determined by the average citation score (ACS), not by the total citation count (TC) (Van Eck & Waltman, 2010). Therefore, a country with the highest total citation count may be colored closer to green than yellow if its average citation score is lower. Spain: 16 publications → 327 citations → ACS: 20.4; United Kingdom: 9 publications → 307 citations → ACS: 34.1). Following Spain, other countries ranked by citations include: the United Kingdom with nine publications and 307 citations, Hungary with eight publications and 272 citations, South Korea with four publications and 167 citations, Hong Kong with one publication and 154 citations, Serbia with 14 publications and 135 citations, Poland with 17 publications and 129 citations, Romania with 28 publications and 98 citations, Italy with six publications and 73 citations, Croatia with five publications and 71 citations, the United States with three publications and 59 citations, Canada with three publications and 51 citations, Slovakia with 9 publications and 50 citations, and Turkey with four publications and 46 citations. According to Suban (2023) and the analysis conducted within the Scopus database, the United States is the leading country in wellness tourism literature, with 59 publications. It is followed by Australia with 36 publications, and both India and the United Kingdom, each with 25 publications. Additionally, China has made a significant contribution to this field with 23 publications.

The findings from this study reveal a significant difference between the countries contributing directly to spa tourism research and those contributing to wellness tourism. While Spain leads in spa tourism with 16 publications and 327 citations, the United States, which dominates the wellness tourism literature with 59 publications, shows a more limited presence in spa tourism, with only three publications and 59 citations. This discrepancy suggests that research themes within wellness tourism may vary significantly across different countries and regions.

### **2.5. Institutional Citation Analysis**

For institutional citation analysis, a minimum threshold of one publication and zero citations was set, resulting in the analysis of 301 institutions.



**Figure 5: Results of Institutional Citation Analysis**

Note: The program generated the visualization based on the largest cluster of interconnected elements, consisting of 96 items from 301 institutions.

According to the analysis results and Figure 5, when institutions are examined in terms of citations, the University of Granada (Spain), with two publications and 220 citations, ranks as the most cited institution. The University of Pécs (Hungary), with two publications and 187 citations, ranks second, followed by the Department of Tourism and Hospitality (Taiwan), which ranks third with one publication and 154 citations.

In the study by Suban (2023), the universities contributing the most to the wellness tourism literature were identified. According to the analysis, the University of Delaware (USA) and Itä-Suomen Yliopisto (Finland) stand out as the most active institutions, each with 9 publications. These are followed by the Alfred Lerner College of Business and Economics (USA), with eight publications, and both Purdue University (USA) and Ritsumeikan Asia Pacific University (Japan), each with seven publications. These universities have made significant contributions to academic research in the field of wellness tourism. Table 2 presents the Institutional Citation Analysis Results in an organized manner.

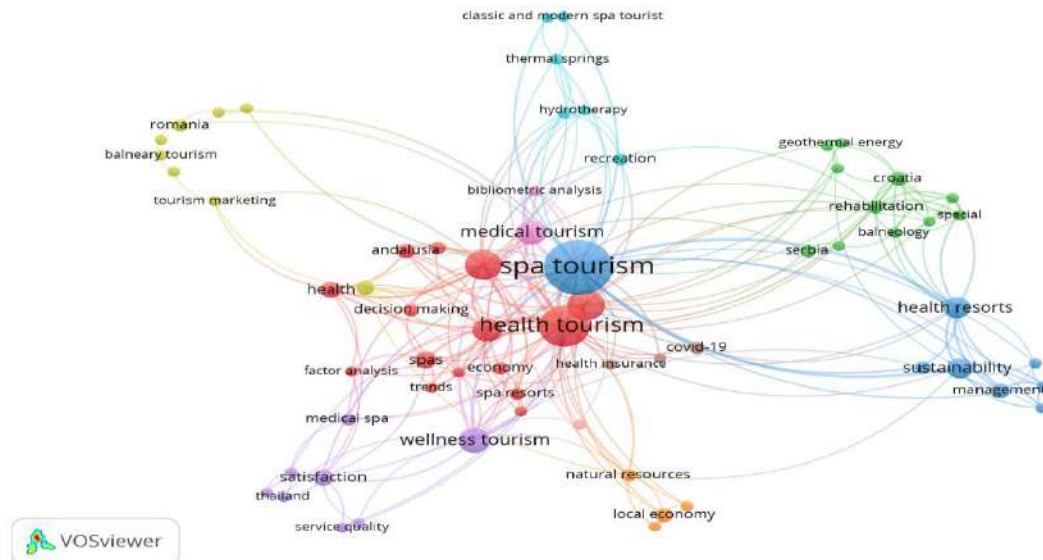
**Table 2: Institutional Citation Analysis Results**

Rank	Institution	Number of Documents	Number of Citations
1	University of Granada, Spain	2	220
2	University of Pécs, Hungary	2	187
3	Department of Tourism and Hospitality, Tamkang University, Lanyang Campus	1	154
4	School of Hotel and Tourism Management, The Hong Kong Polytechnic University, Hong Kong	1	154
5	School of Management, University of Surrey, Guildford, United Kingdom	1	154
6	Department of International Tourism, Dong-A University, Busan, South Korea	2	137
7	College of Hospitality and Tourism Management, Sejong University, 98 Gunja-dong, Gwanjin-gu, Seoul, South Korea	1	76
8	Department of Organization and Management, Institute of Economy and Informatics, Silesian University of Technology, Gliwice, Poland	3	76
9	Dept. of Food Service Management, Youngsan University, Busan, South Korea	1	76
10	School of Tourism, Leisure and Hospitality, BKF University of Applied Sciences, Budapest, Hungary	1	63

Source: Compiled by the author from VOSviewer analysis.

## 2.6. Keyword Analysis

During the analysis, when the minimum occurrence threshold was set to two, 67 out of the 496 keywords met this criterion. Table 3 and Figure 6 present data on the most frequently used keywords in spa tourism.



**Figure 6: Results of Keyword Analysis**

Note: The program generated the visualization based on the largest cluster of interconnected elements, consisting of 66 items from 67 keywords.

**Tablo 3. Top 15 Keywords by Occurrence and Link Strength in SPA Tourism Research**

Keyword	Occurrences	Total Link Strength
Spa tourism	56	80
Health tourism	31	65
Tourism	17	30
Spa	16	40
Wellness tourism	12	27
Medical tourism	11	28
Wellness	10	25
Health resorts	9	31
Sustainability	8	24
Spas	6	13
Health	5	15
Satisfaction	5	14
Croatia	4	17
Management	4	12
Well-being	4	12

Source: Compiled by the author from VOSviewer analysis.

According to the data in Table 3, the most frequently used keywords are spa tourism (56 times), health tourism (31 occurrences), tourism (17 occurrences), spa (16 occurrences), wellness tourism (12 occurrences), and medical tourism (11 occurrences). In terms of link strength, spa tourism (80) and health tourism (65) have the highest values. According to Figure 6, the clustering analysis results show that keywords are grouped around different themes. The blue cluster is associated with spa tourism, health facilities, sustainability, and management. The red cluster includes topics such as health tourism, medical tourism, economy, health insurance, and the impact of COVID-19. The green cluster focuses on geothermal energy, balneology, rehabilitation, and specific destinations (Croatia, Serbia). The yellow cluster is centered on tourism marketing, balneary tourism, and destinations such as Romania and Andalusia. The orange cluster examines the relationship between local economy, natural resources, and health tourism, while the purple cluster encompasses wellness tourism, customer satisfaction, service quality, and well-being. These findings highlight the key themes in spa and health tourism research and their interconnections.

Similarly, Aluculesei et al. (2021) analyzed the research interests of authors in the medical spa field and identified the most frequently used terms from titles and abstracts, including "patient" (652 occurrences), "balneotherapy" (244 occurrences), "quality" (209 occurrences), "hot spring" (208 occurrences), and "pain" (182 occurrences). These findings reflect a strong focus on the therapeutic and medical aspects of spa research, such as patient care, balneotherapy methods, and the role of natural resources like hot springs.

Comparing these analyses, it becomes evident that spa tourism research encompasses both tourism-related aspects (e.g., destination, experience, and sustainability) and medical dimensions (e.g., therapy, patient outcomes, and natural healing resources). This dual focus demonstrates the interdisciplinary nature of the spa field and highlights its importance in both health and tourism studies.

### 3. CONCLUSIONS AND RECOMMENDATIONS

This study provides a comprehensive bibliometric analysis of spa tourism research, examining key trends, influential contributions, and thematic structures within the field. By analyzing 174 documents indexed in the Scopus database from 1990 to 2024, this research identifies core publications, leading authors, prominent journals, contributing institutions, and country-level participation in spa tourism literature. The keyword clustering analysis further highlights the interdisciplinary nature of the field, demonstrating its connections to health tourism, medical tourism, sustainability, wellness, and economic development.

The findings reveal that spa tourism research is expanding but remains underexplored compared to broader wellness and health tourism studies. While countries such as Spain, the United Kingdom, Hungary, and South Korea play a significant role in spa tourism research, the United States, a leader in wellness tourism, has a relatively limited contribution to this subfield. Similarly, institutional contributions remain concentrated in select universities, with the University of Granada and the University of Pécs standing out as key contributors.

The bibliometric analysis indicates that sustainability, customer satisfaction, service quality, and health benefits are becoming increasingly relevant in spa tourism research. However, studies focusing on technological advancements, digital transformation in spa services, and personalized wellness solutions remain limited.

While European countries dominate spa tourism research, contributions from Asia, the Americas, and Africa remain relatively low. Future studies could explore regional variations in spa tourism trends, particularly in emerging markets.

Despite the increasing economic impact of spa tourism, scientific studies remain scattered and lack coherence. There is a lack of comparative studies evaluating the differences in spa tourism offerings, consumer behavior, and policy approaches across countries. Additionally, longitudinal studies analyzing trends over time could enhance understanding of the field's evolution.

### *Recommendations for Future Research*

- Future bibliometric studies should incorporate data from multiple databases such as Web of Science, PubMed, and Google Scholar to provide a more comprehensive perspective on spa tourism research.
- There is a need for comparative analyses between different spa tourism destinations to identify best practices, competitive advantages, and consumer preferences across regions.
- With the rise of digital wellness platforms, AI-driven spa recommendations, and virtual wellness experiences, future research should explore the role of technology in spa tourism development.
- Given the increasing emphasis on sustainable tourism, research should focus on eco-friendly spa facilities, water conservation in spa resorts, and green certification standards.
- More studies should analyze the economic impact of spa tourism, investment opportunities, government policies, and regulatory frameworks to support industry growth.

This study contributes to the academic literature by mapping the landscape of spa tourism research, identifying key themes, and highlighting existing gaps. The findings indicate that while spa tourism is a rapidly growing sector, it still requires more scientific attention to establish a solid theoretical foundation. Future research should adopt a more interdisciplinary and global approach, integrating perspectives from health sciences, digital innovation, and sustainability to fully capture the evolving dynamics of spa tourism.

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## **Current Problems and Solution Suggestions of Private Hospitals and Clinics Operating in the Field of Medical Tourism**

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### **Abstract**

Since the health tourism sector is a growing sector from the past to the present day, it has become an important item in terms of countries. Increasing the participation of hospitals in this area is about developing issues taking into account the appropriate arrangements and factors influencing health tourism. This study aims to provide an overview of medical tourism in the field of health tourism services in private class A - B hospitals and class C clinics, assess the current reproduction of the health tourism sector, study the maintenance such as process services and study the visitors coming with medical tourism to class A and B private hospitals and class C clinics. It was made

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to reveal the views that are effective in people's preferences. The research was conducted using the interview technique based on the qualitative research method. A total of 29 health tourism related health information within the scope of the research were reviewed and MAXQDA Analytics Pro program was used in data analysis. This study established that hospitals and clinics struggle with problems resulting from legal obstacles and competition, and proposed solutions in the form of state support and legal regulations. Hospital human resources studies identified staffing problems and recommended staff training. Hospital problems were identified in hospital infrastructure, and it was proposed to open new departments for investment purposes. State organizations identified problems with financial incentives for hospitals and suggested improvements at the state level. It has been determined that health tourists have problems arising from hospitals, patients and Türkiye, and hospital- and state-based solutions have been suggested. It has been determined that health managers interested in health tourism encounter problems arising from patients and personnel, and hospital-based solutions have been suggested. The identified problems and solution suggestions are valid only in the hospitals and clinics within the sample. Although the findings can be partially transferred to similar situations, new studies should be conducted with larger samples and different hospitals and clinics.

**Keywords:** Medical tourism, hospitals, the problems of medical tourism

## INTRODUCTION

The importance of the tourism sector is increasing worldwide. Today, people travel not only to see new places but also to receive medical treatment, which has led to the emergence of health tourism. Health tourism allows people to seek medical solutions beyond the prices and services of their home country; they can travel to countries that offer the highest quality options for treatment, accommodation, and healthcare services (Boz, 2004). According to these definitions, the act of changing cities or countries for medical treatment, sometimes combining both treatment and vacation, is called "health tourism" (Aydın, 2012). Health tourism encompasses not only curative services but also preventive, developmental, rehabilitative, and aesthetic treatments. Türkiye ranks highly globally among countries with its accredited institutions, newly constructed and advanced hospitals, and therapeutic thermal locations. Türkiye's strategic location near the countries of the Middle East and Asia as well as Europe, its ease of access, and its quality due to its educated and young population make it a preferred destination (Doğan & Aslan, 2019).

The services offered by health tourism are divided into health services, treatment services, and rehabilitation services. In the health services area, services such as SPA, lifestyle/health vacations, nature tourism, ecotourism, community tourism, herbal remedies, and complementary

treatments are considered. Optional surgeries, cosmetic surgeries, joint treatments, cardiac services, eye surgeries, diagnostic services, and cancer services are considered treatment services. Rehabilitation services also include dialysis, addiction treatment programs, and elderly care programs (Gonzales et al., 2001).

In the field of health, tourism is divided into different types according to people's needs.

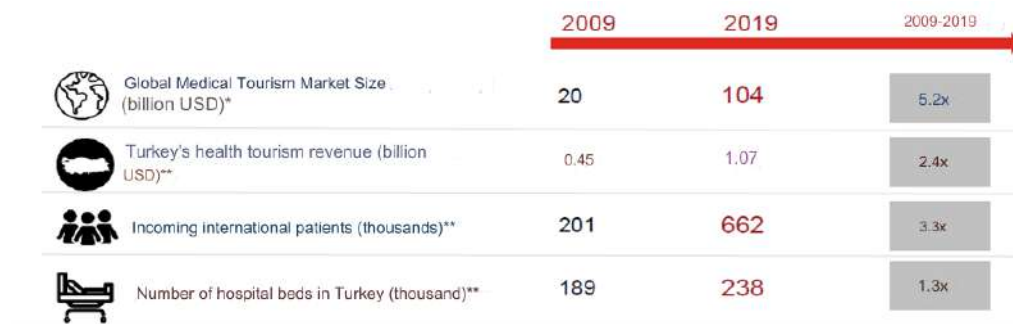
These types are:

- Medical Tourism
- Thermal and SPA-Wellness Tourism
- Advanced Age and Disability Tourism

While medical tourism includes surgical interventions and medical practices, Thermal tourism and Spa-Wellness tourism includes people seeking healing and wellness with thermal waters. Advanced Age and Barrier-free tourism covers individuals with physical or mental limitations who want to spend the rest of their lives in other places and receive quality care services (Yaba, 2022).

### Türkiye's Healthcare Services and Medical Tourism Capacity

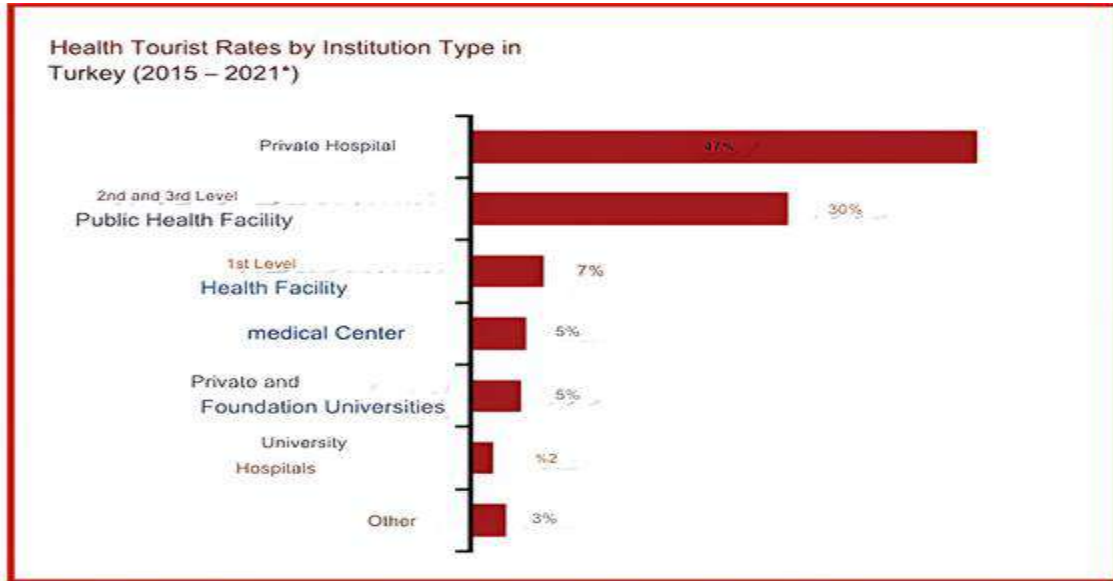
Türkiye has made significant progress in medical tourism thanks to successful strategies and infrastructure investments prior to the COVID-19 pandemic. The realization of Türkiye's medical tourism goals is closely linked to the development of the medical device and pharmaceutical markets (Özkan, 2019).



**Figure 1: Medical tourism market size (Ministry of Health, 2023)**

To stand out as a brand, it is necessary to increase recognition in both price and quality. This can be achieved by emphasizing the quality of service offered to customers and combining it with reasonable pricing policies. Additionally, a special promotion and brokerage model can be created for public hospitals, especially city hospitals, to collaborate with the public sector and

reach a wide range of patients. In conclusion, increasing brand awareness, strengthening competitive advantage, and effectively implementing sectoral strategies are important for success in the healthcare sector. By bringing these elements together, the institution's leadership in the healthcare sector is ensured (Amcham Turkey, 2021). A comparison of the market sizes of medical tourism is made in Figure 1.



**Figure 2: Ratios of health tourists by type of institution in Türkiye (Ministry of Health, 2023)**

In Türkiye, it is stated that private hospitals are the most service-providing institutions with a rate of 47%, while 2nd and 3rd level public health facilities also play an important role with a rate of 30% (Amcham Turkey, 2021). Figure 2 shows health tourist rates by institution type in Türkiye

There are a total of 1,205 authorized healthcare facilities and 211 authorized intermediary institutions in our country, the majority of which are in the private sector. This information indicates the existence of 1,205 authorized healthcare facilities participating in health tourism activities within the scope of the "International Health Tourism and Tourist's Health Regulation." An international health tourism facility can directly accommodate international health tourists who apply directly. However, if intermediary activities are necessary, a protocol must be established with an international health tourism organization authorized by the Ministry. This information indicates that the health tourism infrastructure is primarily concentrated in the private sector and that there are many facilities operating in this field (Amcham Türkiye, 2021).

## Türkiye Health Tourism Data

It is observed that health tourism is increasingly important for the Turkish economy. Among the main reasons for this increase are long waiting times and high treatment costs in developed countries. Health tourism was preferred by 551,748 people in 2018, while this number increased to 662,087 in 2019. However, in terms of revenue, while it was 1 billion 110 million 843 thousand dollars in 2018, there was a decrease in this revenue in 2019 and it was recorded as 1 billion 65 million 105 thousand dollars. The main reason for this decrease is the Covid-19 pandemic that emerged worldwide. Its impact on health tourism became more pronounced in 2020 and 2021. Due to the pandemic, Türkiye hosted 388,150 patients in 2020, earning 548 million 882 thousand dollars, and in 2021, it provided health services to 642,444 patients, showing a significant increase compared to the previous year, and earned 1,048,549,000 dollars (USHAS, 2020). In 2022, health tourism became a sector where a total of 1,258,382 people preferred to receive health services in the country. The revenue generated during this period was recorded as 2,119,059 thousand US dollars. These figures show that Türkiye is still an attractive destination for health tourism and that growth in the sector continues (USHAS, 2020). In the first two quarters of 2023, a total of 746,290 people came to our country to receive health services, and the revenue generated from this was 1,033,942 thousand US dollars (USHAS, 2020).



**Figure 3: Health Tourism Revenues (Thousand USD) (TurkStat, 2022)**

The clinic branches most preferred by international patients are respectively; Gynecology, internal medicine, ophthalmology, medical biochemistry, general surgery, dentistry, orthopedics and traumatology, infectious diseases, and ear-nose-throat. Although not clearly reflected in

official data, the prevalence of Hair Transplantation, Plastic and Aesthetic surgical procedures is also known and followed by the sector (Öcel & Karaca).

The study conducted by Sevim and Sevim (2019) reveals that the majority of patients coming to Türkiye are from countries such as Libya, Iraq, and Azerbaijan. Factors influencing the choice of these patients include the relatively weak health services in their countries compared to Türkiye, religious and cultural similarities, and easy access to Türkiye. Particularly, it is stated that these patients prefer Türkiye due to quality and access issues in healthcare services. Additionally, religious and cultural similarities play an important role in patients' preference for Türkiye. Türkiye's proximity to countries such as Libya, Iraq, and Azerbaijan is another factor that makes it attractive for patients from these countries. The study also indicates that 54.6% of patients have visited Türkiye for medical tourism purposes at least twice. This indicates that Türkiye is a reliable and preferred destination for health tourism.

Hospitals and healthcare institutions in Türkiye have improved their infrastructure by emphasizing international quality and standard certifications, updating medical equipment and techniques using the latest technology, and granting citizens the right to choose their doctors. These improvements and innovations in the healthcare sector have led to greater satisfaction among citizens with healthcare services and their preference for these services. The satisfaction rate with healthcare services, which was 55.3% in 2005, increased to 72.3% in 2015 with the improvements made. This increase highlights Türkiye's success in the healthcare sector and citizens' access to higher quality healthcare services domestically. Developments in Türkiye's healthcare infrastructure have contributed to a decrease in the number of citizens going abroad for health tourism (Kılınç, 2017).

There are several reasons why Türkiye has become a pioneer in medical tourism. These include the presence of quality and technologically advanced hospitals in the country with ISO-9001 certification, ease of transportation and proximity, the ability to purchase quality medical services at affordable prices due to exchange rate differences, the employment of highly experienced, qualified, and proficient in foreign languages doctors and healthcare personnel, and the similarity of Türkiye's medical system model to that of the United States, which significantly influences the country's success in the medical tourism market (Çınar & Özkaya, 2020).

Türkiye's prominence in healthcare services is supported by several reasons such as having reliable and good doctors, a solid infrastructure, and up-to-date healthcare technologies (Sülkü,



2017). Health tourism in Türkiye has hospitals with certifications in different categories to provide quality services. Foreign patients coming to our country for tourism place importance on quality standards and hospitals' JCI accreditation documents. As of 2019, there were 44 JCI-certified institutions in Türkiye. By 2022, the number of accredited institutions had increased to 112. Türkiye ranks highly in the world rankings in terms of accredited institutions (SAYA Akademi, 2019).

### **Medical Tourism in Türkiye**

Türkiye has experienced healthcare personnel that contribute to its prominence in medical tourism. Experts and qualified healthcare personnel in the healthcare sector provide a service that complies with international standards to ensure patients are treated safely and effectively. Additionally, healthcare institutions with modern medical infrastructure such as city hospitals offer healthcare services distinguished by the use of advanced technology. Türkiye's collaboration between the government and the private sector to support medical tourism also enhances its success in this field. Türkiye has implemented various policies and practices to promote and develop medical tourism. In this context, it offers a price advantage of 50-60% compared to European countries. Türkiye attracts medical tourists by providing a more economical option while offering the same quality healthcare services. Factors such as short waiting times, the ability to quickly schedule appointments, and effective treatment planning also contribute to its attractiveness (Sevim, 2019).

### **Benefits of Health Tourism**

Health tourism is one of the rapidly growing and significant potential subsegments of the tourism industry. One of the factors triggering this growth is the more cost-effective healthcare services in some countries (Henama, 2014). In this regard, health tourism contributes significantly to countries. The benefits of health tourism can be categorized into two main groups: tangible and intangible benefits. Among the tangible benefits, the contribution of foreign tourist revenues to the economic prosperity of countries plays a significant role. Additionally, health tourism increases technology and knowledge exchange between countries, develops strategic partnerships, and provides the opportunity to offer better services to domestic patients in the international competitive environment. Among the intangible benefits, health tourism contributes to technology and knowledge transfer between countries and provides opportunities for foreign patients. This demonstrates that health tourism is not only an economic phenomenon but also contributes to international cooperation and development in the field of healthcare services at the international

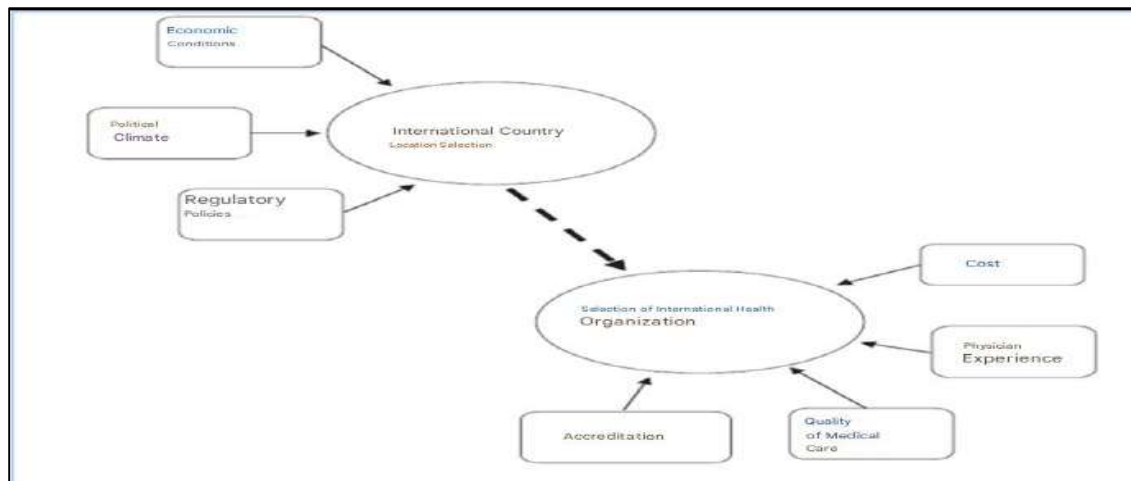
level (Özsarı & Karanata, 2013). Among the intangible benefits, sharing social and cultural experiences, contributing to the development of international relations, developing global medical marketing and trade, gaining competitive advantage, strengthening public-private partnerships in the health field, increasing patient satisfaction in many aspects, and gaining international acceptance of medical treatments stand out. Health tourism strengthens the image of countries as global healthcare providers, reinforcing the perception of providing world-class healthcare services, and enabling better coordination among hospital support services. This demonstrates the wide range of health tourism as a phenomenon that not only contributes economically but also enriches culturally and socially (Yalçın, 2006).

### The Negative Aspects of Health Tourism

In addition to the benefits, there are also disadvantages of health tourism. Some governments and insurance companies do not pay for health services obtained from abroad, so patients have to pay for the services themselves. Since patients usually return to their countries a few days after the surgery, they have to meet any side effects, complications, or post-operative care needs in their own countries. In many countries, there is a lack of sufficient laws regarding medical errors known as medical malpractice, so local courts may not provide adequate assistance in medical malpractice cases (Özsarı & Karanata, 2013).

### Factors Affecting the Provision of Health Tourism Services in Hospitals

To ensure the sustainability of hospital operations and to maximize the benefits for both the hospital and the patient, it is necessary to carry out the necessary work and improvements in institutions that provide health services.



**Figure 4: Factors Influencing Medical Institution and Destination Selection**

This figure shows the main factors that individuals looking for international healthcare consider when choosing a country and healthcare institution. The figure covers two main selection stages:

### 1. International Country Location Selection

Three main factors stand out in individuals and health tourists' choice of a country:

**Economic Conditions:** The general economic situation of the country, exchange rates and the cost of accessing healthcare services are among the important factors affecting the selection process.

**Political Climate:** The political stability and security situation in the country can be decisive in the decisions of health tourists.

**Regulatory Policies:** The incentives offered by the government in the field of health tourism, legal regulations and policies regarding patient rights play a role in the choice of destination.

### 2. Selection of International Health Institution

After a country is selected, patients evaluate the following factors when choosing a particular healthcare institution in that country:

**Cost:** The total cost of treatment and care services plays a major role in patients' decisions.

**Physician Experience:** The specialization areas, experience and whether or not doctors have international accreditations are important factors in patient selection.

**Quality of Medical Care:** The technological infrastructure of hospitals, patient satisfaction and service quality are among the elements taken into consideration.

**Accreditation:** Healthcare institutions with internationally valid accreditations are preferred more by patients.

To develop in the field of health tourism, attention should be paid to certain issues. These issues are listed as follows:

- Staff fluent in foreign languages or staff responsible for translation,
- The health institution's emphasis on patient privacy,
- The cost of health services,
- The quality of health services,
- The accreditations of the health institution,
- Accessible marketing efforts,

- Experienced and reliable physicians,
- Good and reliable staff,
- Accessibility of the health institution,
- The infrastructure of the health institution.

### **Infrastructure in Hospitals**

In hospitals and clinical centers related to health tourism, infrastructure is of great importance. It should be ensured that individuals applying for health tourism receive quality and comfortable treatment services during their stay in the hospital. Treatment facilities and hospitals should have the physical infrastructure or access to the equipment that tourists may need (Altsoy, 2018).

The infrastructure of the hospital includes its capacity to apply advanced technology, ambulance services, intervention rooms, waiting rooms and circulation, clinical services of the laboratory, blood centers, meals, pharmacy, etc. (Derin & Demirel, 2013).

Looking at the factors determining the adequacy of infrastructure in health institutions (Yirik, 2014):

- Offices to assist tourists while providing treatment services to patients,
- Offices where health institutions can get information,
- Offices where tourists can receive translation services,
- Having a section for foreign patients within the institution,
- Cultural differences should be taken into consideration.

### **Quality and Accreditation in Hospitals**

The diversity of healthcare services and the quality of treatment processes are among the main reasons that increase treatment costs. The possibilities of quality in treatment processes vary depending on the complete determination of service standards, the provision of services in accordance with standards, and the pre-determination of incorrect practices (Babacan, 2023).

The criteria recommended by the American Medical Institute for high-quality healthcare services today are as follows (Ekici, 2013):

- Avoiding harmful situations,
- Being beneficial and effective,
- Providing patient-centered care,
- Providing services in a timely manner,

- Being fair and equitable.

### **Financing in Hospitals**

In the growing field of health tourism, one of the reasons why patients travel for treatment is that they can obtain the same services at a cheaper cost than in their home countries (Barca, 2012). Financial management in hospitals involves using their resources most efficiently and increasing the institution's value.

Financial management is of great importance for hospitals participating in health tourism (Babacan, 2023). Hospital financing is concerned with the continuity of the hospital and marketing the services it provides, establishing infrastructure for these services, and hiring personnel for translation if there are no staff proficient in foreign languages. One of the reasons why Türkiye ranks so high in health tourism is its affordable treatment prices. Although these prices vary from hospital to hospital, they are generally cheaper for tourists compared to their own countries. Effectively managing hospital finances is important for both the institution's continuity and health tourism. Offering quality services at affordable prices attracts the attention of health tourists.

### **Marketing and Sales Activities in Hospitals**

In recent years, health tourism has gained increasing popularity, bringing with it intense competition. There are important efforts that health institutions must undertake to ensure the flawless delivery of health tourism services. One of these efforts is sales and marketing activities (Kaptanoğlu, 2011). The impact of advertising, marketing, and sales activities on the development of tourism is significant. Therefore, it is important to clearly define the target market for health tourism. Europe is of great importance as a target market for health tourism. Organizing promotional and advertising activities in countries for promotional purposes is an important issue. Government support can be utilized in these areas (Aktepe, 2013).

The international health tourism market conducts marketing activities to attract tourists to the destinations targeted by medical tourism. Descriptions of services and quality levels in the health sector, as outlined by the goals of medical tourism, should be made, and the characteristics of demand in their target markets should be determined. Advertising, promotion, and distribution activities should be carried out accordingly. Using media to reach target audiences through informative websites, easily accessible and understandable advertising, and promotional activities is important. It is better for businesses advertising for these promotions to collaborate with

government agencies. For this marketing, theories should be developed, and research should be conducted on markets to develop brand-new products and opportunities (Kılınç, 2013).

## **1. RESEARCH METHODOLOGY**

In the study, the general views of health tourism of the health services of the A-B class private hospitals and C class clinics registered according to their investments and capacities for health tourism, the service process evaluations of the medical tourism sector and the factors that are effective in preferring A and B private class hospitals and C class clinics that come with medical tourism, were taken as the basis of this successful; qualitative research design case study.

The data obtained by applying the interview formula in the model framework from the factors in the literature, the ones reached within the scope of the research conducted with qualitative analysis and the ones who were wanted to be interviewed were selected with the convenience sampling, and 7 health managers of A Class private hospitals interested in health tourism, 15 health managers of B Class private hospitals interested in health tourism, 7 health managers of C Class clinics interested in health tourism, a total of 29 managers, were interviewed with semi-interviews and interruptions were made in order to reveal all the processes that play a role in the choices of preferences and expectations for medical tourism as much as possible.

The sample is considered sufficient as it was concluded that the saturation point was reached with the opinions of these participants in the interviews.

When participants' opinions were solicited, the percentages of the data were provided in the findings related to the Service Process Theme.

The audio obtained because of the interviews is cut and decrypted without any changes to the content by the person who made the recording. The interviews with the participants were analyzed with MAXQDA Analytics Pro, a computer-aided qualitative data analysis program.

## 2. ANALYSIS



**Figure 5: Code Cloud of Important Findings from Qualitative Analysis on Health Tourism in Private Hospitals and Clinics**

### Hospital Service Quality and Personnel

One of the most frequently mentioned themes in the code cloud is "Quality Personnel" and "Hospital Service Quality". Participants highlighted the significance of well-trained medical staff and high service standards in health tourism.

A hospital administrator stated: "Our hospital has internationally accredited doctors, which increases trust among foreign patients."

Another participant emphasized: "The satisfaction of international patients largely depends on the quality of healthcare personnel and their ability to communicate effectively."

### Challenges in Health Tourism: Language Barriers and Compliance Issues

Another key issue raised in the analysis is "Language Knowledge of Employees" and "Translator Support". The inability to communicate effectively with international patients negatively affects the patient experience.

A patient consultant shared their experience: "Many of our foreign patients require translators, but we don't always have enough staff available, which leads to misunderstandings."

A hospital manager suggested: "Providing foreign language training to healthcare staff would significantly improve patient satisfaction and operational efficiency."

### Marketing and Advertising in Health Tourism

The themes "Increasing Advertisements and Promotions" and "Digital Advertising" indicate the need for better marketing strategies in attracting international patients.

A marketing executive stated: "Compared to other countries, our hospitals do not utilize digital advertising effectively. Many potential patients are unaware of the affordable and high-quality treatments we offer."

Another participant added: "There should be more collaboration between healthcare providers and international travel agencies to promote medical tourism."

#### Infrastructure and Accessibility Issues

The terms "Low International Access" and "Capacity Insufficiency" suggest significant barriers in hospital infrastructure and accessibility for international patients.

A medical tourism coordinator mentioned: "Even though we offer high-quality services, international patients face difficulties in reaching our hospitals due to visa issues and limited direct flights."

Another hospital administrator noted: "Our hospital lacks enough specialized departments to accommodate the increasing demand from international patients."

#### Future Recommendations and Industry Improvements

Based on these findings, several recommendations can be made to improve health tourism services:

**Enhancing Foreign Language Training:** Healthcare personnel should receive language training to improve patient communication.

**Strengthening International Marketing Strategies:** More emphasis should be placed on digital marketing and collaborations with foreign health institutions.

**Improving Infrastructure and Accessibility:** Easier visa procedures and better flight connectivity should be developed for medical tourists.

**Expanding International Collaborations:** Hospitals should work closely with global insurance providers and intermediary institutions to streamline patient processes.

The distribution of participant expressions according to intensity is shown in Figure 5. The codes shown in larger font indicate more intensively used expressions, while those in smaller font indicate less intensively used codes.



### Thematic Representation of Findings

As seen in Figure 6, the findings are grouped under 3 themes. These are macro view, opinions regarding the current situation of the sector, and service process.

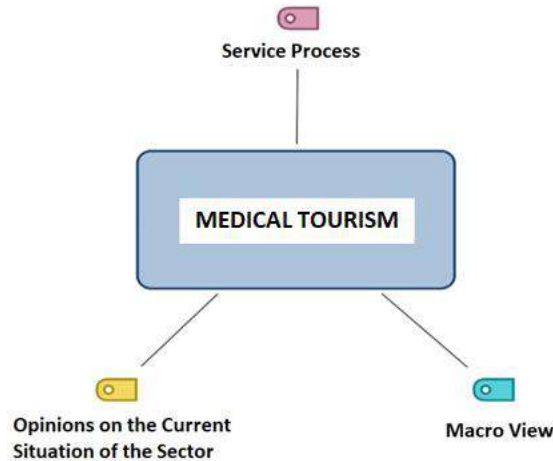


Figure 6: Representation of Themes

### Findings Related to the Macro View Theme

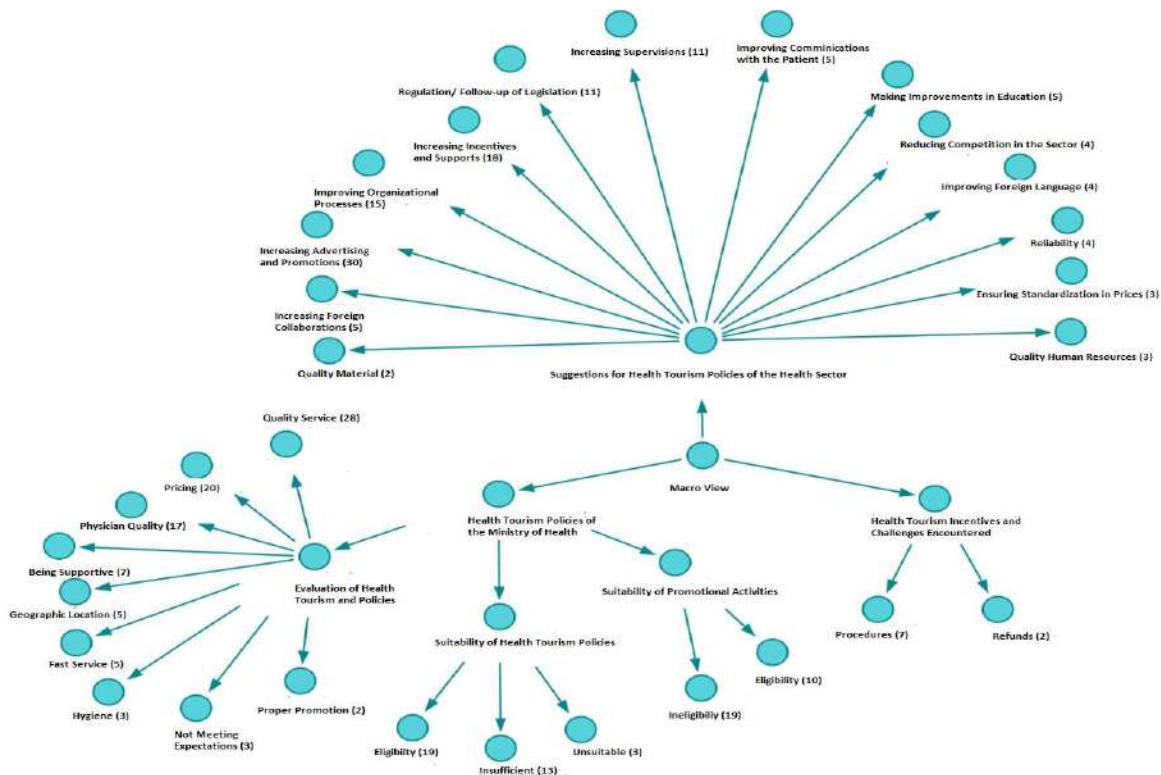


Figure 7: Hierarchical code-subcode representation of the Macro View theme

Within the scope of the research, 3 categories belonging to the theme of "Macro Perspective", which is one of the themes addressed within the scope of the research, were formed in Figure 7.

These are; health tourism policies of the Ministry of Health, recommendations to health tourism policies of the health sector, health tourism incentives and difficulties encountered.

### **Health Ministry's Health Tourism Policies**

Under the category of Health Ministry's Health Tourism Policies, 3 codes have been created. These are: evaluation of health tourism and policies, appropriateness of health tourism policies, appropriateness of promotional activities.

### **Evaluation of Health Tourism and Policies**

Under the code Evaluation of Health Tourism and Policies, participants have mentioned 9 different sub-codes. These are: quality of service, pricing, quality of physicians, geographical location, fast service, supportiveness, hygiene, meeting expectations, correct promotion.

### **Appropriateness of Health Tourism Policies**

Under the code Appropriateness of Health Tourism Policies, participants have mentioned 3 different sub-codes. These are: being appropriate, being inadequate, not being appropriate. Some participants also expressed the view, *"I find it appropriate but I think efforts should be increased to further develop it."*

### **Appropriateness of Promotional Activities**

Under the code Appropriateness of Promotional Activities, participants have mentioned 2 different sub-codes. These are: being appropriate, not being appropriate.

*"Turkey needs to organize campaigns and promotions to promote itself as a health destination. Trade, tourism, health, and USSAŞ should also promote themselves. Turkey is a very successful destination in the world; with physician quality, current technology, service quality, price-quality balance, it is a very correct destination in terms of price-benefit equation. If we talk about these, there should only be promotions that show Turkey's direction in health services, and at this point, we can say that Turkey is not even at zero in this regard. When done, it will be an area that will make a difference in the world. Policies, vision, strategies have been created but there are always shortcomings." This view of not being appropriate has been evaluated as a clear description of the opinion.*

## Recommendations for Health Tourism Policies in the Healthcare Sector

Under the category of Recommendations for Health Tourism Policies in the Healthcare Sector, 14 codes have been created. These are: increasing advertising and promotion, increasing incentives and support, improving organizational processes, increasing inspections, regulating/following legislation, improving communication with patients, increasing international collaborations, making improvements in education, reducing competition in the sector, improving foreign language proficiency, reliability, standardizing prices, quality human resources, quality materials.

*"Increasing inspections and possibly differentiating institutions that can perform Health Tourism."*

*"Monitoring the policies they create."*

*"I believe that the satisfaction level of patients should be measured, i.e., creating an environment where patients can express their feelings and thoughts after treatment."*

*"Increasing international collaborations of foundation universities providing education in the health field, advantages for the establishment of special zones and complexes for health tourism (tax, grant, land allocation, etc.)"*

*"Professional standards can be developed, academic training on health tourism can be organized in relevant departments of universities, efforts can be made to improve foreign language proficiency for stronger communication and patient satisfaction."*

*"I believe that there should be joint action, that there are values lost due to competition, and that health tourism should not only bring financial gains but also benefits to our country and hospitals in every aspect."*

*"Providing foreign language and orientation in a good way (for the whole team)."*

*"Trustworthy, auditable, and accurate service."*

*"Regulating price competition in line with the interests of the country and setting a minimum price instead of a maximum price, ensuring standardization."*

*"Developing the qualifications and quantity of personnel working in health tourism."*

*"Being able to provide quality materials"* are the evaluations highlighted by the participants.

## Health Tourism Incentives and Challenges

Under the category of Health Tourism Incentives and Challenges, 2 codes have been created. These are: procedures and reimbursements.

*"Preparing quite a lot of bureaucratic paperwork is necessary to benefit from the incentives. Simplifying the process in this regard reduces the difficulties." and "In general, we benefit. But I think this scope should be expanded a bit more and reimbursements should be made faster."*

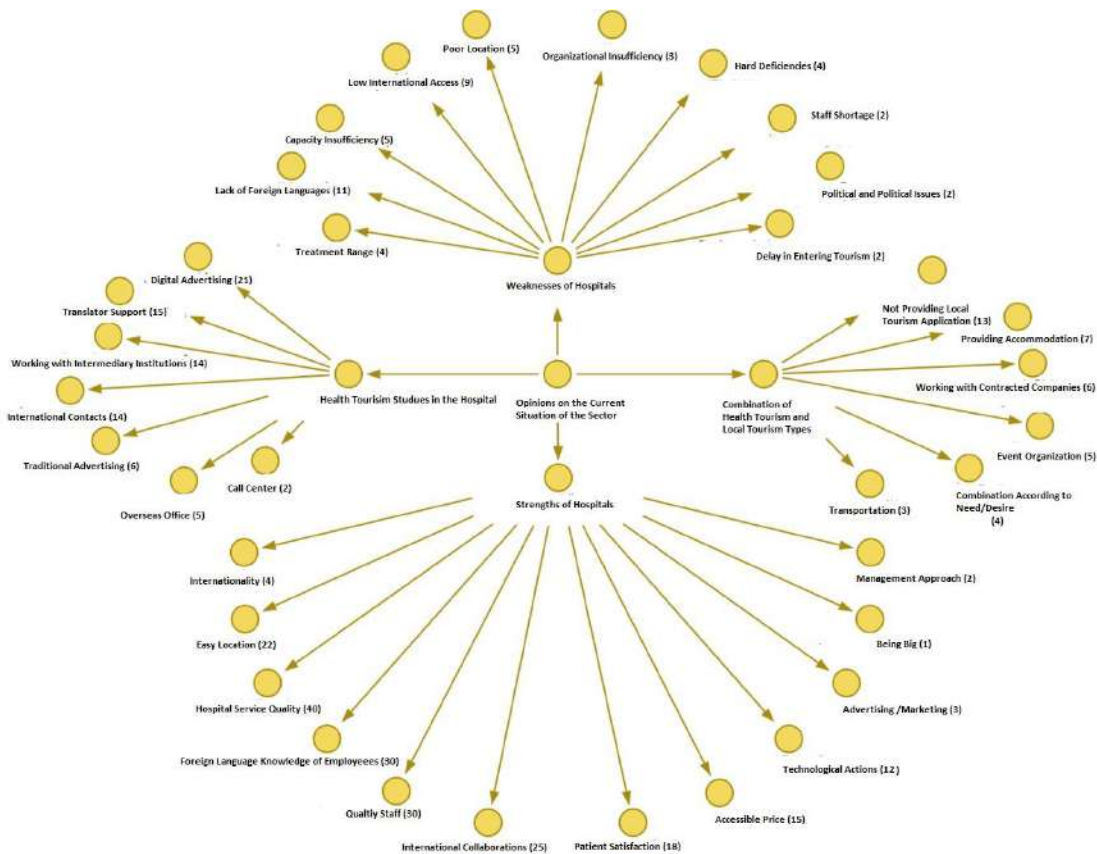
**Table 1: Frequency of codes in Macro view theme according to participant**

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	H21	H22	H23	H24	H25	H26	H27	H28	H29	H30	Σ
Macro View																															0
Health Tourism Policies of the Ministry of Health																															0
Evaluation of Health Tourism and Policies																															0
Quality Service	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	28	
Pricing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
Physician Quality	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17	
Geographic Location																														5	
Fast Service																														5	
Being Supportive	1	1																												3	
Hygiene																														3	
Not Meeting Expectations																														3	
Making Promotional Activities																														2	
Suitability of Health Tourism Policies																															0
Eligibility	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	
Insufficient	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	
Unsuitable																														3	
Suitability of Promotional Activities																															0
Ineligibility	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	
Eligibility	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	
Suggestions for Health Tourism Policies of the Health																															0
Increasing Advertisements and Promotions	2	1	1	1	1	1	2	2	2	2	2	1	1	1	2	1	1	1	1	1	3	1	1	1	2	1	2	1	1	30	
Increasing Incentives and Support	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	18	
Improving Organizational Processes	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
Increasing Inspections	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	
Regulation/Follow-up of Legislation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	
Improving Communication with the Patient	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Increasing International Collaborations																														5	
Making Improvements in Education																														5	
Reducing Competition in the Sector	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Improvement of Foreign Language	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Reliability																														5	
Ensuring Standardization in Prices	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Quality Human Resources	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Quality Material	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Health Tourism Incentives and Challenges Encountered																															0
Procedure																														7	
Refunds																														7	
Σ	12	13	10	7	8	7	8	10	9	9	7	9	7	8	12	6	8	13	14	17	11	6	11	12	11	6	7	7	8	283	

The Macro View theme was analyzed according to the participants. Accordingly, participants frequently mentioned the codes of quality service, pricing, and increasing advertising and promotions.

### Findings Regarding Opinions on the Current State of the Sector Theme

Four categories have been created for the theme of "Opinions on the Current State of the Sector," which is one of the themes addressed in the research (Figure 8). These are; the weaknesses of hospitals, strengths of hospitals, combination of health tourism with local tourism types, health tourism activities in hospitals.



**Figure 8: Hierarchical code-subcode representation of the theme of opinions on the current state of the sector**

### 1. Weaknesses of Hospitals

This category reveals the main problems in the health tourism sector:

#### Low International Access (8):

Participants stated that many private hospitals in Turkey do not have sufficient connections to manage the international patient flow. Problems experienced in patient transfers and visa processes were particularly emphasized.

#### Lack of Foreign Languages (13):

It was stated that there is difficulty in communicating with health tourists and that sufficient importance is not given to foreign language education of healthcare personnel.

#### Lack of Organization (10):

Participants stated that patient management and special service processes for international patients are not yet fully established.

### Political and Policy Problems (3):

Some participants emphasized that the constant change of health tourism policies and uncertainties in visa processes negatively affect the sector.

### 2. Strengths of Hospitals

This category reflects the competitive advantages of the health tourism sector:

#### Quality Health Personnel (10):

One of Turkey's greatest advantages in the field of health tourism is that it has well-educated and experienced health personnel.

#### Affordable Price (12):

Participants stated that the fact that health services in Turkey are more affordable compared to Europe and the US is an attractive factor for foreign patients.

#### International Collaborations (21):

It was emphasized that especially large private hospitals increase patient flow by making agreements with international insurance companies and health institutions.

#### Patient Satisfaction (15):

Participants stated that providing health services with a patient-focused approach increases patient satisfaction.

### 3. Integration of Health Tourism with Local Tourism Types

This heading discusses how health tourism can be integrated with other types of tourism:

#### Provision of Accommodation (7):

Participants stated that some hospitals provide special accommodation services for health tourists and that this improves the patient experience.

#### Transportation Services (3):

It was stated that the services provided by hospitals regarding airport transfers and urban transportation directly affect patient satisfaction.

#### Event Organization (3):

Participants stated that organizing cultural and social events for health tourists provides a more attractive experience for patients.

### **Weaknesses of Hospitals**

Under the category of Weaknesses of Hospitals, 10 codes have been created.

These are: lack of foreign language skills, limited international access, inadequate capacity, poor location, range of treatments, lack of equipment, organizational inadequacy, insufficient staff, political and policy issues, delay in entering tourism.

### **Strengths of Hospitals**

Under the category of Strengths of Hospitals, 12 codes have been created.

These are: employees' foreign language skills, hospital service quality, quality staff, international collaborations, convenient location, patient satisfaction, accessible pricing, technological actions, internationality, advertising/marketing, management approach and size.

### **Combination of Medical Tourism and Local Tourism Types**

Under the category of Combination of Medical Tourism with Local Tourism Types, 6 codes have been created. These are: not providing local tourism practices, providing accommodation, working with contracted companies, event organization, combination according to needs/preferences and transportation.

*"We can combine with local tourism according to the needs or preferences of the patient." (combination according to needs/preferences) and "We combine our treatment products with transportation and accommodation products. According to standard process procedures that can be fixed, we can include products in them."* are the issues highlighted by the participants.

### **Medical Tourism Activities in Hospitals**

Under the category of Medical Tourism Activities in Hospitals, 7 codes have been created. These are: digital advertising, interpreter support, working with intermediary organizations, international contacts, traditional advertising, foreign offices, call center.

*"We use all web and social media promotion tools,"*

*"Yes, thanks to our interpreters, we can provide services to our patients in their own languages very comfortably."*

*"We ensure that doctors are taken abroad to contact their counterparts or patients." "We organize outdoor advertising, billboards, TV, newspapers, magazines, but the most important promotion is to satisfy the patient, which attracts other patients." "We open offices and pre-diagnosis centers or clinics, even hospitals abroad." "Under the Turquality, we can plan all activities. Translator, foreign offices, call center, etc." has been expressed in health tourism activities in hospitals.*

**Table 2: Opinions on the Current State of the Sector According to Participant Profile**

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	H21	H22	H23	H24	H25	H26	H27	H28	H29	H30	Σ
<b>Opinions on the Current Situation of the Sector</b>																															
<b>Weaknesses of Hospitals</b>																															
Lack of Foreign Languages					1	1					1				1	2				1			1		1			1		2	
Low Intersectoral Access					1						1				1								1	1	1	1			1		
Capacity Insufficiency																							1								
Bad Location																															
Treatment Range	1																														
Hardware Deficiencies	1																														
Organizational Incompetence																															
Staff Shortage																															
Political and Political Issues	1																														
Delay in Entering Tourism																															
<b>Strengths of Hospitals</b>																															
Foreign Language Knowledge of Employees	1	1	1	1	2					1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hospital Service Quality	2	1	1	2	2	2	2	2	1	2	1	1			2	2	2	2			2	1	1	2	2		2	1	1	1	
Quality Staff	3	2	1	1	1	1		2	1	1	1	2			1	2	3	2	1			2		1			1	1	1	1	
International Collaborations	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Easy Location	3	1																													
Patient Satisfaction	1																														
Accessible Price	1																														
Technological Actions	3	1																													
Internationality																															
Advertising/Marketing																															
Management Approach																															
Being Big																															
<b>Combination of Health Tourism and Local Tourism Types</b>																															
Not Providing Local Tourism App	1																														
Providing Accommodation																															
Working with Contracted Companies																															
Event Organization																															
Combination According to Need/Desire																															
Transport																															
<b>Health Tourism Studies in the Hospital</b>																															
Digital Advertising	1																														
Translator Support	1																														
Working with Intermediary Institutions	1	2																													
International Contacts	1																														
Traditional Advertising	1																														
Overseas Office	1																														
Call Center																															
Σ	23	13	12	11	13	12	13	14	14	11	12	11	9	8	13	15	16	17	11	10	12	13	13	12	11	7	9	9	10	10	364

Opinions on the Current State of the Sector theme has been examined according to the participants. Accordingly, participants frequently mentioned hospital service quality, employees' foreign language skills, digital advertising, and international collaborations codes.

**Findings Related to the Service Process Theme**

Three categories have been created for the theme of "Service Process," which is one of the themes addressed in the research.

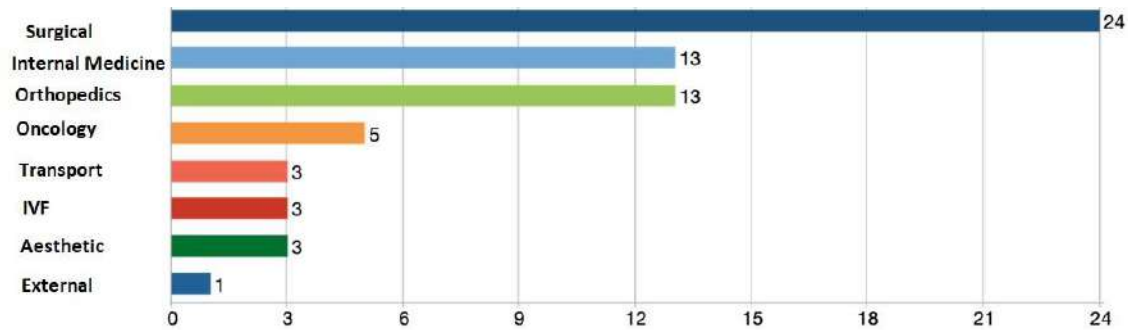
These are: post-procedure patient follow-up process, frequently visited branches for health tourism, and payment methods for patients.



### Post-procedure patient follow-up process

Under the category of Post-procedure Patient Follow-up Process, 3 codes have been created. These are: online follow-up, follow-up through health services in other countries, regular follow-up.

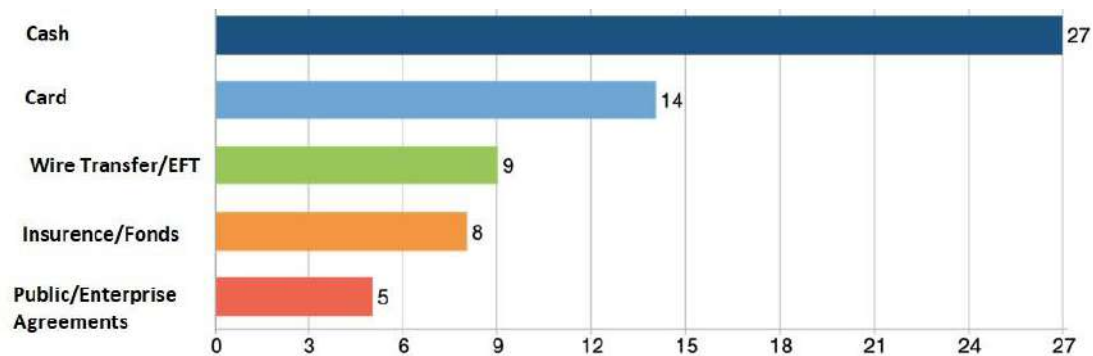
### Frequently Visited Branches for Medical Tourism



**Figure 9: Frequently visited branches for medical tourism**

Accordingly, surgery, internal medicine, and orthopedics are the most preferred branches.

### Patients' Payment Methods



**Figure 10: Patients' payment methods**

Accordingly, cash, card, and bank transfers are frequently used payment methods for patients coming for medical tourism.

**Table 3: Opinions on the Service Process According to Participant Profile**

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	H21	H22	H23	H24	H25	H26	H27	H28	H29	H30	Σ		
Service Process																																0	
Post Procedure Patient Follow-up Process																																	0
Online Tracking				1			1		1	1				1	1		1				1	1	1	1		1	1	1	1		1	14	
Follow-up Through Health Services in Other Country	1			1				1			1						1				1	1	1	1				1		1	1	12	
Regular Follow-up															1					1				1				1		1		5	
Branches Frequently Visited for Health Tourism																																0	
Surgical	1	1			1	1		1	1	1		1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	24		
Internal Medicine	1			1			1			1			1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	
Orthopedics		1			1		1					1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
Oncology				1	1					1			1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	
Transport				1						1				1																		3	
IVF		1					1							1																1	1	3	
Aesthetic																					1					1						3	
External																																1	1
Payment Methods of Patients																																	0
Cash	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
Card		1		1		1		1	1	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	
Wire Transfer /EFT				1						1											1	1	1	1	1	1	1	1	1	1	1	9	
Insurance/Funds	1				1			1					1									1	1	1	1	1	1	1	1	1	1	8	
Public/Enterprise Agreements	1											1									1	1	1	1	1	1	1	1	1	1	1	8	
	6	6	0	8	5	5	2	6	4	6	5	3	4	5	7	3	6	4	6	7	9	6	4	9	3	5	5	6	6	6	8	159	

The Service Process theme has been examined according to the participants. Accordingly, surgery, cash, online follow-up, and card codes are among the frequently mentioned codes.

### 3. DISCUSSION

In medical tourism many factors influence the quality of service.

First, when we look at the human factors, the knowledge, skills, and education level of healthcare workers, as well as their foreign language proficiency, along with the expertise of intermediaries and agency workers, directly affect the quality of service in health tourism. As frequently emphasized in the literature, human resources in institutions providing services in the field of health tourism are critically important, as highlighted in this study as well. In addition to medical competencies, some organizations need to adopt a management style suitable for international relations and cultural bridges as part of their management capacity. With the increasing competition in international health tourism markets, the intensity of domestic competition has intensified competition between organizations. Having a strong workforce both in medical and management areas will provide significant advantages for healthcare institutions (Sur, 2024). These factors align with the results found in our study. These views were also expressed by participants, overlapping with the "strengths and weaknesses" theme in the findings section.

Secondly, the physical factors of healthcare institutions in health tourism are important elements that directly affect the patient's experience and satisfaction during the treatment process.

A modern infrastructure, meeting hygiene and safety standards, being easily accessible, and prioritizing patient comfort make a healthcare facility attractive to health tourists. Additionally, the availability of accessibility options and special services that can meet the needs of patients from different cultures makes healthcare institutions preferred centers. Healthcare institutions aiming to gain a competitive advantage in the field of health tourism must adopt patient-centered and sustainable solutions in their physical structures (Sur, 2024). Physical factors, including the institution's equipment, infrastructure, the technology used, the quality of accommodation facilities, and hygiene conditions, directly affect service quality (Nicolaidis, 2011). These factors also align with the results of our study, and these views were expressed by participants, overlapping with the "strengths and weaknesses" theme in the findings.

The third factor determining the level of health tourism is the social factor. Among the social factors, the ability of an institution to introduce itself internationally, build trust, meet patients, organize relationship processes, manage transportation, take a moderate approach to cultural differences, and establish cultural bridges is essential. Social factors in health tourism are critical elements that influence the treatment process of patients and determine their level of satisfaction. Health tourists may face challenges such as cultural differences, language barriers, and social adaptation when in a foreign country. Therefore, it is crucial for healthcare institutions to provide a culturally respectful environment, offer multilingual support services, and be sensitive to social needs. Additionally, providing cultural adaptation, respecting patient rights, and offering psychological support services are key components of social factors. All of these social factors contribute to making patients feel safer in a foreign country and more satisfied with their healthcare experience, ultimately increasing the success of the health tourism sector (Nicolaidis, 2011).

The fourth factor that determines the level of health tourism is the organizational factor. Organizational factors in health tourism include effective management and organizational structure, qualified and trained personnel, patient relations and coordination units, quality management and accreditation standards, continuity of services, operational efficiency, communication and language support, and strategic planning and marketing. Among these, service quality, efficiency, and patient satisfaction play a decisive role. A well-structured organization in a healthcare institution ensures that patient care processes operate effectively and efficiently. In this context, an experienced management team, trained healthcare personnel, and operational procedures aligned with international standards help meet the needs of health tourists. Moreover,

professionally managed patient coordination makes it easier for foreign patients to adapt to the process, and collaboration among medical teams increases patient safety. Healthcare institutions with a strong organizational structure offer higher quality services, gain a competitive advantage internationally, and contribute to the growth of health tourism (source to be added). In terms of marketing channels and promotion, both traditional methods such as radio, television, and advertisements, as well as modern methods like social media and internet marketing, are of great importance. While traditional methods are still powerful, using the Turkish TV series industry for promotional activities can increase awareness. In the US, talk-show hosts and popular doctors featured in television programs have increased interest in aesthetic and cosmetic surgery. Similar efforts could be applied in Turkey. Furthermore, new studies should be conducted to address changing awareness in the areas of digital marketing and social media (Baysan, 2018). In Selvi's research, it was noted that healthcare institutions with high recognition and a positive image are not only preferred but also recommended by patients and their families to others. Turkey must also make efforts to increase its recognition and positive image in the sector (Selvi, 2012). Other significant factors that direct health tourists to seek healthcare in another country align with many features seen in Turkey. These include high-quality infrastructure and technological equipment at healthcare institutions, geographic location advantages, high-quality healthcare providers, the country's natural, historical, and cultural richness, adequate tourism, hotel, and transportation services, and diverse and affordable healthcare packages offered by hospitals (Aslan & Gün, 2018). Collaborating with overseas doctors in the medical tourism field and participating in international fairs and seminars, both privately and through government efforts, will contribute to the development of Turkey's health tourism sector. It will also be beneficial to take healthcare providers to these fairs and meetings, as this will increase communication and provide direct marketing opportunities (Alsharif et al., 2010). These views were also expressed by participants and align with the "current state of the sector" theme in the findings.

In a study by Dökmen (2019), the factors influencing patient preference were examined under two main categories: country selection and healthcare institution selection. In country selection, socio-economic status, political factors, regulations, and intermediary organizations are effective, while in healthcare institution selection, service quality, cost, communication, promotion, and technology are the key factors. The analyses, in line with these findings, overlap with the "service quality" theme.

Addressing these four factors diligently and ensuring the necessary conditions are met will not only increase patient satisfaction but also provide confidence to potential health tourists, leading them to choose our country and healthcare institutions for their treatment (Nicolaidis, 2011).

#### **4. CONCLUSIONS**

In this study, the findings and recommendations obtained as a result of interviews with a total of 29 health managers from Class A and B private hospitals and Class C clinics are as follows:

##### **Evaluation of Medical Tourism and Policies**

According to Class A and B private hospitals, the factors that are effective in health tourists coming to our country are: quality service, quality of the doctor staff, geographical location of the country, short waiting time for hospital procedures, adequacy of government incentives and hygienic health institutions. In class C clinics, cheap service, inadequate health tourism policies and advertising promotions are effective.

##### **Suitability of Medical Tourism Policies**

While Class A and B private hospitals found the current medical tourism policies appropriate, Class C clinics emphasized that some deficiencies should be eliminated.

##### **Suitability of Promotional Activities**

Class A and B private hospitals stated that their promotional activities were insufficient and that the Ministry of Commerce and the Ministry of Tourism should provide more support to these activities. Class C clinics, on the other hand, found their promotional activities sufficient.

##### **Recommendations of the Health Sector for Medical Tourism Policies**

Class A and B private hospitals stated that advertising and promotions should be increased, government incentives should be increased, authorized documents for health tourism should be obtained and inspections should be strengthened. Class C clinics suggested that foreign language levels should be increased, a safe environment should be provided, standardization in pricing should be ensured and staff quality should be increased.

##### **Weaknesses of Hospitals**

Class A and B private hospitals stated their weaknesses as low international collaborations, weakness in operational processes, and being quickly affected by political influences. Class C clinics, on the other hand, have brought up problems such as the employees' lack of foreign languages, lack of physical capacity and lack of equipment.

### Strengths of Hospitals

Class A and B hospitals have strengths such as providing services in different languages, high service quality, strong human resources, international collaborations, central location, high patient satisfaction, accessible pricing policies and technological investments. Class C clinics stated that they were promoted through intermediary organizations and tools such as television and print media.

### Health Tourism Studies

Class A and B hospitals stated that they promote themselves on the internet and social media, and deliver patients through their overseas offices and call center activities. Class C clinics stated that they communicate with health tourists by working with intermediary organizations and using translators.

These findings provide valuable insights into the strengths, weaknesses, and opportunities within Turkey's medical tourism sector. Further recommendations focus on enhancing promotional activities, addressing policy gaps, and improving service quality to attract more international patients.

The recommendations developed based on the research results are presented below:

- Promotion and advertising activities should be prioritized to develop medical tourism.
- In health tourism, both the image of the organization and the image of the country are involved. Errors made in this regard can result in negative consequences for the country. Therefore, the government should continue its oversight, including promotions and pricing.
- Quality and accreditation systems need to be adapted to the specific characteristics of health tourism.
- Special policies and resource planning should be developed to attract more health tourists to our country.
- The training of personnel with foreign language skills should be increased.

These findings provide important insights that can guide the development of policies in the health tourism sector and the improvement of service quality.

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## **Innovative Strategies to Combat Antibiotic Resistance: Emerging Trends and Future Directions**

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Review

### **Abstract**

**Aim:** Antimicrobial resistance (AMR) represents a critical global health challenge exacerbated by the overuse and misuse of antibiotics in human, animal, and environmental contexts. This study aims to examine the barriers to addressing AMR, with a specific focus on scientific, economic, and regulatory challenges in the development and adoption of novel antimicrobial strategies.

**Methods:** This review synthesizes current literature on innovative therapeutic approaches, such as bacteriophage therapy and antimicrobial peptides, alongside an analysis of global policy initiatives, including the WHO Global Action Plan on AMR and the PASTEUR Act. Emphasis is placed on identifying key obstacles and potential solutions within the realms of antibiotic R&D and policy frameworks.

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Senel, B., Beka, H. (2025). Innovative Strategies to Combat Antibiotic Resistance: Emerging Trends and Future Directions. *International Journal of Health Management and Tourism*, 10(1): 75-105.

**Results:** Findings highlight the significant promise of alternative therapies and policy-driven incentives to address AMR. However, limitations such as scientific hurdles, economic disincentives, and disparities in regulatory enforcement hinder progress. Novel policy measures like subscription-based models and improved diagnostic tools have shown potential to close existing gaps.

**Conclusion:** Collaborative global efforts are essential to address AMR effectively. Sustainable funding mechanisms, advanced diagnostic technologies, and integrated One Health approaches must be prioritized to bridge gaps between science, policy, and practice. By addressing these challenges, the global community can mitigate the escalating threat of AMR and safeguard the efficacy of antibiotics for future generations.

**Keywords:** Antimicrobial resistance, antibiotic development, global health, One Health, policy initiatives

## INTRODUCTION

Antibiotic resistance is one of the most critical threats to global public health, undermining decades of progress in treating infectious diseases. The discovery of antibiotics in the early 20th century revolutionized medicine, transforming once-lethal infections into treatable conditions (Ventola, 2015). However, the misuse and overuse of antibiotics in healthcare, agriculture, and aquaculture have contributed to the selection and proliferation of resistant microorganisms, creating a global crisis (Laxminarayan et al., 2013).

Globally, antibiotic-resistant infections are responsible for an estimated 1.27 million direct deaths annually, with nearly 5 million more deaths associated with resistance-related complications (Murray et al., 2022). These staggering numbers highlight the scale of the issue, which disproportionately affects low- and middle-income countries (LMICs) due to limited access to healthcare, diagnostics, and effective antibiotic stewardship programs (Dunachie, 2020; Iskandar 2021). Even in high-income countries, resistant infections impose significant economic burdens, with the annual cost of antibiotic resistance in the U.S. alone estimated to exceed \$20 billion in direct healthcare expenses (Prestinaci, 2015).

In addition to these global challenges, countries like Turkey have made substantial efforts to address AMR through national policies and programs. The Turkish Ministry of Health has introduced initiatives such as the "Rational Drug Use Action Plan," which emphasizes public education, physician training, and strict regulations on antibiotic prescriptions (Turkish Ministry

of Health, 2023). Restricting the authorization of family physicians to prescribe certain antibiotics has been a notable policy, leading to a measurable decline in antibiotic misuse. Furthermore, the National Antimicrobial Resistance Surveillance System (NAMRSS) has played a pivotal role in tracking resistance patterns and informing public health strategies (Alkan et al., 2022). Studies in Turkey have highlighted alarming levels of resistance, particularly in hospital settings, where carbapenem-resistant *Klebsiella pneumoniae* and extended-spectrum beta-lactamase (ESBL)-producing *Escherichia coli* are significant concerns (Demirci et al., 2021). These findings underscore the importance of integrating national efforts with global frameworks to combat AMR effectively.

### **The Rise of Resistance**

Bacteria develop resistance through intrinsic and acquired mechanisms, including efflux pumps, enzymatic degradation of antibiotics, target site modifications, and horizontal gene transfer (Martínez et al., 2015). Notably, the spread of resistance genes, such as extended-spectrum  $\beta$ -lactamases (ESBLs) and carbapenemases, has rendered many frontline and even last-resort antibiotics ineffective (Bush and Bradford, 2020). Compounding the issue, the environmental dissemination of antibiotic resistance genes (ARGs) has established reservoirs of resistance in natural ecosystems, further accelerating the crisis (Berendonk et al., 2015).

The overuse of antibiotics in agriculture plays a significant role in this dynamic. Antibiotics are commonly used in livestock to prevent disease and promote growth, practices that contribute to the selection of resistant strains and their subsequent transmission to humans through food, water, and the environment (Van Boeckel et al., 2017). For example, colistin, a last-resort antibiotic in human medicine, has been widely used in animal agriculture, leading to the emergence of plasmid-mediated *mcr-1* resistance, which has now been detected globally (Liu et al., 2016).

### **Challenges in Antibiotic Development**

The development of new antibiotics faces numerous scientific, economic, and regulatory challenges that hinder the ability to effectively combat AMR.

#### **Scientific Barriers**

The discovery of novel antibiotic classes has slowed significantly, with no major breakthroughs in recent decades. Most antibiotics are derived from natural sources such as soil microbes, and many easily accessible compounds have already been explored. The discovery process is further complicated by the need to identify molecules with activity against resistant pathogens while

avoiding toxicity to human cells (Lewis, 2020). Additionally, resistance mechanisms, including efflux pumps and biofilm formation, reduce the efficacy of potential drug candidates, complicating the development pipeline further (Ventola, 2015).

### **Economic Disincentives**

Pharmaceutical companies are often reluctant to invest in antibiotic research and development (R&D) due to poor financial returns. Unlike medications for chronic diseases, antibiotics are typically prescribed for short durations, limiting profitability (Rex et al., 2016). Stewardship programs, though essential for controlling AMR, discourage the widespread use of new antibiotics, further diminishing revenue prospects (Balasegaram et al., 2021). The estimated cost of developing a single antibiotic can exceed \$1 billion, with a low probability of market success, prompting many major pharmaceutical companies to exit the field (Silver, 2011).

### **Regulatory Challenges**

Antibiotic development is subject to stringent regulatory standards designed to ensure safety and efficacy. However, these processes are time-consuming and costly. Demonstrating efficacy against multidrug-resistant pathogens requires complex clinical trials, which often involve small patient populations, making recruitment and statistical analysis difficult (Ventola, 2015). Furthermore, the regulatory landscape lacks flexibility for alternative approaches, such as bacteriophage therapy or antimicrobial peptides, further stalling innovation in the field (Cassini et al., 2019).

### **Addressing the Challenges**

The challenges facing the development of new antibiotics are multifaceted, ranging from scientific barriers to economic and regulatory hurdles. These challenges require coordinated, multifactorial approaches to overcome. Efforts to address these barriers have focused on incentivizing innovation, streamlining regulatory processes, and increasing global collaboration.

### **Scientific Barriers and Innovation Incentives**

The slowdown in the discovery of novel antibiotic classes has been attributed to several scientific factors. As traditional sources of antibiotics, such as soil bacteria, have been exhausted, researchers are increasingly exploring alternative strategies like synthetic biology and the use of natural compounds from unexplored ecosystems (Lewis, 2020). To overcome these scientific barriers, there is a call for greater investment in novel discovery platforms. One such initiative is the Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator (CARB-X), which supports early-stage antibiotic research (Blaskovich, 2020). This initiative and similar programs

offer financial incentives to smaller biotech firms that are developing innovative antibiotics, addressing the gap left by major pharmaceutical companies' retreat from antibiotic R&D due to economic disincentives (Outterson, 2016).

### **Economic Challenges and Regulatory Incentives**

The economic challenges of antibiotic development stem from the low profitability associated with antibiotics. Unlike chronic disease medications, antibiotics are typically used for short durations and often within specific contexts, limiting their market potential (Rex, 2016). This has led to a significant reduction in antibiotic R&D by large pharmaceutical companies. To address this, there have been proposals such as the PASTEUR Act, which seeks to create financial incentives through subscription-based models for antibiotic developers (Pidcock, 2024). These models offer upfront payments to companies for the development of new antibiotics, ensuring that they have sufficient financial motivation to invest in this crucial area.

Additionally, regulatory pathways for antibiotic approval have been critiqued for being lengthy and costly, often resulting in delayed access to new treatments. To improve this process, regulatory agencies such as the U.S. Food and Drug Administration (FDA) have worked to streamline approval processes for antibiotics targeting serious and resistant infections, such as through the Limited Population Pathway for Antibacterial and Antifungal Drugs (FDA, 2020). This pathway aims to accelerate approval for antibiotics with limited indications, ensuring quicker access to drugs needed in urgent situations.

### **Collaborative Efforts**

A crucial part of addressing these challenges lies in fostering greater global collaboration. Public-private partnerships, like the Global Antibiotic Research and Development Partnership (GARDP), have been pivotal in driving innovation in antibiotic development, particularly for neglected diseases (WHO, 2019). These partnerships help bridge the funding gap, foster international research, and provide a platform for the global sharing of knowledge and resources.

Efforts are also being made to improve collaboration among governments, academic institutions, and private industry. Governments are increasingly involved in funding basic research, while pharmaceutical companies are being encouraged to participate in open-source research models to accelerate antibiotic discovery. Additionally, initiatives like the Fleming Fund provide crucial support for AMR surveillance and capacity-building efforts in low-income

countries, where the threat of resistant infections is often most pronounced (Chinemerem et al., 2022).

### Emerging Solutions

Given these challenges, researchers and policymakers have shifted their focus to innovative approaches for combating resistance. Antimicrobial stewardship programs (ASPs) aim to optimize antibiotic use, ensuring appropriate prescriptions while minimizing unnecessary exposure to these drugs (Sirwan et al., 2024). Rapid diagnostic tools, such as next-generation sequencing (NGS) and CRISPR-based assays, enable timely and precise identification of pathogens, allowing for targeted treatments that reduce selective pressure on bacteria (Chen et al., 2018).

Alternative therapies are also gaining traction as potential solutions. Bacteriophage therapy, which uses viruses that specifically target and kill bacteria, offers a promising avenue for treating multidrug-resistant infections (Abdulaziz, 2023). Similarly, antimicrobial peptides—short, naturally occurring proteins with broad-spectrum antibacterial activity—are being investigated as potential adjuncts or replacements for conventional antibiotics (Shuaiqi et al., 2023).

### Global Policy Initiatives

AMR represents a global challenge requiring coordinated policy responses across regions and sectors. International organizations and national governments have recognized the urgency of this issue, launching various initiatives to address it. Central to these efforts is the World Health Organization's (WHO) Global Action Plan on Antimicrobial Resistance (WHO, 2015). This comprehensive framework adopts a One Health approach, emphasizing the interconnectedness of human, animal, and environmental health. The plan outlines five strategic objectives, including improving awareness, enhancing surveillance, optimizing antimicrobial use, and promoting sustainable investment in new medicines and diagnostic tools (WHO, 2015).

Regional efforts complement the WHO's work. For instance, the European Union's (EU) Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) supports transnational research and surveillance systems to address AMR. This program fosters collaboration among EU member states, focusing on understanding resistance mechanisms, improving diagnostics, and exploring alternative treatments (Fitchett and Altun, 2015). In addition, the Fleming Fund, supported by the UK government, provides funding to LMICs to strengthen their capacities in AMR surveillance and laboratory testing (Ribeiro et al., 2019).

Global initiatives have also targeted economic drivers of resistance. The Global Antibiotic Research and Development Partnership (GARDP), a joint venture between the WHO and the Drugs for Neglected Diseases Initiative (DNDi), focuses on developing affordable, accessible treatments for resistant infections (Simpkin et al., 2017).

Despite these advancements, challenges persist. Disparities in funding and infrastructure between high-income and LMICs hinder the implementation of global policies. For example, while high-income nations have made strides in developing rapid diagnostics and promoting stewardship programs, many LMICs lack the resources for even basic infection prevention and control measures. Regulatory weaknesses also impede the enforcement of AMR-related policies, particularly in regions with unregulated antibiotic sales and use (Van Boeckel et al., 2014).

To bridge these gaps, policy initiatives must prioritize equitable resource distribution and capacity building. Strengthening global partnerships, such as those between the WHO, the Food and Agriculture Organization (FAO), and the World Organisation for Animal Health (OIE), is critical. These collaborations can drive progress in areas like harmonizing AMR surveillance methods and setting global standards for antibiotic use in agriculture (Wernli et al., 2020). Moreover, the establishment of financial incentives for pharmaceutical companies to invest in antibiotic research could address the stagnation in antibiotic development (Simpkin, 2017).

In summary, while global policy initiatives have laid a strong foundation for combating AMR, sustained commitment and innovation are necessary to address existing barriers. Enhanced international cooperation, along with tailored strategies for diverse socio-economic contexts, is essential to ensure the effectiveness of these efforts. Only through a unified and sustained approach can the global community mitigate the impact of AMR on health systems, economies, and societies.

## **1. RESEARCH METHODOLOGY**

This review adopts a structured methodology to synthesize current knowledge and provide a comprehensive analysis of innovative strategies addressing antibiotic resistance. The approach is grounded in systematic literature review principles, encompassing the identification, selection, and analysis of peer-reviewed articles, guidelines, and reports from reputable sources. The following steps outline the methodology employed:

### **1.1. Literature Search Strategy**

A systematic search was conducted across major academic databases, including PubMed, Scopus, Web of Science, and Google Scholar, to identify relevant literature published between 2010 and 2024. Keywords and Boolean operators were applied to capture a broad spectrum of studies related to antibiotic resistance and emerging mitigation strategies. The primary search terms included:

- “antibiotic resistance” AND “innovative strategies”
- “alternative therapies” AND “antimicrobial peptides”
- “bacteriophage therapy” OR “phage therapy”
- “antimicrobial stewardship programs”
- “rapid diagnostics” AND “antibiotic resistance”
- “antibiotic resistance genes” OR “ARGs”

The search was supplemented by manual screening of reference lists in selected articles to identify additional relevant publications.

## 1.2. Inclusion and Exclusion Criteria

To ensure the relevance and quality of included studies, the following inclusion and exclusion criteria were applied:

Inclusion Criteria:

- Peer-reviewed articles, systematic reviews, and meta-analyses.
- Studies published in English between 2010 and 2024.
- Research addressing innovative solutions, mechanisms, or policy interventions targeting antibiotic resistance.
- Articles providing quantitative or qualitative evaluations of novel strategies.

Exclusion Criteria:

- Non-English publications.
- Studies focused solely on traditional antibiotics without discussing resistance or mitigation strategies.
- Conference abstracts and opinion pieces lacking empirical data.

## 1.3. Data Extraction

Data from the selected studies were systematically extracted into a predefined template. The following information was recorded for each article:

- Title and year of publication.
- Study type (e.g., experimental, observational, or review).



- Key findings related to innovative approaches such as bacteriophage therapy, antimicrobial peptides, rapid diagnostics, and stewardship programs.
- Outcomes and limitations discussed in each study.

#### 1.4. Quality Assessment

The quality of the included studies was evaluated using established criteria such as the Critical Appraisal Skills Programme (CASP) checklist. Each study was assessed for its methodology, sample size, reproducibility, and the reliability of reported outcomes. Low-quality studies were excluded to maintain the rigor of the review.

#### 1.5. Analytical Framework

The extracted data were synthesized using a thematic analysis framework. Studies were grouped into the following thematic categories based on their focus:

- **Therapeutic Innovations:** Examination of novel treatments like bacteriophage therapy, antimicrobial peptides, and alternative drug delivery mechanisms.
- **Diagnostic Advancements:** Analysis of rapid diagnostic tools, including CRISPR-based systems and next-generation sequencing technologies.
- **Policy and Stewardship Initiatives:** Evaluation of global and regional antimicrobial stewardship programs, as well as policy frameworks aimed at reducing resistance.

Key findings were compared and contrasted to identify trends, gaps, and areas requiring further research.

##### 1.5.1. Enhancing Methodological Rigor

###### Detailed Reporting of Study Selection and Data Extraction

A common limitation in systematic reviews is the insufficient detail provided in the study selection and data extraction processes. To enhance transparency and reproducibility, it is essential to clearly define inclusion and exclusion criteria, outline the search strategy comprehensively, and describe the data extraction methods in detail. Following established methodological guidance, such as the CoCoPop mnemonic (Condition, Context, and Population), can aid in structuring these processes effectively (Woldegeorgis, et.,al 2023)

###### Addressing Sampling Bias and Ensuring Representativeness

Sampling bias poses a significant threat to the validity of AMR studies. Studies often rely on convenience samples, which may not accurately represent the broader population. Implementing strategies to minimize sampling bias, such as random sampling and ensuring diverse

participant recruitment across different settings and demographics, can improve the representativeness of the findings (Iskandar, et., al 2021).

#### Comprehensive Assessment of Data Quality

The reliability of AMR studies heavily depends on the quality of the data collected. It is imperative to assess data sources for completeness, accuracy, and consistency. Utilizing standardized data collection tools and protocols can enhance data quality. Additionally, acknowledging and addressing potential limitations in data sources, such as underreporting or misclassification, is crucial for accurate interpretation (Schnall, et., al 2019)

#### Incorporation of Advanced Analytical Methods

Employing advanced statistical and analytical methods can provide deeper insights into AMR trends and determinants. Techniques such as meta-analysis, sensitivity analysis, and modeling can help in understanding the variability and robustness of the results. However, it is essential to ensure that these methods are appropriately applied and that their assumptions are met to avoid misleading conclusions (Painter, et., al 2023)

#### Transparent Reporting of Limitations and Potential Biases

A critical aspect of methodological rigor is the transparent reporting of a study's limitations and potential biases. Clearly discussing these aspects allows for a better assessment of the study's validity and facilitates the interpretation of the findings within the appropriate context. This practice also aids in identifying areas for future research and improvement (McCubbin, et., al 2021).

By implementing these methodological enhancements, AMR research can achieve more reliable and generalizable outcomes, ultimately contributing to more effective strategies in combating AMR.

## 2. ANALYSIS

The global antibiotic resistance crisis necessitates innovative solutions that address its multifaceted nature, spanning therapeutic interventions, diagnostic advancements, and policy-driven stewardship programs. This section critically examines the emerging strategies aimed at combating antibiotic resistance, analyzing their mechanisms, effectiveness, limitations, and potential for widespread implementation.

## 2.1. Therapeutic Innovations

### 2.1.1. Bacteriophage Therapy

Bacteriophage therapy has garnered attention as a viable alternative to traditional antibiotics. Phages are viruses that selectively infect and lyse bacterial cells, offering a targeted approach to combat resistant pathogens. Unlike broad-spectrum antibiotics, phages can be engineered to target specific bacterial strains, minimizing off-target effects and preserving the host microbiota (Cisek et al., 2017).

Recent clinical trials have demonstrated the efficacy of phage therapy in treating multidrug-resistant *Pseudomonas aeruginosa* and *Acinetobacter baumannii* infections (Chan et al., 2018). However, limitations include the potential for bacterial resistance to phages and regulatory hurdles associated with personalized phage cocktails (Lin et al., 2022). Despite these challenges, advancements in synthetic biology are enabling the development of engineered phages with enhanced lytic activity and broader applicability (Sun, 2013).

### 2.1.2. Antimicrobial Peptides (AMPs)

Antimicrobial peptides represent another promising avenue. These naturally occurring molecules disrupt bacterial membranes and exhibit broad-spectrum activity against both Gram-positive and Gram-negative bacteria (Hancock et al., 2016). Their mechanism of action reduces the likelihood of resistance development compared to traditional antibiotics. Studies have identified AMPs such as colistin and daptomycin as effective against carbapenem-resistant *Enterobacteriaceae* (CRE) and vancomycin-resistant *Enterococci* (VRE) (Garvey, 2023). However, the high cost of production and potential toxicity remain significant barriers to their widespread clinical use. Recent innovations in AMP design and delivery systems aim to mitigate these issues, enhancing their stability and therapeutic index (Verma et al., 2024).

### 2.1.3. Anti-Virulence Therapies

Anti-virulence therapies focus on neutralizing bacterial virulence factors, such as toxins, adhesion molecules, and biofilm-forming proteins, without exerting selective pressure on bacterial growth (Fleitas et al., 2019). This approach minimizes the risk of resistance development while disarming pathogens. Examples include quorum-sensing inhibitors and monoclonal antibodies targeting bacterial exotoxins (Battah and Donadu, 2024). Despite their potential, anti-virulence strategies

are still in early developmental stages, and their clinical efficacy in complex infections remains under investigation (Kong et al., 2016).

## **2.2. Diagnostic Advancements**

### **2.2.1. Rapid Diagnostic Tools**

Rapid diagnostics play a pivotal role in combating antibiotic resistance by enabling precise identification of pathogens and their resistance profiles. Techniques such as polymerase chain reaction (PCR), next-generation sequencing (NGS), and CRISPR-based diagnostics allow for faster and more accurate detection compared to traditional culture methods (Van Belkum et al., 2019).

For example, NGS-based approaches can identify resistance genes in bacterial genomes within hours, guiding clinicians in selecting appropriate therapies (Ellington et al., 2017). CRISPR-based tools, such as SHERLOCK and DETECTR, have shown promise in detecting resistance markers with high sensitivity and specificity (Mustafa and Makhavi, 2024). However, the high cost and limited accessibility of these technologies in resource-limited settings pose significant challenges to their global implementation.

### **2.2.2. Point-of-Care Testing**

Point-of-care (POC) diagnostic tests are particularly valuable in LMICs, where laboratory infrastructure may be limited. These portable devices, often based on immunoassays or nucleic acid amplification, provide rapid results at the patient's bedside (Boehme, 2010). Advances in microfluidics and lab-on-a-chip technologies are improving the accuracy and affordability of POC tests, making them a critical component of global antimicrobial stewardship efforts (Chin et al., 2011).

## **2.3. Policy and Stewardship Initiatives**

### **2.3.1. Antimicrobial Stewardship Programs (ASPs)**

ASPs are critical in optimizing the use of antibiotics in clinical settings to reduce the overuse and misuse of these essential medicines. By ensuring that antibiotics are prescribed only when necessary, and that the right antibiotic is selected for the appropriate duration, ASPs mitigate the selective pressure that drives the development of AMR (Sirvan et al., 2024). These programs rely on multidisciplinary teams, including infectious disease specialists, pharmacists, microbiologists, and other healthcare professionals, to implement evidence-based prescribing practices and monitor antibiotic use (Van Dijck et al., 2018). This collaborative approach has been shown to significantly

improve antibiotic prescribing habits, leading to reductions in inappropriate prescriptions, which in turn helps to prevent the emergence of resistant pathogens.

Studies have demonstrated that ASPs can reduce antibiotic consumption by up to 30% without negatively affecting patient outcomes, highlighting their effectiveness in curbing AMR. For example, a study conducted across various hospital settings found that ASPs led to a reduction in broad-spectrum antibiotic use and a decrease in the incidence of hospital-acquired infections (Davey et al., 2017). Furthermore, ASPs have been shown to be cost-effective, offering financial savings for healthcare systems by reducing the need for prolonged hospital stays due to antibiotic-resistant infections (Schuts et al., 2016).

However, the success of these programs is contingent on several factors, including strong institutional support, continuous education of healthcare providers, and the availability of timely diagnostic tools. Hospitals and healthcare systems must invest in staff training and infrastructure to ensure that ASPs are effectively implemented. The availability of rapid diagnostic technologies is also crucial, as they enable clinicians to identify the most appropriate antibiotic therapy more quickly, thus improving the overall efficiency of the stewardship program (Van Santen et al., 2022).

### **2.3.2. Policy Frameworks and Global Action Plans**

AMR is a pressing global health challenge that demands coordinated efforts across regions and sectors. Recognizing this, international organizations like the World Health Organization (WHO) have developed strategic frameworks to address the issue. The WHO Global Action Plan on Antimicrobial Resistance (WHO, 2015) emphasizes a comprehensive "One Health" approach that integrates human, animal, and environmental health. This approach acknowledges that resistance in one sector (e.g., veterinary or agriculture) can contribute to the spread of resistant pathogens across all areas, including healthcare settings. The plan outlines key objectives to combat AMR: raising awareness, improving surveillance, optimizing antimicrobial use, and promoting the development of new treatments and diagnostics (WHO, 2015). This holistic perspective is essential to tackling the multi-faceted drivers of AMR, as resistance is not confined to clinical environments but spans the entire ecosystem.

National and regional initiatives also play a significant role in combating AMR. Programs such as the Fleming Fund—which focuses on strengthening surveillance and laboratory capacities in LMICs—and the European Joint Programming Initiative on Antimicrobial Resistance

(JPIAMR), which coordinates international research funding and prioritizes AMR research, further enhance global efforts. These programs are crucial for improving surveillance, building research capacity, and ensuring the availability of timely data on the prevalence of resistant pathogens (Chinemerem et al., 2022). The Fleming Fund, for instance, has focused on improving diagnostic and surveillance infrastructure in countries where AMR is a rapidly growing problem, while JPIAMR helps unify research efforts across Europe to create sustainable solutions.

Despite these efforts, disparities in resource allocation and regulatory enforcement persist. Many low-income countries still face challenges in implementing effective AMR policies due to limited funding and infrastructure. Moreover, differences in regulatory approaches, such as inconsistent antimicrobial stewardship practices and inadequate enforcement of veterinary antibiotic use regulations, hinder the success of AMR strategies globally. To be effective, these frameworks must be implemented equitably, with particular attention to the needs of LMICs that are disproportionately affected by AMR.

These challenges highlight the need for stronger global partnerships, improved policy coherence, and greater financial commitments to support AMR programs worldwide. Only through sustained collaboration and increased investments can the global community hope to mitigate the threat of AMR and safeguard the efficacy of antibiotics for future generations.

### **2.3.3. Strengthening Practical Applications in AMR**

AMR poses a significant threat to global health, particularly in LMICs. Implementing practical, context-specific strategies is crucial to mitigate this challenge effectively. Below are real-world examples and case studies illustrating successful AMR mitigation efforts in LMICs.

#### **Community-Based Antimicrobial Stewardship Programs**

Community-driven ASPs have demonstrated success in reducing inappropriate antibiotic use in rural and underserved areas. For instance, in the South Indian state of Kerala, a comprehensive strategy was implemented to prioritize infection prevention and control, alongside antimicrobial stewardship. This approach led to a significant reduction in antibiotic misuse and highlighted the importance of tailored interventions in LMICs (Singh, et., al 2021).

#### **Integrating Rapid Diagnostics into Primary Care**

The integration of rapid diagnostic tools into primary healthcare settings has proven effective in guiding appropriate antibiotic use. In Bangladesh, a scoping review examined hospital-based ASPs, shedding light on barriers and facilitators to effective implementation. The study

emphasized the need for rapid diagnostics to improve antibiotic prescribing practices, ultimately contributing to better patient outcomes (Harun, et., al 2024).

### **Public-Private Partnerships for Sustainable Interventions**

Public-private partnerships (PPPs) can drive sustainable AMR interventions by pooling resources and expertise. In South Africa, collaborative efforts between governmental bodies and private organizations have been pivotal in addressing AMR challenges. These partnerships have facilitated the development and distribution of low-cost diagnostic tools and have supported public health campaigns aimed at reducing antibiotic misuse (Pokharel, et al., 2019).

### **Promoting Local Innovations in LMICs**

Encouraging local innovation is critical to addressing AMR in resource-constrained settings. In various LMICs, community-led initiatives have empowered small-scale farmers to adopt alternative livestock health practices, such as the use of probiotics and vaccination programs, thereby reducing reliance on antibiotics. These grassroots efforts have been instrumental in decreasing antibiotic use in agriculture and mitigating the spread of resistance (Rony, et., al 2023)

### **Recommendations for Future Implementation**

**Field-Based Research:** Invest in studies that evaluate the effectiveness of AMR strategies within specific local contexts, considering cultural, social, and economic factors.

**Capacity Building:** Provide training and resources for healthcare workers and community leaders to implement and sustain AMR programs effectively.

**Policy Support:** Encourage governments to adopt evidence-based policies that incentivize the use of alternatives to antibiotics in agriculture and healthcare.

**Monitoring and Evaluation:** Establish robust mechanisms to track the outcomes of implemented strategies, ensuring continuous improvement and scalability.

By leveraging these real-world examples and recommendations, stakeholders can bridge the gap between policy and practice, ensuring that global AMR initiatives deliver tangible benefits across diverse settings.

### **2.3.4. Localized Strategies for Addressing AMR in LMICs**

Addressing AMR necessitates the implementation of localized strategies that consider the unique cultural, economic, and healthcare contexts of LMICs. Tailoring interventions to local needs can enhance their effectiveness and sustainability.

### **Strengthening Healthcare Infrastructure**

Improving healthcare infrastructure is fundamental in combating AMR. Enhancements in water, sanitation, and hygiene (WASH) within healthcare facilities can significantly reduce infection rates, thereby diminishing the need for antibiotics. WHO emphasizes that inadequate WASH conditions in LMICs exacerbate the spread of infections, contributing to increased antibiotic consumption and resistance (WHO, 2023).

### **Implementing Effective Regulatory Frameworks**

Enforcing robust regulatory frameworks ensures the appropriate use of antimicrobials. A study analyzing antimicrobial stewardship policies reported that 67% of surveyed countries had a national action plan on AMR, and 64% had legislative policies on antimicrobial use. However, the effectiveness of these policies varies, highlighting the need for context-specific regulations that address local challenges (Zay Ya et al., 2024).

### **Enhancing Diagnostic Capabilities**

Investing in diagnostic technologies enables accurate and timely identification of infections, facilitating appropriate antimicrobial use. The application of data technologies, such as artificial intelligence and machine learning, in diagnostics has shown promise in improving AMR management. However, the integration of these technologies in LMICs faces challenges, including limited resources and technical expertise (Chindelevitch, et., al 2022).

### **Expanding Preventive Interventions**

Preventive measures, including vaccination programs and public health campaigns, reduce the incidence of infections, thereby decreasing the reliance on antibiotics. For instance, mass drug administration of azithromycin in certain high-mortality regions has been associated with reduced child mortality rates. However, this approach must be balanced against the potential risk of promoting antibiotic resistance (Financial Times, 2023).

### **Educating Healthcare Providers and the Public**

Education initiatives targeting healthcare providers and the public promote awareness of appropriate antimicrobial use. Training programs for healthcare workers on antimicrobial stewardship and public campaigns to inform communities about the dangers of misuse are essential components of a comprehensive AMR strategy (Kanan, et., al 2023).

By implementing these localized strategies, LMICs can effectively combat AMR, ensuring that interventions are culturally appropriate and sustainable within their specific contexts.



## 2.4. Environmental Considerations

The environmental reservoirs of antibiotic resistance represent a critical and often under-addressed facet of the AMR crisis. The widespread discharge of antibiotics, along with resistant bacteria, into natural ecosystems—such as water sources, soils, and sediments—accelerates the emergence and spread of resistance. These environmental pathways facilitate the transmission of resistant genes to human and animal populations, exacerbating the global burden of AMR (Berendonk et al., 2015). Antibiotics are released into the environment through various means, including improper disposal, agricultural runoff, and wastewater discharge from hospitals and pharmaceutical manufacturing plants (Martínez, 2009). This environmental contamination not only promotes the proliferation of resistant bacteria but also provides a reservoir for resistance genes that can be transferred across microbial species through horizontal gene transfer.

Efforts to mitigate environmental dissemination of antibiotic resistance are critical in reducing the global spread of AMR. One key approach is the improvement of wastewater treatment processes, which can help reduce the release of antibiotics and resistant bacteria into natural water systems. Advanced treatment technologies, such as membrane filtration and ozonation, have been found to be more effective in removing antibiotics and resistant microbes from wastewater (Kalli et al., 2023). Regulatory measures aimed at the pharmaceutical industry also play a vital role, including the implementation of stricter regulations on the disposal and manufacturing of antibiotics. Policies designed to minimize the environmental impact of pharmaceutical production, such as the European Union's Water Framework Directive, have been pivotal in reducing the release of pharmaceutical pollutants (Milmo, 2019).

Another promising solution is the development of biodegradable antibiotics. These are antibiotics designed to degrade naturally in the environment, reducing the persistence of resistance-promoting compounds in ecosystems (Michael, 2013). The focus on designing antibiotics with a minimal environmental footprint reflects the growing understanding that tackling AMR requires a holistic approach, considering not only clinical settings but also the broader environmental context. Additionally, the use of environmental monitoring systems to track the presence of antibiotics and resistant bacteria in water sources, soils, and sediments is vital for understanding the full extent of the environmental contribution to AMR (Panovska and Hajrulai-Musliu, 2024)

Incorporating environmental factors into global AMR policies is crucial for addressing the root causes of resistance. Efforts to control environmental pollution, coupled with stricter regulations and the development of environmentally friendly antibiotics, are integral components of the broader strategy to combat AMR. These measures require international collaboration and policy alignment to ensure a comprehensive and effective response to the rising threat of AMR.

### **3. CONCLUSIONS/ DISCUSSION AND RECOMMENDATIONS**

Antibiotic resistance (AR) has emerged as a critical threat to global health, with far-reaching implications for the treatment of infectious diseases. The rapid increase in resistant pathogens not only challenges medical practices but also places enormous strain on healthcare systems. While several innovative strategies have been proposed to combat AR, significant barriers remain in their widespread implementation, especially in resource-limited settings.

AMR is often framed as a biomedical challenge, it is fundamentally influenced by social and cultural factors. Healthcare accessibility, cultural perceptions of illness, and traditional beliefs about medicine shape how antibiotics are used within communities. Understanding these influences is crucial for designing effective ASPs and other intervention strategies that are tailored to specific populations.

Health literacy levels within communities play a critical role in the appropriate use of antibiotics. Low health literacy often leads to the misuse or overuse of antibiotics. In certain regions, there is a widespread misconception that antibiotics are effective against viral infections such as the common cold. Such misinformation contributes significantly to the rise of antibiotic resistance (Dogan, et., al 2021).

Cultural norms and traditions also shape antibiotic use. In some societies, there is a strong tendency to resort to medication at the first sign of illness. Moreover, in areas where antibiotics can be obtained without a prescription, individuals may self-medicate, leading to improper dosages and treatment durations (Ilhan, et., al 2019).

Social factors, such as access to healthcare and economic conditions, further impact antibiotic use. In regions with limited healthcare access, people often turn to alternative and frequently inappropriate treatment methods. Economic hardships drive individuals toward cheaper and more readily available antibiotics, increasing the risk of misuse (Bolsoy, et., al 2006).

One of the primary strategies in the fight against antibiotic resistance is the optimization of antibiotic use, particularly through ASPs. These programs have shown promising results in reducing unnecessary antibiotic prescriptions without compromising patient outcomes (Barlam et al., 2016). Evidence suggests that ASPs can reduce antibiotic consumption by up to 30% (Baur et al., 2017), contributing to decreased resistance rates. However, the success of these programs hinges on institutional support, continuous education, and the availability of diagnostic tools (Dyar et al., 2017). Moreover, the implementation of ASPs can be hindered by the lack of trained personnel and diagnostic infrastructure, especially in LMICs.

Rapid diagnostic tools have emerged as another essential component in combating antibiotic resistance. Techniques such as next-generation sequencing (NGS) and CRISPR-based diagnostics allow for quicker and more accurate pathogen identification, enabling targeted treatment and minimizing the unnecessary use of antibiotics (Didelot et al., 2016; van Belkum et al., 2019). These advancements hold the potential to transform clinical practice by ensuring more precise treatments. However, their high cost and limited accessibility in resource-poor settings pose significant challenges to global implementation (Chen et al., 2018; Okeke et al., 2011). This highlights the need for sustainable solutions that can bridge the gap between high- and low-resource settings.

As traditional antibiotics become less effective, alternative therapies are being explored. Antimicrobial peptides (AMPs), bacteriophage therapy, and anti-virulence strategies are gaining attention for their potential to address multidrug-resistant infections. AMPs such as colistin and daptomycin have shown efficacy against resistant pathogens, including carbapenem-resistant Enterobacteriaceae (CRE) and vancomycin-resistant Enterococci (VRE) (Magana et al., 2020; Lei et al., 2019). However, the high cost of production and potential toxicity of these therapies remain significant barriers to their widespread use (Magana et al., 2020).

Bacteriophage therapy, which uses viruses that target specific bacteria, has emerged as a promising alternative to antibiotics for treating multidrug-resistant infections (Czaplewski et al., 2016). Phage therapy's main advantage lies in its ability to specifically target bacterial pathogens, reducing the risk of broad-spectrum resistance development (Pirnay et al., 2019). Nevertheless, regulatory hurdles and bacterial resistance to phages pose challenges for its clinical use (Pirnay et al., 2019). Advances in synthetic biology and engineered phages may help overcome some of these limitations, making phage therapy a more viable option (Nobrega et al., 2018).

Anti-virulence therapies, which focus on neutralizing bacterial virulence factors, such as toxins and biofilm-forming proteins, are another promising area of research (Allen et al., 2014). These therapies aim to disarm pathogens without exerting selective pressure on bacterial growth, thus minimizing the risk of resistance development (LaSarre & Federle, 2013). While anti-virulence strategies hold great potential, their clinical efficacy remains under investigation (Maura et al., 2016), and further research is needed to validate their long-term effectiveness in complex infections.

International organizations, such as the World Health Organization (WHO), have recognized the urgent need for coordinated global efforts to tackle antibiotic resistance. The WHO Global Action Plan on Antimicrobial Resistance emphasizes a One Health approach, integrating human, animal, and environmental health to reduce resistance drivers (WHO, 2015). This approach is crucial given the interconnectedness of human, animal, and environmental health, where resistance can spread through various pathways, including food production, wastewater, and wildlife. National initiatives like the Fleming Fund and the European Joint Programming Initiative provide essential support for surveillance, research, and capacity building, but challenges such as disparities in resource allocation and regulatory enforcement persist (Ventola, 2015).

Environmental contamination with antibiotics and resistant bacteria represents an often-overlooked source of AR dissemination. Wastewater treatment improvements, stricter pharmaceutical manufacturing regulations, and the development of biodegradable antibiotics are critical strategies to reduce the environmental spread of resistance (Smith and Team, 2023). Addressing these environmental reservoirs requires coordinated global efforts and substantial investment in infrastructure and research.

Given the multifaceted challenges of AMR, a combination of strategic interventions is necessary to mitigate its impact. Based on the findings discussed above, the following recommendations are proposed to enhance antimicrobial stewardship, address social and cultural barriers, and improve healthcare accessibility in resource-limited settings.

**Education and Awareness:** Organize educational programs to improve community health literacy and provide accurate information on the appropriate use of antibiotics.

**Culturally Adapted Policies:** Develop health policies that take into account cultural norms and beliefs, involving community leaders and influencers in the process.

**Improving Healthcare Access:** Enhance access to healthcare services, particularly in rural and underserved areas, and reduce economic barriers to proper treatment.

AMR poses a significant global health challenge, necessitating a multifaceted and urgent response. This review has highlighted critical areas where advances in technology, innovative therapies, and policy interventions can make meaningful strides in combating this crisis. Key findings emphasize the importance of ASPs, which have proven effective in optimizing antibiotic use and reducing the misuse that drives resistance. Similarly, the integration of rapid diagnostics, such as CRISPR-based and next-generation sequencing tools, offers a powerful means of improving clinical outcomes by enabling precise and timely identification of resistant pathogens.

Emerging therapies like bacteriophage treatment and antimicrobial peptides demonstrate promising alternatives to traditional antibiotics, particularly in managing multidrug-resistant infections. Although challenges such as high costs and regulatory barriers persist, advancements in synthetic biology and delivery systems hold the potential to overcome these obstacles. In addition, anti-virulence strategies and the One Health approach underscore the importance of addressing resistance at the human, animal, and environmental interface.

The implications of this work extend beyond individual innovations, underscoring the need for a holistic approach that combines technological breakthroughs with robust global policies. Collaborative efforts, from international frameworks to local implementation, are essential in addressing disparities in resource distribution and regulatory capacities, especially in low- and middle-income countries.

While significant progress has been made, limitations remain. This study did not address all possible solutions or account for every regional disparity in AMR impact. Future research should explore these gaps, focusing on scalable solutions for under-resourced settings and sustainable practices to limit environmental dissemination of resistance.

In conclusion, tackling AMR demands a comprehensive strategy that balances innovation with accessibility, policy with practice, and immediate action with long-term sustainability. By integrating these efforts, the global community can strive to preserve the efficacy of antibiotics and secure public health for generations to come. This work underscores the collective responsibility of governments, researchers, healthcare professionals, and the public to act decisively against the escalating threat of AMR.

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**Editorial**

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## **Citation Structures in Thermal Tourism Research: A Bibliometric Analysis Using Vosviewer**

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### **Abstract**

**Aim:** This study analyzes academic trends in thermal tourism literature, evaluating key themes, author collaborations, and scientific contributions among countries.

**Methods:** Bibliometric analysis was conducted using data from the Web of Science database, and the results were visualized with VOSviewer software. Bibliometric analysis quantifies academic works based on key characteristics. The themes and authors prominent in thermal tourism studies were identified, and the nature of scientific collaborations between countries and institutions was assessed.

**Results:** The findings reveal that countries such as Turkey, Spain, and Italy have made significant contributions to the thermal tourism literature. In recent years, there has been an increase in

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publications originating from Portugal, indicating a shift in research focus within this field. Keyword analysis shows that the strongest phrases in terms of total link strength are 'thermal tourism,' 'health tourism,' and 'tourism.' This result is consistent with the thematic focus of the analyzed studies, indicating that these concepts are central to the field of thermal tourism research. These keywords were found to have a strong relationship with concepts such as wellness, health tourist behavior, facilities, and environmental impacts. In recent years, the publications of research centers that will enable researchers to obtain more meaningful information on the subject have found more place in the literature.

**Conclusion:** Unlike previous studies that primarily focus on wellness tourism, this study specifically examines the bibliometric structure of thermal tourism research, highlighting emerging trends, citation patterns, and the role of research institutions, thereby offering a more data-driven perspective on the field. This study includes articles that address thermal tourism from individual, economic, and cultural perspectives, offering a multidisciplinary approach. It provides a useful framework for future research and serves as a valuable reference for researchers and industry stakeholders in exploring strategies related to thermal tourism.

**Keywords:** Health tourism, thermal tourism, tourism, health and wellness tourism, wellness

## INTRODUCTION

In recent years, health tourism has accelerated worldwide and has become an important sector. People travelling to different countries for health improvement, treatment, or recuperation are the basis of health tourism. Health tourism is defined as a multifaceted type of tourism in which individuals travel to a country other than their country of residence to benefit from various health services such as diagnosis, treatment, rehabilitation, health protection, and promotion (Connell, 2011). Modern health tourism offers a wide range of services such as aesthetic surgery, dental treatment, and physiotherapy and is not limited to medical treatment but also includes wellness and fitness services to improve the quality of life of individuals (Liberato and Cerqueira, 2021). The increase in health tourism trips has led to an increase in the number of facilities and destinations in the sector, which has led to variations, especially in terms of regulations and laws to be followed. Health tourism is divided into three categories according to the individual's needs and the purpose of the trip. The main classifications are medical, thermal, and tourism for the elderly and disabled.

Medical tourism involves individuals travelling domestically or internationally to receive health services such as diagnosis and treatment (Bookman and Bookman, 2007). Medical tourism

is about access to quality health services at low cost, especially in countries with more affordable healthcare, e.g., organ transplants, plastic surgery, oncological treatments, dental and eye care, and heart surgery. When examining the behaviors of medical tourists, there is a two-stage process for selecting a medical tourism product. The evaluation of a foreign country and selection of a health facility are two stages. Country characteristics, such as economy, politics, and policy, influence country preference. Facility choice depends on factors like cost, accreditation, and care quality (Forgione and Smith, 2007). Documentation of service quality is important in the health tourism sector. Singapore, South Korea, Thailand, Türkiye, and India stand out as exemplary countries (Turner, 2007).

Thermal tourism has attracted great interest, especially with the understanding of the positive effects of natural resources and mineral water on health. Thermal water resources have been used for thousands of years to treat various health problems. Thermal tourism aims to enable people to get cured by travelling to where these resources are located. Thermal water therapies have an important place in the treatment of many health problems such as rheumatism, stress, and skin diseases. Despite the increasing interest in thermal tourism, academic literature remains fragmented, lacking a comprehensive understanding of research trends, key contributors, and thematic evolution. A bibliometric approach allows for an objective and systematic evaluation of the intellectual structure of this field, highlighting research gaps and emerging directions.

Tourism for the elderly and people with disabilities aims to enable elderly and disabled individuals to benefit from health and tourism services designed to meet their needs (Blichfeldt and Nicolaisen, 2011). Rehabilitation, recreation, and social participation are the main elements of this type of tourism. It provides activities that support the participation of older people in social life and special arrangements for disabled people to have easy access to health services. Accessible tourism, also referred to as disabled tourism, is a specialized sector that ensures travel opportunities for individuals with disabilities by providing tailored services and facilities. This sector includes medical care, rehabilitation, and daily assistance for travelers in specialized accommodation such as clinic guesthouses, geriatric treatment centers, and nursing homes. The goal is to offer barrier-free travel experiences where trained and certified professionals assist with the care and rehabilitation needs of elderly and disabled tourists. Countries with favorable climates and advanced healthcare infrastructure, such as Türkiye, have significant potential in this growing industry, attracting travelers from warmer Middle Eastern regions as well as colder European

countries seeking a comfortable and accessible environment (Health Tourism Report, 2010). The most prominent countries are Japan, Germany, and the Scandinavian countries.

Health tourism, with its comprehensive services aimed at improving individuals' health and quality of life, contributes to the well-being of both individuals and countries. The types of health tourism provide tailored solutions to health needs, offering economic and social benefits on both national and international levels. Among these, Türkiye stands out as a leading country in thermal tourism, with its rich natural resources and advanced infrastructure. However, its exact position in the global academic landscape has not been systematically examined.

The primary motivation for this study is to fill this gap by identifying research trends, key contributors, and thematic patterns in the thermal tourism literature. The bibliometric approach was chosen as it provides a quantitative and objective assessment of the intellectual structure of the field, allowing for the identification of dominant themes, influential researchers, and international collaborations. Furthermore, by evaluating citation networks, this study assesses Türkiye's academic influence in thermal tourism research compared to other countries.

In this regard, the aim of this study was to identify trends in the thermal tourism literature and highlight research gaps, while also evaluating Türkiye's position. The study employed bibliometric analysis to examine the key themes of literature and academic collaborations. By doing so, it contributes to a more structured understanding of thermal tourism research and provides a reference point for future studies in this field.

### **Literature Review**

Thermal tourism is a subfield of health tourism that provides both physical and mental health services by utilizing natural thermal water resources. It emphasizes that thermal tourism is an important tool for individuals to cope with stress, gain vitality, and benefit from preventive health services. Throughout history, this type of tourism has aimed to enhance the quality of life of individuals by offering both therapeutic and wellness services together (Erfurt-Cooper and Cooper, 2009; Liberato and Cerqueira, 2021).

Thermal tourism, a key segment of health tourism, enhances physical and mental well-being through natural thermal and mineral water treatments. This sector has gained global significance, particularly in Asia and Europe, where countries invest in spa facilities, wellness resorts, and holistic health services to attract visitors. According to the European Spas Association (2022), Europe has over 1,400 developed thermal tourism sites, generating an annual revenue of

€45 billion and employing approximately 750,000 people. Europe has a deep-rooted tradition of balneotherapy, thalassotherapy, and natural water-based therapies, with mineral spas and sanatorium-style health centers continuously evolving through privatization, renovation, and diversification (Shokri Garjan et al., 2023). The industry is expanding by integrating fitness, nutrition, and alternative therapies, catering to the increasing demand for comprehensive wellness experiences. In addition to mineral-rich hot spring sources, thermal tourism is primarily composed of elements such as mud baths, steam rooms, and other natural features. In medical thermal tourism, it plays a crucial role in the treatment of chronic health issues, such as rheumatic diseases, skin problems, respiratory diseases, and musculoskeletal disorders. Many of the thermal spas and facilities in Türkiye specialize in these areas (Erfurt-Cooper and Cooper, 2006). In wellness-oriented thermal tourism, services focused on stress management, mental and physical recovery, detoxification, and healthy living fall under this category of thermal tourism. Modern thermal facilities offer tourists a comprehensive experience through spa services and personal care programs (Smith and Puczko, 2014). Thermal tourism holds significant importance in the economies of many countries. The Global Wellness Institute (2023) states that wellness tourism, which includes thermal tourism, was valued at \$651 billion in 2022 and is expected to reach approximately \$1.4 trillion by 2027, growing at an annual rate of 9.9%. Countries like Türkiye, Japan, and Hungary, where thermal tourism constitutes a large part of health tourism, also recognized it as a cultural heritage (Kozak, 2002). Türkiye ranks among the leading thermal tourism destinations in Europe due to its rich geothermal resources and government-backed incentives. The Turkish Statistical Institute (TÜİK) reports that the number of foreign tourists visiting Türkiye for health tourism, including thermal tourism, exceeded 1.2 million in 2023, generating over \$2 billion in revenue (USAŞ, 2024). With over 1,400 thermal springs, the country leverages its natural assets to enhance health tourism revenues and promote sustainable development (Demir and Dağ, 2024). Investments focus on modernizing spa facilities, improving service quality, and integrating wellness tourism trends to remain competitive in the global market. As the demand for personalized and holistic wellness experiences continues to rise, Türkiye aims to strengthen its position by offering diverse and high-quality thermal tourism services that align with evolving global health and wellness trends.

Thermal tourism, as an important subfield of health tourism, has been addressed from various perspectives in different geographical regions and has been the subject of numerous

academic studies in terms of its historical development as well as its economic, social, and environmental impacts. Additionally, studies have analyzed thermal hotel location factors, socio-economic impacts, SWOT analyses, and consumer perceptions:

Liberto and Brandão (2021) focused on the importance of thermal resources and thermal tourists in terms of the image, positioning, and development of tourist destinations. They aimed to identify the specific motivations that attract these tourists to thermal tourism practices, understand how the benefits sought by thermal tourists and their socio-demographic profiles influence their motivations, and explore how these motivations determine the characteristics of their travel. In their study, Sayılı et al. (2007) present a case study on the treatment of psoriasis using doctor fish at the Kangal Fish Spa, a prominent health tourism destination in Türkiye. The study explores the Kangal Fish Spa as a health tourism site and examines the socio-economic and visitor profiles of those who visit the spa. Duman and Kozak (2010) analyze tourism cities in Türkiye, revealing that, although Türkiye is renowned for its summer destinations, many Turkish cities also promote diverse tourism resources, including history, culture, thermal (spa) tourism, nature, and urban experiences.

Esiyok, Kurtulmuşoğlu, and Özdemir (2018) measure thermal tourism demand by the length of stay and analyze the determinants that affect the length of stay for elderly thermal tourists. Gonzalez et al., (2009) analyzed the thermal water sources of Ourense city to determine the presence of various chemically soluble organic compound classes responsible for biological activities. Alvarez (2012) examined the historical development of thermal tourism in Spain and explained the transformation processes in this field. In the review by Nikoli and Lazakidou (2019) an overview of thermal tourism services offered in Europe and Greece is provided, emphasizing their importance for the tourism economy. Kurtulmuşoğlu and Esiyok (2017) studied the target selection of international thalassotherapy (a subfield of thermal tourism) tourists by dividing them into two age groups, 54 and under, and 55 and over, based on their motivations. The panel data analysis revealed that the 55 and over group was less sensitive to income levels, but more sensitive to distance and education compared to the younger group. According to the AHP (Analytic Hierarchy Process) analysis by Emir and Saraçlı (2014), environmental factors were found to be the most important in determining the location of thermal hotels. Other important factors, in order of significance, included the characteristics of the construction, investment costs, location of the construction, competition factors, and demographic characteristics. Emir and Arslanturk (2015),

in their study, evaluated the strengths, weaknesses, opportunities, and threats (SWOT analysis) of thermal tourism based on the opinions of tourism students. The findings revealed that students perceive the presence of a university as a strength, the lack of an airport as a weakness, year-round sustainable thermal tourism as an opportunity, and the negative impact of construction problems on tourism as a threat.

Bertan (2019) analyzed residents' perceptions of thermal tourism impacts in Karahayit. The study combined secondary data analysis with field research using face-to-face surveys. Factor analysis categorized perceptions into social benefit, living benefit, living cost, and social cost, while regression analysis examined their influence on residents' support for thermal tourism development. Findings showed that social benefit was the strongest determinant, followed by living benefit, living cost, and social cost. Stavroula and Vasiliki (2020) examined thermal tourism as a specialized sector utilizing natural thermal resources, with Europe-led by Germany-being a key player. Europe hosts 1,400 developed bathing sites, attracting millions of visitors and generating an annual turnover of 45 billion euros, employing around 750,000 people. In Greece, despite having high-quality thermal resources, thermal tourism has been declining. The study explores the reasons behind this decline and provides recommendations for improving and sustaining thermal tourism in the country.

In a study conducted in Italy, Cinti (2021) highlighted that SPA tourism represents an important social and economic resource for the sustainable development of local economies with specific resources. Barros, Sousa, and Fernandes (2021) explored the role of innovation in thermal tourism in the Peninsular Northwest, highlighting its contribution to sustainable development and complementary sectors like healthcare. The study aimed to systematize key aspects of the innovation process and entrepreneurship in tourism, particularly in the context of relationship marketing and consumer behavior. A conceptual model was proposed to examine the impact of innovation on trust, commitment, service quality, satisfaction, and loyalty in thermal tourism. The authors emphasized the need for future research on emotional factors and the evolving dynamics between tourists and host communities. Demir and Dağ (2024) examined the relationship between healthy lifestyle awareness, health perception, and mental well-being among thermal tourism service recipients in Türkiye. The study found that thermal treatments positively impacted health perception and mental well-being. A strong positive correlation was identified between healthy living awareness and mental well-being, with regression analysis confirming that higher health

perception and awareness predict better mental well-being. Additionally, older individuals and those with chronic illnesses had lower levels of health perception and mental well-being.

Despite numerous studies in the field, a comprehensive bibliometric analysis of thermal tourism has not been conducted. Existing systematic reviews focus on specific aspects, such as consumer behavior, economic impacts, or destination analysis, but lack a quantitative, citation-based assessment of the academic landscape. In this study, a bibliometric analysis approach is employed to systematically explore the evolution of thermal tourism literature. The analysis focuses on identifying major research trends, mapping citation networks, and examining patterns of author collaboration. Additionally, the study aims to highlight influential scholars and institutions while evaluating Türkiye's academic contribution to the field from a comparative perspective. By systematically analyzing publication patterns, co-authorship networks, and thematic trends, this study provides a structured and data-driven perspective on thermal tourism research, filling a gap in literature.

## 1. RESEARCH METHODOLOGY

The research aims to examine the status of the concept of thermal tourism in literature using bibliometric analysis and to identify the general trends in academic studies in this field. In social sciences, bibliometric analysis, which is frequently used as a quantitative technique, is defined as the examination of academic works such as books, articles, and theses through numerical analyses and statistics based on characteristics such as keywords, topics, and methods used. This method is particularly useful for mapping the intellectual structure of a research field and identifying influential studies, authors, and institutions (Zhang et al., 2019). Bibliometric analysis provides information on trends in the field for future studies and encourages researchers to explore new and unexplored topics. By utilizing bibliometric techniques, this study offers a systematic and objective approach to understanding research patterns in thermal tourism.

Bibliometric analysis is a method that focuses on the statistical evaluation of citations received by articles and other publications. Typically, the goal of bibliometric studies is to summarize research trends and academic networks (Zhang et al., 2019).

### WoS as the Chosen Database:

Web of Science (WoS) is considered one of the foremost databases worldwide, featuring journals with high impact and quality (Mavric et al., 2021). The selection of WoS is based on its

comprehensive coverage of peer-reviewed academic publications and its indexing of high-impact journals, ensuring access to rigorously reviewed and influential studies. Unlike other databases, WoS allows for detailed citation analysis and author network evaluations, which are essential for bibliometric research. Additionally, WoS provides structured and standardized metadata, allowing for more accurate and reliable bibliometric analyses.

### **Data Collection Process:**

In November 2024, a search was performed for publications indexed in the SCI-EXPANDED, SSCI, HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, and ESCI indexes, using the keyword "Thermal tourism" across all years. The keyword was enclosed with quotation marks to minimize the risk of retrieving research with varying titles and to specifically target this subfield of health tourism. This keyword selection ensures that the dataset accurately represents the thermal tourism research domain, preventing the inclusion of unrelated studies. A total of 82 publications were identified, comprising 2 book reviews, 3 book chapters, 3 reviews, 15 conference papers, and 62 articles. The earliest publication dates to 2005, while the most recent was published in 2024. This dataset reflects the evolution of academic interest in thermal tourism, providing valuable insights into its historical and recent developments.

### **Analysis Techniques:**

The data collected were analyzed through author, citation, journal, country, institution, keyword, and abstract analyses. These analytical categories allow for a comprehensive understanding of the research landscape, highlighting key contributors, publication patterns, and thematic trends.

### **Use of VOSviewer for Bibliometric Mapping:**

VOSviewer is a software tool designed for creating and visualizing bibliometric maps, and it is widely used for both generating and visualizing bibliometric data (Van Eck and Waltman, 2010). This tool facilitates the identification of co-citation networks, keyword co-occurrence patterns, and institutional collaborations, providing a visual representation of the structure of thermal tourism research. By utilizing VOSviewer, this study effectively maps the academic network within thermal tourism literature, offering insights into influential research themes and academic collaborations.

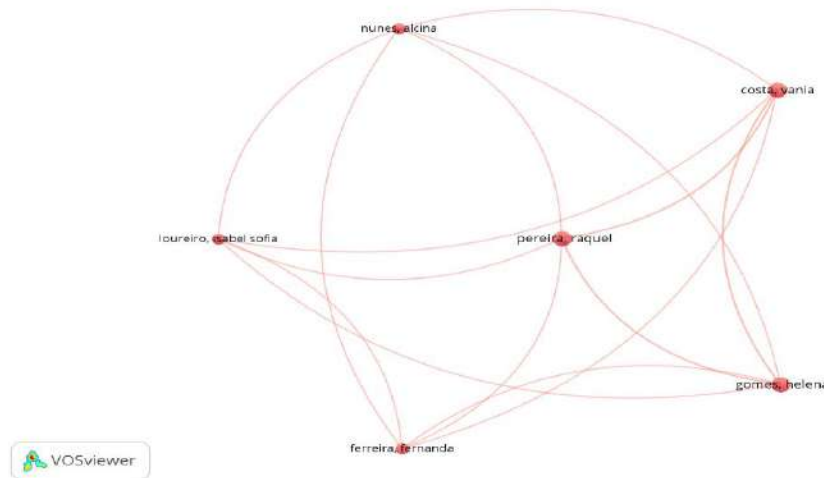


## 2. ANALYSIS

This section presents the findings obtained from the bibliometric analysis conducted in the study. Various analyses were performed to examine the structure of scientific collaborations, citation relationships, keyword usage, and bibliographic connections in the field of thermal tourism. Co-authorship analysis was conducted to identify the most collaborative authors, mapping their connections and contributions to the field. Citation analysis was applied at different levels, including individual authors, countries, and organizations, to determine the most influential contributors and their impact. Keyword analysis revealed the most frequently used terms and their interconnections, highlighting dominant research themes. Additionally, bibliographic coupling was analyzed at both document and author levels to explore the extent of shared references among different studies. Finally, co-citation analysis was used to determine which authors are frequently cited together, reflecting intellectual relationships in the literature. All analyses were visualized through network maps, providing a comprehensive overview of the research landscape in thermal tourism. This section presents the findings obtained in the study.

### 2.1. Co-authorship Analysis

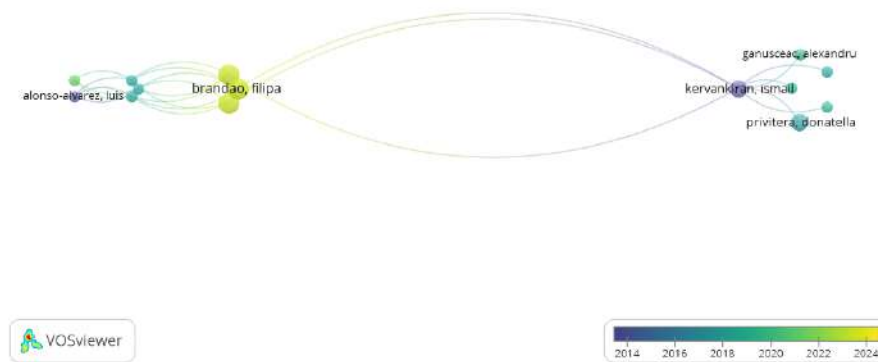
A network map was developed to identify the most connected and collaborative authors, based on the criteria of having at least one publication and one citation. The six most connected authors in the cluster each have a total of 7 connections. Raquel Pereira, located at the center, has co-authored a total of 7 works. These works have received 2 citations, and the number of documents is recorded as 2. Similarly, Vania Costa and Helena Gomes have also contributed as co-authors to a total of 7 works, received 2 citations, and produced 2 documents. These authors are central figures in the network, strengthening the collaboration structure in the field. Alcina Nune, Sabel Sofia Loureina, and Fernanda Ferreria have co-authored five works and play a key role in maintaining collaboration, despite their peripheral position in the network.



**Figure 1: Co-authorship links showing author collaborations**

## 2.2. Citation of Authors

Figure 2 displays the citation network map, generated using the criteria of at least one publication and one citation. The analysis conducted on 14 connected units identified a total of 3 clusters and 23 connections. The most cited authors were Bülent Esiyok with 20 citations and Alonso-Alvarez Luis with 16 citations. İsmail Kervankıran stands out with 8 connection strength, while Bülent Esiyok is notable for having 5 connection strength. Citation analysis demonstrated that Türkiye, Spain, and Italy are among the most influential countries in thermal tourism research, with Türkiye leading in the number of publications.

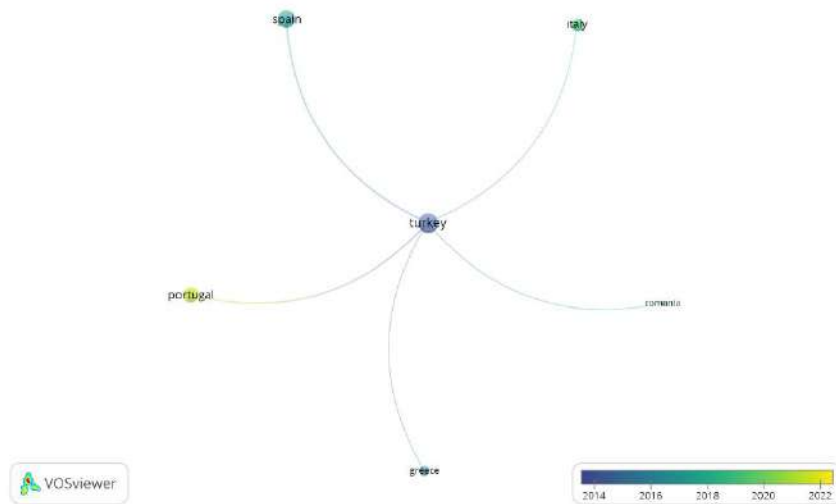


**Figure 2: Citation links of authors**

## 2.3. Citation of Countries

To create a network map of citations based on the countries of the publications, an analysis was conducted using the criteria that at least one publication was published by a country and at least

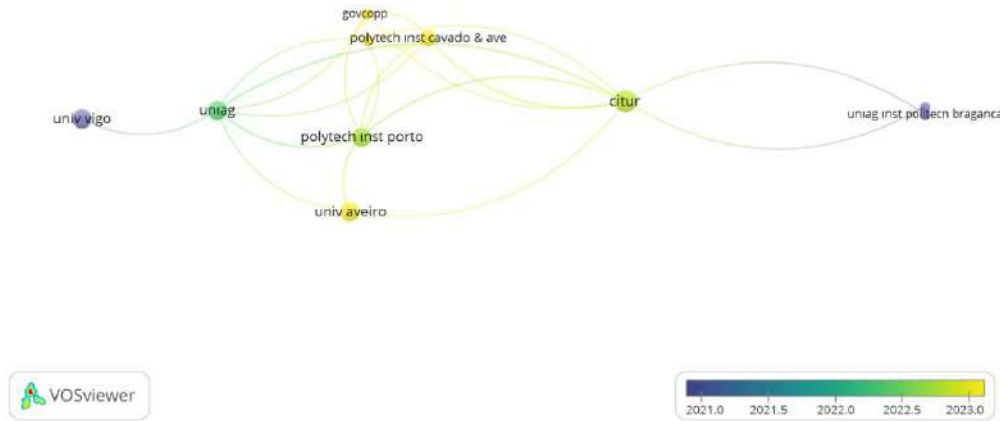
one citation was received. The analysis was performed on 8 connected units, and the results are presented in Figure 3. A total of 4 clusters, 14 connections, and 16 total connection strengths were identified. The countries with the most citations were Türkiye (60 citations), Spain (21 citations), Italy (16 citations), Poland (15 citations), and Portugal (14 citations). In terms of total connection strength, Italy stands out with 7 connection strength, followed by Spain and Poland with 6, and Portugal with 5. In terms of the number of publications, the ranking is as follows: Türkiye (16 publications) and Spain (11 publications).



**Figure 3: Citation analysis of countries**

#### 2.4. Citation of Organizations

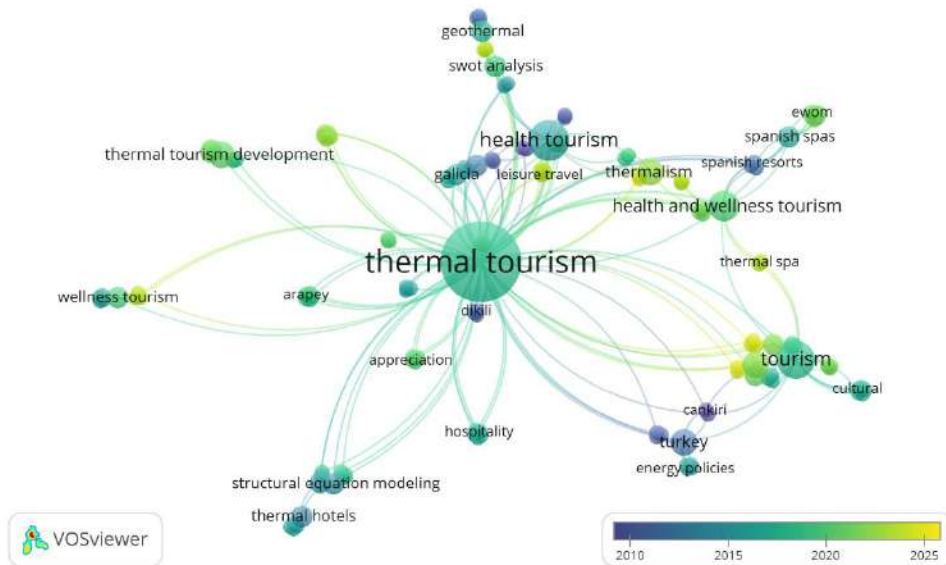
To create a network map of citations between organizations, an analysis was conducted using the criteria that at least one publication was published by an organization and at least one citation was received. The analysis was performed on 10 connected units. Cintur (4 publications), Polytech Inst Porto, and Uniag (3 publications each) are represented, while the organizations with the most cited publications were Bakent University (20 citations), Ben Gurion Univ Negev (14 citations), and Polytech Inst Porto (11 citations). A total of four clusters, 22 connections, and an overall connection strength of 23 were identified. Institutional contributions were found to be concentrated in a few key universities and research centers, indicating potential for expanding institutional networks.



**Figure 4: Citation analysis of organizations**

**2.5.Co-occurrence of All Keywords**

When examining the most frequently used keywords in publications related to thermal tourism, the following terms emerged: "thermal tourism" with 27 occurrences, "health tourism" with 7 occurrences, "tourism" with 6 occurrences, "health and wellness tourism" with 4 occurrences, and "wellness" with 3 occurrences. In terms of total connection strength, the most powerful expressions were "thermal tourism," "health tourism," and "tourism."

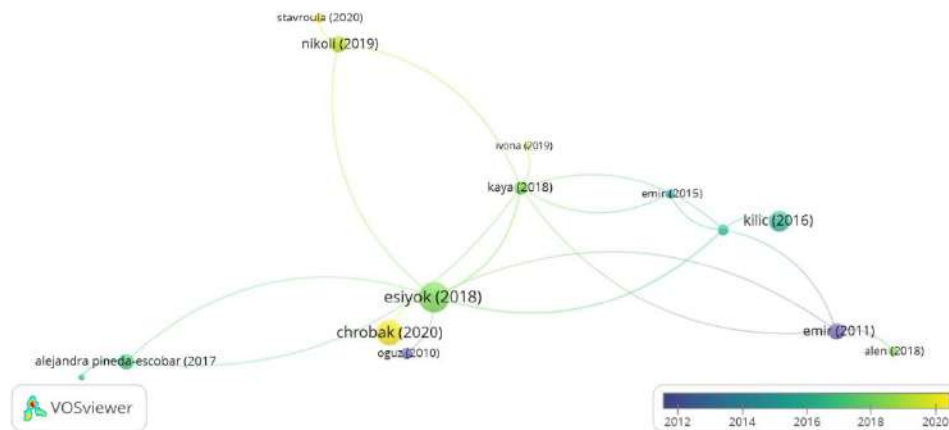


**Figure 5: Keyword analysis**

The analysis of 140 observation units with connections identified 21 clusters, 377 links, and a total connection strength of 391. The keyword analysis confirmed that "thermal tourism" remains the dominant research theme, often linked to "health tourism" and "wellness," reflecting the sector's integration with broader health and wellness tourism trends.

## 2.6. Bibliographic Coupling of Documents

Bibliographic coupling occurs when two independent sources cite common work. An analysis was conducted on 14 documents that had received at least one citation and had established connections. The analysis revealed 6 clusters and 19 connections, with a total connection strength of 23. Among the publications, the one with the most bibliographic coupling was Esiyok, which had 20 citations. Following that, Alonso-Alvarez received 16 citations, and Chrobak had 14 citations. In terms of total connection strength, the documents with the highest values were Esiyok, Kaya, and Kervankıran.

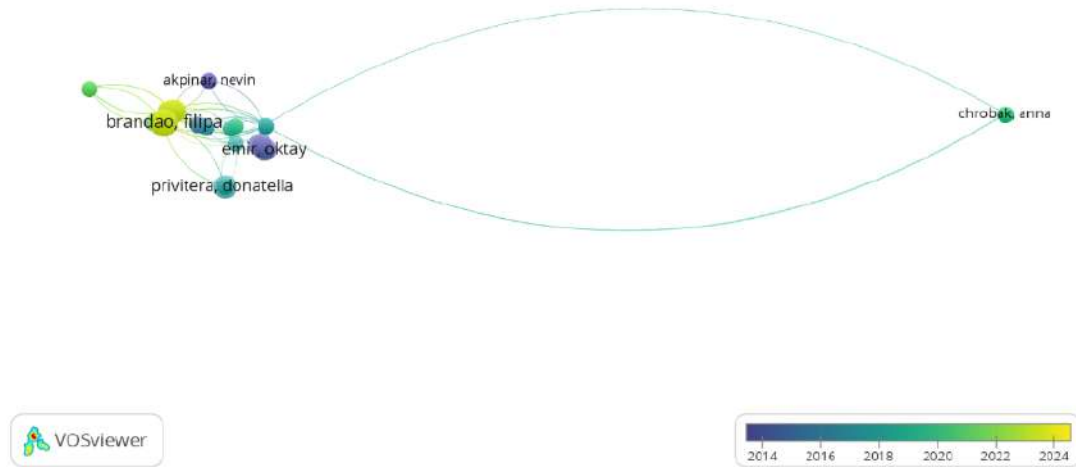


**Figure 6: Bibliographic coupling analysis of documents**

## 2.7. Bibliographic Coupling of Authors

The analysis focused on 43 authors, each having at least one publication and citation. This analysis identified 10 clusters, along with 236 connections. The total connection strength among the authors was 2594.

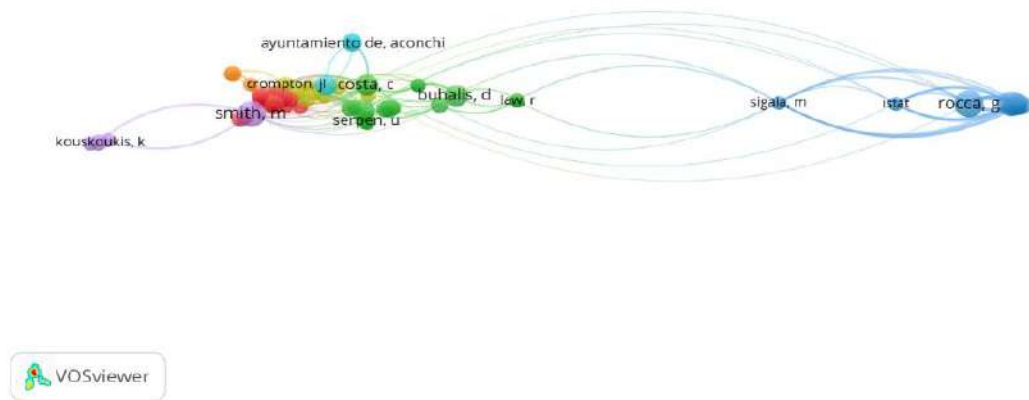
Among these authors, Esiyok, Kurtulmuşoğlu, and Özdemir had the highest level of bibliographic coupling, each having received 20 citations. On the other hand, the authors with the highest total connection strength were Pedro Liberto, Daila Liberto, and Filipa Brandao. Their combined connection strength amounted to 418.



**Figure 7: Bibliographic coupling analysis of authors**

### 2.8. Co-citation of Co-authors

Co-citation refers to different sources cited together in a publication. An analysis was performed on 60 units, each with a minimum of 3 citations. This analysis revealed a total of 1119 in connection strength, 344 individual connections, and 7 distinct clusters. The authors who had the highest number of co-citations were Rocca, with 11 co-citations, Smith, with 10, and Becheri, with 9.



**Figure 8: Co-citation analysis of co-authors**

Bibliographic coupling and co-citation analysis highlighted the most influential studies and scholars, showing that certain authors and works significantly shape the academic discourse in this field. However, the fragmented nature of research networks suggests that greater interdisciplinary collaboration and cross-regional studies could strengthen the knowledge base of thermal tourism.

### 3. DISCUSSION

A detailed bibliometric analysis has been conducted to identify academic trends in the thermal tourism literature. The data obtained indicate that thermal tourism, as a subfield of health tourism, has been gaining increasing interest over the years. However, rather than making a broad claim about comprehensiveness, this study provides an in-depth analysis of specific aspects of thermal tourism research. Previous bibliometric analyses in tourism literature have focused on wellness tourism, health tourism, and medical tourism, but the specific positioning of thermal tourism within these fields remains an area requiring further exploration (Dahanayake, Wanninayake, & Ranasinghe, 2023; Pereira, Costa, & Gomes, 2023).

The analysis conducted in the Web of Science database highlighted key themes and authors in thermal tourism studies and evaluated the structure of scientific collaborations between countries and institutions. The findings reveal that countries such as Türkiye, Spain, and Italy have made significant contributions to the thermal tourism literature. In recent years, there has been an increase in publications originating from Portugal. Notably, Türkiye has been positioned centrally in the field of thermal tourism, with a high number of publications and citations. This aligns with previous findings that indicate Türkiye's prominence in the thermal tourism sector due to its rich geothermal resources and strong academic interest in the field (Kozak, 2002; Demir & Dağ, 2024). Similar to Pereira et al. (2023), this study also found that European countries, particularly Portugal and Spain, are becoming more prominent in the thermal tourism literature, reflecting their growing policy and economic interest in the sector.

The analysis of co-authorship reveals that thermal tourism studies are predominantly concentrated around specific researchers and institutions. This finding is supported by Dahanayake et al. (2023), who highlight the existence of concentrated research clusters in wellness tourism studies, with a few influential scholars shaping the field. The co-authorship patterns in thermal tourism demonstrate a similar structure, where key researchers contribute significantly to network formation. Raquel Pereira, positioned at the center of the network, has co-authored a total of 7 works. Similarly, Vania Costa and Helena Gomes contributed as co-authors to 7 studies, receiving 2 citations and producing 2 documents. These authors are significant figures in strengthening the collaboration structure within the field. On the other hand, Alcina Nune, Sabel Sofia Loureina, and Fernanda Ferreria have co-authored 5 works in total. Although these authors occupy a more

peripheral position in the network, their contributions are noteworthy in terms of maintaining the continuity of collaboration. This pattern is consistent with prior bibliometric research, which indicates that well-established researchers and institutions tend to shape academic collaborations in emerging tourism fields (Pereira et al., 2023).

The authors with the most co-citations are Rocca, Smith, and Becheri, respectively. In terms of citation analysis, Suban (2023) noted that Napier et al. received 36.5% of total citations annually, indicating a highly influential publication. Similarly, this study found that Türkiye had the highest number of citations (60), while Bülent Esiyok emerged as the most cited author (20 citations). Furthermore, both studies utilized VOSviewer for visualizing bibliometric networks; however, while Suban (2023) focused solely on Scopus-indexed publications, this study analyzed a broader scope, including author collaborations, country-based citation trends, and keyword co-occurrences. This methodological choice enhances the robustness of the findings by incorporating a wider range of academic sources, enabling a more nuanced understanding of research trends. Pereira et al. (2023) emphasized that bibliometric analyses should integrate diverse datasets to ensure comprehensive assessments, a principle followed in this study by including a multi-faceted approach to citation mapping.

The keyword analysis reveals that the most powerful terms in terms of total connection strength are "thermal tourism," "health tourism," and "tourism." These keywords are strongly connected with concepts such as wellness, health tourist behavior, infrastructure, and environmental impacts. The alignment between thermal tourism and wellness tourism is in line with previous studies that emphasize the growing demand for integrated wellness experiences within the tourism industry (Smith & Puczko, 2014). This study also supports findings by Nikoli & Lazakidou (2019), who indicated that thermal tourism services in Europe and Greece have been shaped by evolving consumer preferences and economic policies.

In terms of institutional citation analysis, Cintur, Polytech Inst Porto, and Uniax are the most represented institutions with the highest number of publications, while the institutions that received the most citations are Başkent University (20 citations), Ben Gurion Univ Negev (14 citations), and Polytech Inst Porto (11 citations). This situation highlights the fact that although the majority of publications are in the social sciences field, thermal tourism is evolving as a multidisciplinary domain. As Pereira et al. (2023) suggest, the integration of tourism research with medical and environmental sciences is becoming increasingly common, which also reflects the



research patterns observed in this study. Additionally, Alonso, Alvarez (2012) examined the historical transformation of thermal tourism in Spain and found that institutional collaborations play a key role in shaping regional tourism development, a pattern also evident in this study's findings.

Expanding bibliometric analyses to assess the intersection of wellness and thermal tourism with broader tourism experiences, including psychological, economic, and environmental perspectives, will provide deeper insights into emerging trends. This recommendation aligns with the gaps identified by Pereira et al. (2023), who stress the necessity for more empirical research in wellness tourism sectors, particularly in under-researched domains such as thermal tourism. Furthermore, Emir & Saraçlı (2014) emphasized the importance of environmental factors in determining the location of thermal tourism investments, an aspect that future bibliometric analyses could explore further.

Publications from research centers in recent years have gained more presence in literature, enabling researchers to obtain more meaningful insights into the subject. Treating thermal tourism as a multidisciplinary field will significantly contribute to its development. This is consistent with previous research that emphasizes the necessity of integrating multiple disciplines, such as health sciences, environmental management, and hospitality studies, to fully understand the dynamics of thermal tourism (Pereira et al., 2023; Demir & Dağ, 2024).

#### **4. CONCLUSIONS**

This study not only provides an understanding of the current state of thermal tourism literature but also identifies research gaps for future studies. While research on health and wellness tourism and health tourist behavior has gained considerable attention in the literature, topics such as the fitness of elderly individuals, the benefits of thermal therapy for specific diseases, and studies targeting the middle and upper age markets are relatively underexplored. The global population is aging, and in aging societies, issues like fitness, healthy aging, and being the best version of oneself are becoming increasingly important. Topics such as utilizing thermal waters for rehabilitating lost abilities, segmentation of the middle and upper age groups, and addressing conservative trends are areas that have seen less attention in the research. More research is needed on how technological advancements, digital marketing, and sustainable practices influence thermal tourism competitiveness. While short-term health benefits are well-documented, long-term studies could assess the lasting effects of thermal therapy on physical and mental health. Examining government

strategies, incentives, and regulations could help shape policies that support thermal tourism infrastructure, workforce training, and environmental conservation. While thermal tourism has been widely studied, there is a need for more interdisciplinary, data-driven, and forward-looking research. Establishing specialized research centers focused on thermal tourism and increasing academic studies in this field will contribute to a deeper understanding and the development of innovative strategies. Addressing these gaps will help destinations enhance competitiveness, improve service quality, and sustain long-term growth in thermal tourism.

Strengthening interdisciplinary collaborations by integrating perspectives from public health, environmental sciences, and tourism management will contribute to the sustainability and long-term growth of thermal tourism while ensuring its alignment with evolving wellness tourism expectations. The findings of this study offer insights into the individual, societal, economic, and cultural aspects of thermal tourism. While not exhaustive, the study provides a useful perspective for future research and may serve as a reference for researchers and industry stakeholders in exploring different strategic approaches related to thermal tourism.

This study has certain limitations that should be acknowledged. First, while the selected database is a leading one, future research could include other databases to expand the scope. Second, the analysis reflects the situation at the time of data collection. Lastly, other software tools, aside from VOSviewer, may be used in future studies due to their different features.

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**JHMT**

**Editorial**

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## **Evaluation of Satisfaction Levels of Somalian Patients Coming to Turkey for Medical Tourism\***

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Research Article

### **Abstract**

**Aim:** In this study, the satisfaction levels of Somali patients who came to Turkey for medical tourism were evaluated.

**Methods:** In this cross-sectional descriptive study, a questionnaire was used to collect data. The population of study consists of private and public hospitals operating in Istanbul and Ankara, which Somali patients prefer for medical tourism. In line with the data received from the Ministry of Health, the number of samples to be included in the study was determined as 337 to obtain 80% power at  $\alpha=0.05$  level from a total of 2742 patients coming from Somalia for medical tourism in 2019. The questionnaires were administered face-to-face by the researcher between July 20, 2021,

\*This study was produced from the master's thesis titled "Evaluation of Satisfaction of Somali Patients Coming to Turkey for Medical Tourism"

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and May 20, 2022, in hospitals operating in Istanbul and Ankara, which are the most preferred hospitals for Somali patients.

**Results:** As a result of the study, It was determined that the majority of Somali patients who preferred Turkey mostly for IVF, urology and orthopedics treatments did not have health insurance and used intermediary organizations for their travels. The top three reasons with the highest satisfaction average are "Cheaper travel costs than other countries", "Cheaper doctor and fees/taxes" and "Feeling unsafe during treatment", while the reasons with the highest dissatisfaction average are "World-class doctors, nurses and medical staff", "High-tech medical equipment" and "Visually appealing physical facilities".

**Conclusion:** It was determined that the patients were satisfied with the service they received, would choose Turkey again for their treatment and would recommend it to others.

**Keywords:** Health tourism, medical tourism, satisfaction somalia patients, medical tourism in Turkey

## INTRODUCTION

Medical tourism is a booming industry. Nowadays, people are in search of both to regain their health and to travel under favorable conditions and to have different vacation experiences. Medical tourism includes various travel activities to protect health, improve health or find solutions to health problems (Heung et al., 2010). Among the reasons that lead to medical tourism are dissatisfaction with the health services offered in their own countries or lack of service, the desire to access full, quality and fast health services, the desire to receive services from improved health technologies, the desire to receive health services at a cheaper price, the desire to get away from spatial problems, and the desire to take a vacation while receiving health services (Crooks et al., 2015). In 2019, the medical tourism market was valued at USD 104.68 billion and is estimated to be worth USD 273.72 billion by 2027 (Sanjivan Gill, 2020). This rate is important for developing Türkiye, where tourism revenues are 3.1% of GDP (TÜROFED, 2019). Futurologists predict that the medical tourism industry will be a promising sector and believe that it will be the highest value-added service sector through cross-industry convergence during the Fourth Industrial Revolution (Seo and Park, 2018). In this context, many governments around the world are keen to invest in and develop the medical tourism industry.

Medical tourism, which is included in the strategic plans of many countries, also has an important place in Turkey. The Turkish government has made significant progress in developing

medical tourism. With the Health Transformation Program, it has expanded the way for health tourism and tourism health (Turkish Health Foundation Report, 2010). The International Health Services Anomin Company (IHSAC), as a related organization of the Ministry of Health, started operations in 2019 to promote the services offered in Turkey in the field of international health services, to support and coordinate the activities of the public and private sectors for medical tourism, and to make recommendations to the Ministry on policies and strategies regarding international health services, service delivery standards and accreditation criteria (Ministry of Health IHSAC).

The cost of healthcare in Turkey is significantly lower than in developed economies in the US and Europe. Although healthcare businesses seem like a service sector, the devices and machines to perform the service affect the sector cost (Saraç, 2024). In addition to relatively low costs, the use of qualified doctors and advanced technology, Turkey ranks sixth in the world with 41 JCI accredited health institutions (United Arab Emirates 217, Saudi Arabia 108, Brazil 75, Thailand 62, India 5) and has an important place in medical tourism preference due to its easy access to Turkey, many spas, cultural, historical, and natural beauties (Bahar and Akyürek, 2022; JCI, 2024). In terms of medical tourism, Turkey is most preferred in the fields of gynecology, internal medicine, ophthalmology, medical biochemistry, general surgery, dentistry, orthopedics and traumatology, infectious diseases, and ear-nose-throat. In 2024, a total of 1.506.442 people came to Turkey to receive health care services and the revenue generated from these visits amounted to USD 3.022.957 thousand (Ministry of Health IHSAC). Turkey strives to be the best medical tourism destination in the world in medical tourism. According to the 2020-2021 ranking of the Medical Tourism Index, which evaluates the attractiveness of countries as medical tourism destinations, the top 10 countries for medical tourism in the world are Canada, Singapore, Japan, Spain, England, Dubai, Costa Rica, Israel, Abu Dhabi, and India. Turkey ranks 30th among 46 countries (Medical Tourism Index 2020-2021).

Medical tourism has many benefits for countries. Many developing countries associate medical care with tourism and try to further develop their economies (Iordache et al., 2013). Medical tourism contributes to economic diversification and increased profitability of the country by providing foreign exchange inflows, increasing employment of local people, improving the skills of local staff, encouraging investment in health services, improving the quality of medical and related services, and contributing to improving the national health of the country (Vovk et al.,



2021). For this reason, many countries are trying to develop medical tourism, transfer investments to this sector and attract foreign health tourists. Although Turkey has many advantages in terms of medical tourism, it is not at the desired level. Countries that come to Turkey for medical tourism are countries that have mostly Turkish population in their countries, whose health services are expensive, whose health insurance does not cover health services, who wait a long time for access to health services, who are Muslim, and who have bilateral agreements in the field of health (Tengilimoğlu, 2021). Somalia includes many reasons among the countries mentioned above and the reasons that lead to medical tourism. However according to Ministry of Health IHSAC data, 756,926 patients received health services in our country within the scope of health tourism and tourist health in 2019. According to the data received from the Ministry of Health, a total of 2,742 people came from Somalia for medical tourism in 2019 and 0.4% of the total medical tourists in Türkiye are Somali patients (Ministry of Health IHSAC). With this study, it was aimed to examine the satisfaction levels of Somali patients receiving services within the scope of medical tourism in Turkey regarding various dimensions of the service they received.

In addition, it was tried to determine the reasons for choosing Turkey for medical tourism, recommending Turkey to others, and coming back if needed. When the destination studies conducted for medical tourism to Turkey were examined, there were no studies conducted for Somali national patients. In this respect, this study is the first study in the literature. This study is important in terms of increasing destinations from Somalia to Turkey and discovering new country markets similar to Somalia by determining the reasons why Somali patients choose Turkey for medical tourism.

## 1. RESEARCH METHODOLOGY

The study was designed as cross-sectional and descriptive.

### 1.1. Working Group

Somali patients mostly prefer health institutions operating in the field of medical tourism in Istanbul and Ankara provinces in Turkey. Therefore, the population of study consists of private and public hospitals operating in Istanbul and Ankara, which Somali patients prefer for medical tourism. The power of the study is expressed as  $1-\beta$  ( $\beta$  = probability of type II error) and in general, studies should have 80% power (Cohen, 1998; Bankır 2011). In line with the data received from the Ministry of Health, the number of samples to be included in the study was determined as 337

to obtain 80% power at  $\alpha=0.05$  level from a total of 2742 patients coming from Somalia for medical tourism in 2019. In the study, convenience sampling method was used to determine the sample. In this context, the study was carried out in a total of 8 hospitals, including 4 private hospitals operating in Istanbul, 3 private and 1 state hospital operating in Ankara, which are mostly preferred by Somali patients.

### **1.2. Data Collection Tool and Collection of Data**

A questionnaire was used as a data collection tool in the study. Since the questionnaires in the literature did not fully cover the purpose of the study, a new questionnaire created by the researcher was used in the study. In order to create the survey questions, both the studies conducted to determine the reasons for preference and satisfaction in medical tourism were examined and interviews were conducted with Somali patients on this subject. The questionnaire consists of 34 questions in total. While 17 questions that make up the questionnaire are aimed at determining the demographic information and reasons for preference of the patients, 17 questions are aimed at determining their satisfaction with the service they have received. The survey is a 5-point Likert type and is rated between "Very Dissatisfied", "Not Satisfied", "Not Sure", "I am satisfied", "Very Satisfied".

A pilot study was conducted with 15 people to determine whether the questionnaire was understandable. After the questions were understood by everyone, the questionnaires were applied face-to-face by the researcher between July 20, 2021, and May 20, 2022, to the participants who voluntarily wanted to participate in the study.

### **1.3. Ethical Aspects of the Study**

Ethical Approval dated 14.06.2021 and numbered 08 was obtained from the Ethics Committee of a Ankara Yildirim Beyazit University to conduct the study. Before starting the study, the purpose of the study was explained to the participants and their verbal consent was obtained for voluntary participation in the study.

### **1.4. Data Analysis**

Data were analyzed with IBM SPSS version 22 (IBM, Armonk, New York) statistical package program. Number, percentage, mean and standard deviation values were used to analyze descriptive data. The conformity of continuous variables (age, income) to normal distribution was analyzed graphically and by Shapiro-Wilk test. The result of the Reliability analysis conducted in

the study was  $\alpha=0.806$ . According to this result, the survey questions were found to be highly reliable.

## 2. ANALYSIS

The mean age of the participants was 34.8 years, 54% were male, 46% had postgraduate degrees, and the mean monthly income was \$921.39 (Table 1).

**Table 1: Participant Characteristics**

		N	%
Gender	Female	154	46
	Male	183	54
Educational Status	Primary school	57	16,9
	High School	76	22,6
	Graduate	64	19
	Postgraduate degrees	155	46,1
	Total	337	100
Mean and Standard Deviation			
Age (year)	34,88 ±10,49		
Income (\$)	921,39 ± 662		

63.2% of the participants stated that they had been to Turkey for medical treatment before and that they were currently in Turkey for medical treatment mostly for IVF (12.5%), urology (12.3%) and orthopedics (11.7%). It was observed that 54.9% of the participants received health care services outside of Turkey and Somalia and 32.6% of the participants did not prefer these countries they had previously visited because of "Recurrent errors during service delivery", 16% because of "Long waiting time for service delivery" and 15.4% because of "High cost of health services". 58.5% of the participants stated that they did not have health insurance, 53.7% stated that they used intermediary organizations for medical tourism travel, 42.6% stated that they found intermediary organizations somewhat useful for medical tourism travel, and 34.1% stated that hospital accreditation was effective in medical tourism travel preferences (Table 2).

38% of the participants stated that they received information about hospitals in Turkey through "Recommendations from friends and relatives" and 46.9% of the participants stated that they preferred hospitals in Turkey because of "Easy accessibility", 17.2% because of "High technology", 14.5% because of "Internationally renowned physicians" and 11.6% because of "Affordable costs". 77.2% of the participants stated that they would prefer Turkey again for their treatment and 75.4% would recommend Turkey to others for medical tourism (Table 2).

**Table 2: Medical Tourism Experiences of Participants**

		n	%			n	%
Having Health Insurance	Yes	140	41.5	Reason for Coming to Turkey for Medical Tourism	In Vitro Fertilization	42	12.5
	No.	197	58.5		Urology orthopedics	41	12.3
Previously Coming to Turkey for Medical Treatment	Yes	213	63.2		Checkup	29	8.6
	No	124	36.8		Heart diseases	23	6.8
Status of Receiving Health Services Outside Türkiye and Somalia	Yes	185	54.9		Hair Transplant	21	6.2
	No	152	45.1		Allergy	19	5.6
Status of Using Intermediary Institutions in Travels	Yes	181	53.7		Kidney failure	15	4.5
	No	156	46.3		Gynecology	13	3.9
Thoughts on How Helpful the Brokerage Firm is	Extremely Helpful	48	26.52		Nose Aesthetics	13	3.9
	Beneficial	41	22.65		Cardiology	9	2.7
	Somewhat Helpful	77	42.54		Bladder Tumor	9	2.7
	not helpful	15	8.29		Eye diseases	9	2.7
How to Obtain Information About Hospitals in Turkey	Recommendation from friends and relatives	128	38		Teeth and Mouth	9	2.7
	TV and radio news / Internet	96	28.5		Leukemia	7	2.1
	Recommendation from a doctor in your country	64	19		Diabetes	6	1.8
	International Promotion Fairs	34	10.1		Ear Nose Throat	6	1.8
	Other*	15	4.5		Lung Disease	5	1.5
Reasons Why Participants Do Not Now Prefer the Country They Previously Visited for Medical Tourism	Recurrent errors when performing services	110	32.6		Cerebral palsy	5	1.5
	Long waiting hours for the service to be performed	54	16		Gastrology	4	1.2
	Other *	54	16		Tourism	4	1.2
	High cost of healthcare	52	15.4	Pediatry	4	1.2	
	Lack of Health Technologies and equipment	36	10.7	dementia	3	0.9	
	Concerns about the accuracy of diagnosis made by physicians	27	8	Prostate cancer	one	0.3	
	Mistreatment of staff	4	1.2				
Reasons to Choose Turkish Hospitals				The Situation of Preferring Turkey Again	Yes	260	77.2
	Easily accessible	158	46.9		No	77	22.9
	Having high technology	58	17.2	Status of Recommending Turkey for Medical Tourism	Yes	254	75.4
	Having famous physicians in the international arena	49	14.5		No	83	24.7
	Affordable costs	39	11.6	The Role of Hospital Accreditation in Medical Tourism	Yes	115	34.1
	High recognition	31	9.2		No	91	27
Other	2	0.6	Travel Preferences	I don't know about accreditation	131	38.9	

The highest three satisfaction rates of the participants were determined as 65% (n: 219) "Cheaper travel costs than other countries", 64.3% (n: 217) "Cheaper doctor and fees/taxes" and 61.7% (n: 208) "Feeling unsafe during treatment", respectively. The lowest three satisfaction rates of the participants were determined as 42% (n: 144) "Since English is widely used in Turkey, communication is not a barrier", 43% (n:145) "World-class doctors, nurses and medical staff" and "Less waiting time", respectively (Table 3).

**Table 3: Frequency Information Regarding Service Satisfaction Questions**

	Very Dissatisfied n (%)	Not Satisfied n (%)	Not Sure n (%)	I am satisfied n (%)	Very Satisfied n (%)
World-class doctors, nurses and medical staff	142 (42.1%)	32 (9.5%)	18 (5.3%)	112 (33.2%)	33 (9.8%)
High-tech medical equipment	123 (36.5%)	37 (11%)	21 (6.2%)	126 (37.4%)	30 (8.9%)
Visually appealing physical facilities	60 (17.8%)	78 (23.1%)	42 (12.5%)	112 (33.2%)	45 (13.4%)
Fast provision of requested services	48 (14.2%)	70 (2.8%)	49 (14.5%)	130 (38.6%)	40 (11.9%)
Quality service	25 (7.4%)	74 (22%)	53 (15.7%)	104 (30.9%)	81 (24%)
Less waiting time	17 (5%)	84 (24.9%)	91 (27%)	92 (27.3%)	53 (15.7%)
Quality of patient care	14 (4.2%)	43 (12.8%)	86 (25.5%)	117 (34.7%)	77 (22.8%)
Affordable cost of medical treatment	17 (5%)	36 (10.7%)	93 (27.6%)	156 (46.3%)	35 (10.4%)
Cheaper doctor and fees/taxes	24 (7.1%)	25 (7.4%)	71 (21.1%)	169 (50.1%)	48 (14.7%)
Cheaper travel costs than other countries	44 (13.1%)	45 (13.4%)	67 (19.9%)	103 (30.6%)	78 (23.1%)
Extras such as airport services and visa extension services	44 (13.1%)	45 (13.4%)	67 (19.9%)	103 (30.6%)	78 (23.1%)
Special prices for various medical treatment packages	37 (11%)	65 (19.3%)	39 (11.6%)	110 (32.6%)	86 (25.5%)
Religious and cultural affinity	51 (15.1%)	52 (15.7%)	33 (9.8%)	101 (30%)	100(29.7%)
Free/affordable post-treatment travel tours	51 (15.1%)	59 (17.5%)	48 (14.2%)	87 (25.8%)	92 (27.3%)
Since English is widely used in Turkey, communication is not a barrier	52 (15.4%)	82 (24.3%)	59 (17.5%)	95 (28.2%)	49 (14.5%)
Feeling unsafe during treatment	57 (16.9%)	45 (13.4%)	27 (8%)	143(42.4%)	65 (19.3%)

Note: To calculate highest and lowest satisfaction, the statements "I am satisfied" and "Very Satisfied" were summed. To calculate highest and lowest dissatisfaction, the statements "Very Dissatisfied" and "Not Satisfied" were summed.

The highest dissatisfaction rates of the participants were determined as 51.6% (n: 174) "World-class doctors, nurses and medical staff" 47.5% (n: 160) "High-tech medical equipment"

and 40.9% (n: 138) "Visually appealing physical facilities" respectively. The lowest three dissatisfaction rates of the participants were determined as 14% (n: 49) "Cheaper doctor and fees/taxes", 16% (n:53) "Affordable cost of medical treatment" and %17 (n:57) "Quality of patient care", respectively. (Table 3).

### 3. DISCUSSION

In the study, the satisfaction levels of Somali national patients who receive services within the scope of medical tourism in Turkey towards various dimensions of the service they receive, their reasons for choosing Turkey for medical tourism, their recommendation of Turkey to others and their status of coming again if needed were determined. As a result of the study, it was determined that the majority of Somali patients coming to Turkey for medical tourism were male (54.3%), had postgraduate education, average age was 35 years and average monthly income was \$921.39. In the studies conducted, it was seen that the patients benefiting from medical tourism in Turkey were mostly male, in the middle age group, with a high level of education (Kılınç, 2017; Balcı, 2019; Cemali ve Derin 2019; Aydın ve Demirel 2011). On the contrary, in the study conducted by Polat and Aydın (2021) it was seen that patients coming for medical tourism were generally female. In line with these findings, it can be said that male patients who have more freedom to travel than women, patients with higher education levels who can do more research and have a higher level of awareness than people with low education levels, and middle-aged patients prefer medical tourism more because middle-aged patients may have better travel opportunities. Accordingly, medical tourism marketing studies can be conducted for this target market.

It was determined that the majority of Somali patients (58.5%) who preferred Turkey for IVF (12.5%), urology (12.3%) and orthopedics (11.7%) treatments did not have health insurance and used an intermediary organization for their travels (53.7%). The clinical branches chosen by Somali patients for medical tourism in Turkey are similar to the clinical branches preferred for medical tourism in Turkey published by the Ministry of Health. Therefore, the Ministry of Health can further develop medical tourism in this respect (Ministry of Health IHSAC).

In the study conducted by Akdu (2014), it was determined that patients applied individually for medical travel (72%) and used intermediary organizations very little (6.3%), which was not similar to our study results. On the contrary, in the study conducted by Balcı (2019), similar to our study, it was observed that the majority of patients (31.1%) made their medical travels with an

intermediary organization. In our study, Somali patients generally found the intermediary organizations they used in medical tourism travel useful. Intermediary organizations that provide the integration of tourism and health sector play an important role in the destination decision of health tourists, during and after the destination (Bayrak, 2020). Therefore, there is a need for more intermediary organizations in Turkey that can attract patients from the medical tourism market in the international arena, both quantitatively and qualitatively.

In our study, it was determined that patients generally utilized the recommendations of their relatives (38%) and television, radio, and internet (28.5%) in choosing a hospital in Turkey. In studies conducted in the literature, similar to our study, it was determined that patients generally have information about hospitals through television, radio, internet, and recommendations of their relatives (Balci, 20019; Cemali, 2019). In line with these findings, it can be concluded that the recommendations of relatives and relatives as well as social media are important in the selection of destinations and hospitals in medical tourism. Therefore, if the patients who come for medical tourism leave the country satisfied, this may lead to more patients coming to the country.

Somali patients preferred hospitals in Turkey because they are easily accessible (46.9%), have high technology (17.2%), have international, famous physicians (14.5%) and affordable costs (11.6%). In a study by Aksoy and Süreyya (2019), similar to our study, the main reasons for patients to choose Turkey for medical tourism were trust in Turkish doctors and healthcare personnel (45.9%) and low treatment costs (40.32%). In another study, the reasons for choosing Turkey for medical tourism were the affordable prices (48.98%), the expertise of the medical staff (42.86%) and the ease of transportation (40.82%) (Demir 2020).

Gündüz et al. (2019) found in their study that physical proximity, visa facilities, low cost and accessibility factors are effective in choosing Turkey for medical tourism. These results are consistent with the results of the study. In addition, these results show that medical tourism in Turkey has the opportunity to reach European, Asian, Middle Eastern and African countries, especially by using the advantage of its geographical location.

In a study conducted by Akdu (2014), it was stated that factors such as cost and waiting time, similarity of belief, technological infrastructure, flight time, customer experience, tourism attractiveness, legal and ethical restrictions were important in choosing hospitals in Turkey. These results are consistent with the reasons for Somali patients' preference for "easy accessibility", "having high technology", "religious and cultural proximity" in our study. In the study conducted

by Aydın and Karamehmet (2017), it was determined that cost reduction and legal regulations were effective for medical tourism to choose Turkey. Another important finding of our study is that Somali patients who previously went to the country for medical tourism do not prefer it now because of recurring errors (32.6%), long waiting time (16%), high cost (15.4%), lack of equipment (10.7%) and concerns about the diagnosis made by physicians (8%). Turkey has the potential to address all the reasons for non-preference found in our study. Therefore, it can attract more patients from the medical tourism market by improving the preferred reasons.

Some of the Somali patients (38.9%) stated that they did not know what accreditation was, while others (34.1%) stated that hospital accreditation was effective in their medical tourism travel preferences. In their study, Forgione and Smith (2007) found that the economic situation of the country, political environment, and regulatory standards as well as hospital accreditation and related factors stand out among the factors affecting hospital choice for medical tourism. Accordingly, the results obtained by Smith and Forgione are similar to the results obtained in this study.

The top three reasons with the highest satisfaction average were "Cheaper travel costs than other countries", with rate of 65% "Cheaper doctor and fees/taxes" with rate of 64.3% and "Feeling unsafe during treatment", with rate of 61.7% . The reason with highest dissatisfaction rate was determined as "World-class doctors, nurses and medical staff" with rate of 51.6%, "High-tech medical equipment" with rate of 47.5% and "Visually appealing physical facilities" with rate of 40.9%. It is a remarkable finding that Somali patients prefer hospitals with high technology (47,5%) and internationally renowned physicians (51,6%), while their satisfaction rates with these two factors are lower. In line with these findings, it can be concluded that hospitals can make improvements both in the field of technology used and in the health personnel employed to ensure that they are preferred by more health tourists. Somali patients who came for medical treatment stated that they would prefer Turkey again for their treatment (77.2%) and would recommend it to others for medical tourism (75.4%). Similar to this study, Demir (2010) also found a significant and positive relationship between patient satisfaction and intention to receive services again. When the destination studies conducted for medical tourism in Turkey are examined, there are no studies conducted for Somali patients.



#### 4. CONCLUSIONS

Globalization has affected the political, economic, and socio-cultural characteristics of countries all over the world since the 1970s. One of the important issues related to this transformation is the development of medical tourism. Although the concept of medical tourism is not a result of globalization, it has turned into a major service export all over the world. Some countries focus on medical tourism to gain a competitive advantage among other countries. Turkey has many advantages to be one of the top countries in medical tourism.

The rapprochement between Somalia and Turkey continues to develop in many fields such as health, economic, social, and military. Both Turkey and Somalia are among the patron members of the Organization of Islamic Cooperation. Somalia's embassy in Turkey provides ease of access for patients. While Somali patients previously preferred to go to countries such as India, Germany, and Malaysia for medical tourism, today they have started to prefer Turkey because of its religious, cultural, ease of travel, low cost, general quality of care and ease of access. In this study, it was tried to determine the satisfaction levels of Somali patients who receive services within the scope of medical tourism in Turkey towards various dimensions of the service they receive. In addition, it was tried to determine the reasons for choosing Turkey for medical tourism, recommending Turkey to others, and coming back if needed. The study aimed to increase destinations from Somalia to Turkey by determining the reasons why Somali patients choose Turkey for medical tourism and to discover new country markets similar to Somalia.

As a result of the study, it was determined that Somali patients were satisfied with the service they received and would recommend Turkey to others and would like to come again if needed. In the study, it was also determined that they preferred Turkey because of "Easy accessibility", "Having high technology", "Having internationally renowned physicians", "Affordable costs" and were mostly satisfied with "Cheaper travel costs than other countries", "Cheaper doctor and fees/taxes" and "Feeling unsafe during treatment". As a result of the findings of the study, the following recommendations were made to increase destinations from Somalia to Turkey and to explore new country markets similar to Somalia.

- It is a remarkable finding that Somali patients prefer hospitals with high technology and internationally renowned physicians, but their satisfaction rates with these two factors are lower. In order for hospitals to be preferred by more Somali health tourists, improvements can be made both in the field of technology used and in the health personnel employed.

- Especially since satisfied patients have an important place in terms of word-of-mouth marketing, improvement studies can be carried out on the factors that cause dissatisfaction of dissatisfied health tourists. In this way, it can ensure that patients coming for medical tourism leave satisfied and more health tourists come to the country. It can make it more attractive for Somali patients to prefer Turkey as a medical destination.

- The Ministry of Health can conduct inspections and develop incentives to ensure that intermediary organizations increase both quantitatively and qualitatively.

- Doctors and other health personnel can be trained on communication to increase the satisfaction of Somali patients.

- Turkey ranks 6th in the world in terms of the number of hospitals with JCI accreditation certificate and the highest number of accredited hospitals is in Istanbul and second in Ankara. However, this is not sufficient, and the number of accredited hospitals accepted by international organizations should be increased. Conducting accreditation studies by TÜSEB is an important opportunity for the development of the medical tourism market in Turkey.

There are no studies in the literature on the satisfaction of Somali patients regarding their destinations in other countries. According to the data of the Ministry of Trade, it is reported that patients coming to Turkey for medical tourism mostly come from Germany, the United Kingdom, Russia, Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan and Afghanistan (Ministry of Trade, 2024). However, the studies conducted have not focused on patients coming to our country from a specific country and/or region for medical tourism. The studies have mostly been conducted with patients coming from Europe, America and Arab countries (Akdu, 2014; Aksoy ve Süreyya, 2019; Aydın ve Demirel, 2017; Polat ve Aydın, 2021). Studies investigating the satisfaction of patients from African countries to our country with medical tourism are limited. Attracting patients for medical tourism from African countries such as Somalia, where bilateral cooperation is established on many issues, may increase our market share. In the studies to be conducted from now on, examining the satisfaction levels of patients coming for medical tourism and the reasons for choosing our country on a country basis may provide important evidence for the applications to be made for the target market.

In this respect, although this study is the first and important study in the literature, it has some limitations. This study is limited to Somali patients coming from Somalia for medical tourism in Turkey. In addition, the study is limited to private and public hospitals operating in Istanbul and

Ankara provinces, which are most preferred by Somali patients for medical tourism. Therefore, this study cannot be generalized both for all patients coming to Turkey for medical tourism and for all Somali patients.

**Conflicts of Interest:** The authors report that there are no competing interests to declare.

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**Correction:** The correction made to the article titled “Evaluation of the Effect of Body Image Perception on Patient Satisfaction and Quality of Life in Medical Tourists Undergoing Bariatric Metabolic Surgery” are as follows.

**Correction Explanation:**

Yaşar Demir & Saliha Ozpınar (2024). “Evaluation of the Effect of Body Image Perception on Patient Satisfaction and Quality of Life in Medical Tourists Undergoing Bariatric Metabolic Surgery.” Int Journal of Health Manag. and Tourism 2024 9(1), 62-75 <https://doi.org/10.31201/ijhmt.1422564> In the referenced article, it was declared by the responsible author that the study “derived from his doctoral thesis” was not added by mistake. This correction text is presented in order to eliminate the error in the article. The explanation text presented below is published as a correction as a footnote explanation of the relevant article.

**Article URL:** <https://dergipark.org.tr/tr/pub/ijhmt/issue/83822/1459889>

**Reported Corrected Version:**

**Footnote:** This study is derived from Yaşar DEMİR's doctoral dissertation "Evaluation of the relationship between body image perception, patient satisfaction and quality of life of those who have obesity surgery within the scope of medical tourism".