E-GOVERNMENT SERVICES IN PUBLIC ADMINISTRATION IN TÜRKİYE: USER OPINIONS ON THE MINISTRY OF HEALTH MHRS SYSTEM[1]

TÜRKİYE'DE KAMU YÖNETİMİNDE E-DEVLET HİZMETLERİ: SAĞLIK BAKANLIĞI MHRS SİSTEMİNE İLİŞKİN KULLANICI GÖRÜŞLERİ

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ABSTRACT

The research aimed to evaluate MHRS user experiences in the context of public administration principles and to identify the strengths and weaknesses of the system. In the research carried out with the qualitative research method, the opinions of the participants were consulted with the help of an interview form. As a result of the interviews with fifteen participants, five main themes were identified: system usage and accessibility, service quality and user experience, digital transformation and public service perception, inclusion and digital inequalities, security and future prospects. The findings revealed that MHRS has brought about a significant transformation in access to public health services but brings technical, social, and managerial challenges. It has been determined that proxy use is widespread, different experiences are experienced according to digital literacy levels, and technical glitches due to system density negatively affect user satisfaction. Although the system offers advantages in terms of time management, the difficulty of finding an appointment outside of working hours has been seen as a significant issue. It has been revealed that elderly individuals and users with low digital literacy levels have serious difficulties in using the system, and accessibility features for disabled individuals are lacking. In line with the results of the research, it was recommended to increase the system infrastructure capacity, create flexible appointment times, develop policies to reduce digital inequalities, implement transparent communication strategies on data security, organize staff training programs, improve the user interface and improve the digital literacy skills of citizens.

Keywords: Digitalization, Health, E-Government, Public Administration, MHRS

ÖZET

Bu araştırma, kamu yönetimi ilkeleri bağlamında MHRS kullanıcı deneyimlerini değerlendirmeyi ve sistemin güçlü ve zayıf yönlerini belirlemeyi amaçlamıştır. Niteliksel araştırma yöntemiyle yürütülen araştırmada, katılımcıların görüşleri bir görüşme formu yardımıyla alınmıştır. On beş katılımcıyla yapılan görüşmeler sonucunda beş ana tema belirlenmiştir: sistem kullanımı ve erişilebilirlik, hizmet kalitesi ve kullanıcı deneyimi, dijital dönüşüm ve kamu hizmeti algısı, kapsayıcılık ve dijital eşitsizlikler, güvenlik ve gelecek beklentileri. Bulgular, MHRS'nin kamu sağlık hizmetlerine erişimde önemli bir dönüşüm sağladığını ancak teknik, sosyal ve yönetimsel zorluklar da getirdiğini ortaya koymuştur. Vekil kullanımının yaygın olduğu, dijital okuryazarlık seviyelerine göre farklı deneyimler

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yaşandığı ve sistem yoğunluğundan kaynaklanan teknik aksaklıkların kullanıcı memnuniyetini olumsuz etkilediği belirlenmiştir. Sistem zaman yönetimi açısından avantajlar sunsa da, çalışma saatleri dışında randevu bulmanın zorluğu önemli bir sorun olarak görülmüştür. Yaşlı bireylerin ve düşük dijital okuryazarlık seviyesine sahip kullanıcıların sistemi kullanmada ciddi zorluklar yaşadığı ve engelli bireyler için erişilebilirlik özelliklerinin yetersiz olduğu ortaya çıkmıştır. Araştırma sonuçlarına paralel olarak, sistem altyapı kapasitesinin artırılması, esnek randevu saatlerinin oluşturulması, dijital eşitsizlikleri azaltmaya yönelik politikaların geliştirilmesi, veri güvenliği konusunda şeffaf iletişim stratejilerinin uygulanması, personel eğitim programlarının düzenlenmesi, kullanıcı arayüzünün iyileştirilmesi ve vatandaşların dijital okuryazarlık becerilerinin geliştirilmesi önerilmiştir.

Anahtar Kelimeler: Dijitalleşme, Sağlık, E-Devlet, Kamu Yönetimi, MHRS

INTRODUCTION

The transformative effect of technological developments in the historical course of public administration has not only changed the formal nature of administrative processes, but has also brought about a structural reconstruction process in a wide range from the way public services are provided to the functioning of decision-making mechanisms. While this change made it necessary to go beyond classical bureaucratic patterns, it made it necessary to effectively evaluate the opportunities offered by digital technologies in order for the public administration to adapt to new conditions (Yılmazer, 2017, p. 54). It is possible for the state to make its functions sustainable not only with the provision of services confined to physical spaces, but also with the speed, flexibility and prevalence provided by information technologies. This transformation process, which goes beyond the centralization of public service provision and turns towards a multi-actor and interactive approach, has brought with it the need for a comprehensive restructuring to strengthen the administrative capacity with technological equipment (Kavuncubaşı and Yıldırım, 2018, p. 56).

The fact that digitalization has become such a critical position in public administration goes far beyond the transformation of administrative tools and carries the nature of the citizen-state relationship to a different dimension. With the management processes starting to be carried out in digital environments, the public service turns into a dynamic structure that is shaped not only by the internal functioning of the institutions, but also by interacting with all layers of the society (Baş and Gökbunar, 2004, p. 71). The facilitation of access to information, the two-way and real-time communication result in public institutions having to make their decisions in a more transparent and accountable manner, thus the formation process of public policies becomes more democratic and participatory. In this context, digital public administration stands out not only as an administrative tool, but also as a structure in which democratization, governance and institutional transparency are redefined (Güleş and Özata, 2005, p. 78). The wave of digital transformation experienced at the global level has a direct impact on shaping national public policies and causes states to reconsider their internal administrative structures. The technology-based public administration approach is directly associated with the development strategies of countries, and digital public services are handled together with the principles of economic efficiency, social welfare and administrative simplicity (İldan, 2021, p. 64). In this context, comprehensive reform processes have been experienced in the field of public administration in Türkiye on the axis of digitalization, and citizens' access to public services has been made more integrated and systematic with e-Government applications. This transformation is not only limited to the application of new

technologies, but also includes the restructuring of the organizational structures, service delivery styles and knowledge-based management approaches of public institutions.

Developments in the field of digital public administration in Türkiye have become more visible, especially in service areas that directly touch the daily lives of citizens. Thanks to digital systems in many sectors from education to health, from justice to transportation services, transaction processes have accelerated, access to information has become easier and the way of benefiting from public services has gained a more user-friendly face (Arslan, 2011, p. 78). The Central Physician Appointment System (MHRS), implemented by the Ministry of Health within this transformation, constitutes a concrete and effective example of the application of digital public services. Through MHRS, individuals' access to health services has become possible to be planned in the digital environment independently of time and place, and the functioning of health institutions has been provided with a more orderly and manageable structure (Demirel, 2006, p. 83). This system allows public service delivery to become more efficient, more transparent and more systematic for both the individual and the institution.

The relationship between the theoretical foundations of digital public administration and its practical dimensions should be evaluated not only at the technical level but also in terms of administrative mentality. The transfer of public services to the digital environment necessitates not only the automation of business processes, but also the change of corporate culture (T.C. Ministry of Health, 2012, p. 78). The transition from the rigid structure of bureaucracy to the flexible and data-driven nature of digitalized public administration has made it imperative for administrators to redefine their roles, increase the digital competencies of public employees, and improve the digital literacy levels of citizens. In such an environment, public services are measured not only by the number and variety of services provided, but also by how effective, inclusive, and sustainable these services are (Şahin, 2008, p. 85).

Establishment and Objectives of the MHRS System

Since access to health services in Türkiye was carried out without appointment systems for many years, citizens had to apply directly to health institutions, which both reduced patient satisfaction and created serious density and irregularity in health institutions. Especially in public hospitals in big cities, the practice of queuing from the early hours of the morning has become widespread, and people have tried to be examined by waiting at the doors of polyclinics for hours (Demirel, 2006, p. 86). The fact that this situation was exhausting for both the patient and the healthcare worker also caused the inefficient use of public resources. The high number of examinations per physician due to the density of patients reduced the quality of health care and caused some patients to return without being examined. The crowds formed in front of the polyclinics not only prevented the planned and effective provision of health services, but also made the lack of physical space within the institution even more evident (Aksu et al., 2018, p. 92). In addition, the lack of a systematic appointment mechanism created chaotic scenes in health institutions and paved the way for practices contrary to the principle of social justice among citizens. The difficulties experienced especially in the access of disadvantaged individuals to health services caused these problems to deepen. All these disruptions brought to light the need to restructure the existing health service structure and develop a more regular access model.

The process of designing and implementing the Central Physician Appointment System is considered as one of the concrete indicators of the will of the public administration towards digitalization in Türkiye. This system, developed by the Ministry of Health, was initially

tested with pilot applications and then started to be disseminated throughout the country. The first versions of the system were made available in a limited number of cities and user experiences and technical infrastructure were constantly reviewed and revised (Yücel, 2006, p. 105). In the development process of MHRS, not only an appointment organization, but also a platform symbolizing the paradigm shift in service delivery of public administration was built. Over time, the system not only regulated hospital appointments, but also expanded to include feedback mechanisms focused on user experience and citizen satisfaction (Kartal, 2015, p. 102). Updating the digital infrastructure of healthcare facilities and ensuring software and hardware compatibility played a critical role in the smooth operation of the system. MHRS aims to use information technologies in an integrated manner and has started to provide services to citizens through different channels such as call center service, internet-based application and mobile access. While developing the system, not only technical efficiency but also public administration principles were taken into consideration in accordance with health policies, and in this respect, an interdisciplinary approach was adopted both in planning and implementation (Yücetürk, 2002, p. 115).

The MHRS system is not only limited to the function of creating appointments, but has gradually expanded the areas it provides services and has turned into a versatile digital public service. The system, which was initially implemented in secondary health care institutions, was later integrated into family medicine, which is primary health care services. Users can make appointments from both state hospitals and oral and dental health centers, and at the same time, they can manage planned examination processes through family physicians (Elibol, 2008, p. 115). MHRS's technical infrastructure is structured with the capacity to provide services at the national level and is supported by servers that can provide simultaneous data flow, software systems that can meet high user density and various security protocols. The system has been simplified in terms of user interface and has been structured in a way that even individuals with limited internet literacy can easily use it (Şahin, 2013, p. 115). At the same time, thanks to mobile application integration, appointment transactions can be made without time and place restrictions. The system allows both public hospital managers and ministry-level decision-makers to analyze the efficiency of health services, and enables the detection and elimination of problems in service delivery. With the strengthening of the technical infrastructure, MHRS has turned into a mechanism that forms the basis of performance measurement and management information systems not only in terms of individual users but also in terms of corporate functioning (Alagöz, 2013, p. 117).

MHRS in Terms of Public Administration

One of the most important functions of the Central Physician Appointment System is that it provides significant convenience to both healthcare professionals and citizens receiving services in terms of time management by ensuring that health services are provided in a more planned and programmed manner. The appointment system based on predetermined time zones makes it possible to carry out health services in a balanced manner during the day by regularizing the flow of patients in hospitals. This structure, which prevents the accumulation of uncertain hours, plays a critical role especially in terms of doctors being able to make their daily plans, use their examination times efficiently, and create a fair queue management among patients (Akcagündüz, 2013, p. 130). Service quality problems caused by long waiting times in public hospitals have been minimized over time thanks to MHRS and citizens have been able to access health services more systematically. Patient admission processes, which are tied to a certain calendar, support the rational management of public resources by making it possible to use both human resources and physical infrastructure more effectively. In this context, it has brought benefits such as strengthening the coordination within the hospital,

clarifying the workflows based on appointments, patient satisfaction as well as distributing the workload of healthcare professionals in a fairer way (Aydın et al., 2010, p. 166). Disciplining time management has allowed hospital managements to measure their performance based on more concrete data and has increased the effectiveness of statistical evaluations in in-service planning. The regularity brought by the appointment system makes health services sustainable in line with the strategic goals of the public administration and contributes to the predictability of service delivery processes. Effective use of time has become a fundamental element in the evaluation of public institutions based on performance criteria, and this area has been significantly improved with digital appointment systems (Sobacı & Yıldız, 2012, p. 166).

The MHRS system plays an important function not only in facilitating access to health services, but also in implementing the principles of transparency and traceability in public administration. Every appointment request made to the system is recorded in digital environments, and the transaction histories of both patients and healthcare professionals can be traced retrospectively within the framework of certain rules (Kıraç, 2019, p. 192). In this way, the information about which physicians a patient receives services from on which dates, when he makes an appointment and attends these appointments is recorded, and a retrospective analysis of health services is possible. This structure allows for performance evaluations not only at the individual patient level but also at the entire institution level in terms of health management, creating a more transparent audit area regarding how public resources are used (Polat & Özer, 2024, p. 202). The data flow offered by the system makes it possible for decision-makers to produce policies based on more objective data on service delivery, thus contributing to the reduction of subjectivity in health management. From the point of view of patients, the accessibility of information such as which physicians are available in certain time periods and which units of the hospital are busy allows public services to be carried out in a more open and accountable manner. Since the increase in traceability guarantees that there is a record of every transaction made within the system, it facilitates the determination of responsibility in case of possible administrative errors or patient complaints and makes the chain of responsibility in public administration more clearly visible (Seferoğlu et al., 2011, p. 284). A transparent service environment supports the establishment of trust between citizens and public institutions, and strengthens citizens' sense of loyalty and belonging to public institutions. Thanks to MHRS, public administration has developed a more reliable public service model not only in service delivery, but also in the health sector by carrying the principle of transparency to the operational level in line with governance principles (Öztaş, 2016, p. 296).

In the process of digitalization of public services, the harmony between users' expectations from the system and the experiences they encounter directly affects the perception of service quality. The perception of the Central Physician Appointment System among citizens is closely related not only to its functionality but also to the level of trust in the healthcare system. Users' perceptions of the service are shaped by many variables such as the frequency of technical problems they experience in the appointment process, the level of clarity in the interface design of the system, and the speed and accuracy in accessing information (Yıldızbaşı et al., 2016, p. 296). Especially in a sector such as the field of health, which directly affects the physical and mental integrity of individuals, disruption or complexity of service delivery can cause significant declines in the satisfaction levels of individuals towards general public services. Developing the system by focusing on user experience contributes not only to individual satisfaction but also to the increase of public trust at the social level (Akbolat and Işık, 2010, p. 368). Among the factors that create patients' perceptions of the MHRS system are the ease of appointment creation and

cancellation processes, the personalization of the service, and the support of the system with constantly updated content. It is seen that the perception of quality in digital public services does not only depend on the functioning of the system, but is also directly affected by the past experiences of the users, public discourses about the system and environmental impacts (Akyüz et al., 2010, p. 392). The quality of service provided by widely used digital public platforms such as MHRS is evaluated not only on technical competence but also on social psychological acceptance, which makes the position of digital systems in public policy more strategic.

The effective use of digital public services by all segments of society depends not only on the technical functioning of the system, but also on its being easily accessible and usable by everyone. The MHRS system is designed as a public service model that should be integrated into the daily lives of individuals from different age groups, education levels, and socioeconomic statuses. The accessibility level of the system is affected by many factors such as whether users have internet infrastructure, access to mobile devices, digital literacy skills and familiarity with user interfaces (Mutluay and Özdemir, 2014, p. 26). Especially for individuals living in rural areas, belonging to elderly population groups, or having a limited relationship with technology, the issue of accessibility turns into not only a technical but also a social equality issue. Making the MHRS system available both through mobile applications and call centers is an important strategic step towards meeting the needs of different user profiles. The presence of user support elements such as simplified menu structures, directional commands, voice guidance support, and frequently asked questions in the design of the system allows individuals who are less familiar with the digital environment to benefit from health services without interruption (Koç, 2020, p. 77). Ease of use should be considered in a broad framework, not only limited to the appointment process, but also includes functions such as reminding the appointment date, receiving feedback after the inspection and accessing past service records. Ensuring accessibility encourages individuals not only to contact the system but also to develop the habit of using it regularly, which feeds the continuity of demand for public services (Oyman, 2019, p. 145). From the perspective of digital public administration, the easy-to-access structure of MHRS is considered as one of the most concrete indicators supporting the citizen-oriented transformation of public services.

METHOD

Research Design

In this research, a qualitative research approach was adopted to reveal how the Central Physician Appointment System (MHRS) of the Ministry of Health is experienced in the context of public administration principles, in which functional dimensions it exhibits strengths and weaknesses, and what kind of meanings e-government services can produce in user perception. Qualitative research is defined by providing the opportunity to understand and interpret social phenomena in their context (Yıldırım & Şimşek, 2018) stands out as a powerful tool in making experiences, perceptions, and meanings that cannot be expressed in numbers visible.

The study was carried out with a single-case study design *as a design*. Yin (2018) defines the case study design as a data-driven research design that allows an in-depth examination of a current phenomenon in a real-life context. This pattern is preferred in situations where the researcher does not have direct control over events, especially when seeking answers to the "how" and "why" questions (Yin, 2018). In this research, the case study design was used to reveal user experiences about an e-government application such as MHRS, which is experienced by many users and is constantly updated, and to analyze what

kind of meanings this e-government service produces in user perception by determining its functional strengths and weaknesses.

Universe and Sample

The theoretical universe of the research consists of citizens and legal residents of the Republic of Türkiye who actively use MHRS. The accessible universe is restricted to users over the age of 18 who have made an appointment with MHRS at least twice in the last six months and have completed the examination process. The six-month period was determined to reduce recall bias, and the condition of at least two appointments was determined to prevent one-time experiences from over-affecting the data (Bradburn et al., 1987). Purposive and snowball sampling methods were used together in the research. With the maximum diversity strategy, a heterogeneous sample was created in terms of digital literacy level, age group, frequency of health service use, and type of geographical settlement (Patton, 2014).

A total of 15 participants were interviewed. In qualitative research, sample size is determined according to the principles of "information richness" and "conceptual saturation" (Patton, 2014). In the literature, it is stated that 10-15 participants are sufficient in semi-structured interviews.

The ages of the participants were between 23-73 years (mean 43.5), 9 were female and 6 were male. Educational levels range from elementary school to graduate school. In terms of employment status, 4 are retired, 7 are full-time employees, 2 are part-time/housewives, 1 is a student and 1 is self-employed. 10 participants reside in urban areas and 5 in semi-urban areas. Digital literacy levels are distributed as basic (4), intermediate (5) and advanced (6). The frequency of health care use is low (7), medium (5) and high (3). 10 participants use the system for their own appointments and 5 use it as proxy users.

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Table 1. *Demographic and Usage Profile Characteristics of Participants*

No	Gender	Age	Education Level	Operating Status	Residency Type	Digital Literacy	Frequency of Healthcare Use	Purpose of Use of MHRS	Special Case
K1	Male	68	High School	Retired	Urban	Basic	High (chronic disease follow-up)	Own appointments	Regular check-up
K2	Women	34	Undergraduate	Full-time employee	Urban	Next	Medium	Own appointments	Out-of-hours call
K3	Women	23	University student	Student	Urban	Next	Low	Own appointments	1st and 2nd digit transition
K4	Women	38	Undergraduate	Housewife	Semi-urban	Medium	Medium	Child appointments	Proxy user
K5	Male	45	Master's degree	Full-time employee	Urban	Next	Low	Own appointments	Out-of-hours call
K6	Women	61	Primary School	Retired	Semi-urban	Basic	High (chronic disease follow-up)	Own appointments	Regular check-up
K7	Male	29	Undergraduate	Full-time employee	Urban	Next	Low	Own appointments	Flexible working
K8	Women	52	High School	Full-time employee	Urban	Medium	Medium	Own and parent appointments	Proxy user
K9	Male	73	Primary School	Retired	Semi-urban	Basic	High (chronic disease follow-up)	Own appointments	Regular check-up
K10	Women	26	Undergraduate	Full-time employee	Urban	Next	Low	Own appointments	Out-of-hours call
K11	Women	41	Associate degree	Part-time employee	Semi-urban	Medium	Medium	Child appointments	Proxy user
K12	Male	35	Master's degree	Self-employment	Urban	Next	Low	Own appointments	Flexible working
K13	Women	58	High School	Retired	Urban	Medium	High (chronic disease follow-up)	Own appointments	Regular check-up
K14	Women	31	Undergraduate	Full-time employee	Urban	Next	Medium	Own appointments	1st and 2nd digit transition
K15	Male	48	High School	Full-time employee	Semi-urban	Medium	Medium	Self and spouse appointments	Proxy user

Digital literacy levels: Basic = e-Government login and basic navigation; Medium = multi-platform use and problem solving; Advanced = use of advanced technology and adaptability. Frequency of healthcare use: Miscarriage = 1-2 times per year; Medium = 3-6 times per year; High = once a month or more often.

Data Collection Tool and Data Collection

Structuring the Interview Form

An interview form consisting of two parts was developed as a data collection tool in the research. In the first part of the form, there is a personal information form to determine the demographic characteristics and MHRS usage profiles of the participants. In this form, information on gender, age, education level, employment status, type of residence, digital literacy level, frequency of health service use, purpose of use of MHRS and special situations, if any, were collected.

The semi-structured interview form, *which constitutes the second part of the form*, consists of a total of 20 open-ended questions in order to determine the user experience for MHRS. The questions were developed in line with the examination of the relevant literature and the conceptual framework of the research; It is structured in a way that reveals a user journey that covers the participants' interactions with MHRS from start to finish. Accordingly, the interview form includes questions focusing on the purposes and how often the participants use the system, their appointment making processes, and their general evaluations of these processes.

In the interview questions, the impact of MHRS on access to public health services was also discussed; There were questions about the changes created by the system compared to traditional appointment methods and user experiences. Through questions on user experience and interface evaluation, the positive and negative experiences of the participants, the usability of the system, the technical problems encountered and the solutions developed for these problems were questioned in detail. In the context of time management and service effectiveness, the impact of waiting times, appointment cancellation and modification processes, and busy periods on user experience were evaluated. In addition, the place of MHRS in the perspective of digitalization and public administration was discussed, and questions were included regarding the system's contribution to digital transformation and the effectiveness of public services and their perceptions of e-Government integration. In addition, perceptions and concerns regarding personal data privacy and data security, as well as the participants' suggestions for the future development of MHRS, are among the basic components of the interview form.

The interview form was first prepared by the researcher in the form of a draft form and expert opinion was sought in order to ensure the validity of the scope and content. The form, which was submitted to the evaluations of three academicians working in the fields of public administration, health management and qualitative research methods, was revised and finalized in terms of the clarity, comprehensibility and suitability of the questions for the research purpose in line with the feedback received.

A pilot application was carried out with one person to test the feasibility of the form and the operability of the questions. A pilot interview with a participant who met the sampling criteria was conducted to check the clarity of the questions, determine the duration of the interview, and identify possible improvements. After the pilot application, minor corrections were made in the wording of the questions and the order of some questions was rearranged.

Collection of Data

The data were collected by face-to-face and telephone interview methods according to the preferences and suitability of the participants. Face-to-face interviews were conducted in quiet environments determined by the participants; For this, a hospital garden located in a city center was used. Phone calls were made by prior appointment and at times when the participants were available.

Before starting the data collection process, all participants were given detailed information about the purpose and scope of the research, the approximate duration of the interview, and how the data would be used. Participants were made clear that participation in the study was voluntary, that they could end the interview at any time, and that they were not obliged to answer any questions. It is also stated that the collected data will be kept confidential, personal information will not be shared and will only be used for scientific purposes. After this information, the verbal consent of the participants was obtained and the interviews started.

The interviews lasted between 20-30 minutes on average. During the interview, a supportive and non-judgmental communication style was adopted so that the participants could feel comfortable sharing their statements, and reminders were provided with sample application explanations when necessary. Throughout the interview, the researcher recorded the participants' responses and important points by using the note-taking method on the interview form. The note-taking process is structured in the form of short phrases and keywords, taking care to convey what the participants said as it is. After each meeting, the participants were thanked for their time and informed that they could be contacted later if necessary.

Data Analysis

The qualitative data collected within the scope of the research were analyzed by content analysis technique. Content analysis is an analysis technique that enables the collected data to reach concepts and relationships, thus describing the data in a systematic way. This technique is widely used in the systematic examination of written, verbal, or visual communication materials and in revealing the underlying meanings of the data (Yıldırım & Şimşek, 2018).

The data analysis process started with the transcription of the interview notes. The notes taken during the interview with each participant were converted into a regular format after the interview and made ready for analysis. At this stage, care was taken to preserve the participants' expressions as they were, and the notes were reviewed in order not to cause any semantic shift.

The coding phase constituted the first step in systematically analyzing the data. By reading the interview texts line by line, meaningful expressions and concepts were determined and codes were assigned to these sections. Coding is the process of breaking down data, conceptually naming it, and rearranging it (Miles and Huberman, 1994). At this stage, the participants' statements about their MHRS experiences were grouped under different codes such as system usage, accessibility, technical problems, user satisfaction, digital literacy, and public service perception. For example, expressions such as "not being able to find an appointment", "system crashes", "fast process", "time saving" are determined as codes. During the coding process, a large code list was created at the beginning in order to maintain the richness of the data and not to miss possible themes.

In the category creation phase, codes with similar meanings or related to each other were brought together and higher-level classifications were made. Categorization is the process of identifying patterns and relationships between codes (Yıldırım & Şimşek, 2018). At this stage, codes such as "inability to find an appointment", "peak periods", "appointment time limitation" were grouped under the category of "system capacity and access problems". Similarly, codes such as "user interface complexity", "difficulty in navigation", "menu incomprehensibility", etc. are combined under the category of "interface usability". In the process of creating the categories, the internal consistency of each category and the clarity of the distinction between categories were taken into consideration.

In the subtheme determination phase, more comprehensive semantic structures were created by examining the relationships between the categories. Sub-themes emerged by grouping related categories at a higher level. For example, the categories "system capacity and access issues" and "interface availability" are combined under the sub-theme "Technical Issues." At this stage, it was tried to identify sub-themes representing different dimensions of MHRS user experience.

The creation of the main themes constituted the last stage of the analysis process. At this stage, the relationships between the sub-themes were evaluated and high-level thematic

structures that could answer the research questions and present the findings in a meaningful whole were determined (Braun and Clarke, 2006). The main themes are grouped under headings such as "System Usage and Accessibility", "Digital Transformation and Public Service Perception", "User Differences and Inclusiveness", covering the basic dimensions of the MHRS experience. Each main theme is structured to cover related sub-themes and categories and is associated with the conceptual framework of the research. Throughout the analysis process, there was a constant back and forth between codes, categories, sub-themes and main themes, and rearrangements were made when necessary.

Validity and Reliability

In order to ensure scientific quality in qualitative research, this study is based on the criteria of credibility, transferability, consistency and reproducibility. In order to strengthen credibility, interviews with the participants were carried out in a long-term and detailed manner, thus obtaining a detailed and rich data set to support the research questions. In addition, in order to evaluate the extent to which the findings reflect the participant experiences, a participant was presented with the results of the analysis and feedback was received on whether the comments coincided with their own views.

Within the scope of ensuring transferability, participant statements were directly included in the analysis process; however, in line with ethical principles, the identities of the participants were kept confidential and the quotations were shown with codes such as K1, K2, K3. In qualitative research, the researcher is not only in a position to analyze the data, but also to make sense of and structure the participant perspectives. For this reason, in order to support validity and reliability in the content analysis process, data-based coding, clear and consistent definition of themes, and observance of harmony between researchers have been adopted as basic principles (Elo & Kyngäs, 2008).

In order to ensure consistency, the pairings created during the coding and theming process were reviewed in detail; The resulting code, categories, and themes were cross-checked by an independent researcher.

$$Reliability = Consensus / (Consensus + Disagreement)$$

In order to quantitatively reveal the reliability of the analysis process, the reliability coefficient proposed by Miles and Huberman (1994) was calculated and an 85% agreement was obtained between the two independent evaluators. This result shows that the reliability of the qualitative data analysis carried out in the research is within acceptable limits.

Ethical Principles and Limitations

The principles of scientific research ethics have been followed at all stages of the research process. Participants were informed in detail about the purpose and scope of the research and how the data would be used, and their verbal consent was obtained on the basis of voluntary participation. During the interview, sensitivity was shown in the questions that the participants may be uncomfortable with, and it was stated that they could end the interview at any time and that they did not have to answer any questions.

In terms of the limitations of the research, the study was conducted with 15 participants, and due to the nature of the qualitative research, the findings do not aim at statistical generalization, but aim at detailed meaning and interpretation. In addition, the research was carried out with participants living in Central Anatolia and Aegean regions, and geographical

diversity is limited. However, the data is based on the subjective experiences and statements of the participants and is not supported by additional data sources such as observations or system records. In addition, the fact that some of the interviews were conducted over the phone caused the non-verbal communication cues such as body language and facial expressions that could be obtained in face-to-face interviews to not be recorded.

RESULTS

General Findings on MHRS User Experiences

Within the scope of the research, the data obtained from semi-structured interviews with 15 participants were analyzed by content analysis method and five main themes and fifteen sub-themes related to these themes were determined as seen in Figure 1.

The first theme that emerged as a result of the analysis, "System Usage and Accessibility", covers the participants' processes of using MHRS, the interface design of the system and the technical problems they encountered. Under this theme, three sub-themes have been determined: appointment booking process and frequency of use, user interface and navigation experience, and technical problems and search for solutions. The second theme, "Service Quality and User Experience", focuses on the nature of the service provided by MHRS and the experience of users with this service. It consists of four sub-themes: time management and waiting times, appointment cancellation and change processes, positive and negative experiences, service diversity and coverage adequacy. The theme of "Digital Transformation and Public Service Perception" includes the place of MHRS in the digitalization of public services and the evaluations of users regarding this transformation. Comparative evaluation with traditional methods, e-Government integration and digitalization policies, public service quality and citizen satisfaction sub-themes are discussed under this theme.

The fourth theme, "Inclusion and Digital Inequalities", discusses the differences in the experiences of different user groups in accessing MHRS and the problematic of the digital divide. Two sub-themes were determined: access experiences of different user groups and digital literacy and age factor. In addition, the theme of "Security, Privacy and Future Prospects" covers users' data security concerns, the effects of the system on healthcare personnel and their expectations for the system in the future. Under this theme, there are sub-themes of personal data security and privacy concerns, effects on healthcare personnel and hospital management, and suggestions for system development and improvement.

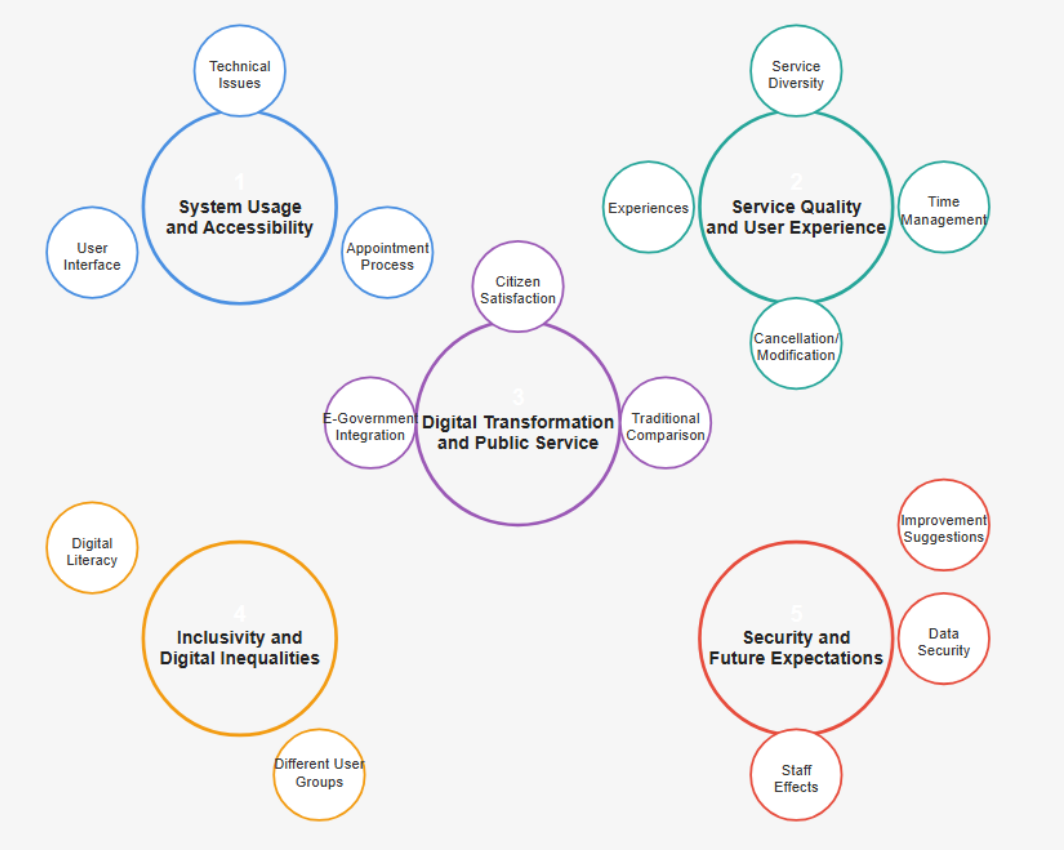

Figure 1. MHRS User Experience Theme and Sub-Themes

Findings on the Theme of System Usage and Accessibility

The findings presented in Table 2 show that the use of MHRS is shaped around different sub-themes in the context of system usage and accessibility.

Table 2. Findings on the Theme of System Usage and Accessibility

Child Theme	Category	Participant Testimonials
Appointment Process	Intensive Use	*"Due to my chronic illness, I make an appointment with MHRS at least once a month, I'm used to it now." (K1)"... I have controls, if this system was available, I would go to the hospital and wait for hours." (K6)"Since I have regular medication follow-up, I may need to make an appointment every few weeks, I would have a hard time without MHRS." (K9)*
	Rarely Need-Oriented Use	*"I only use it when I'm sick, once or twice a year or something." (K3)"I don't use it very often because I'm not very sick, but I look at it right away when I need it." (K7)".... I only make an appointment every six months or so." (K10)"I don't use it unless it's an emergency, a few times a year." (K12)*
	By proxy/ Proxy Usage	*"I make appointments for myself and my children, sometimes for my mother." (K4)"I use it frequently these days for vaccinations and check-ups of my little one." (K11) "Since my wife doesn't like technology very much, I make her appointments." (K15)"Parents are old, I arrange all their appointments from the system." (K8)*
User Interface	Ease of Use	*"The interface is very clear, I can make an appointment in a few clicks." (K2)"Login via e-Government is very easy, everything seems clear." (K7)"Although I am not technologically inclined, I can easily use the system." (K14)*
	Menu Complexity	*"Sometimes I get confused about which department to go into, there are so many options. (K1)"I couldn't find the doctor when I first used it, the menus are a bit complicated." (K6)"The filtering part is not very clear, I am confused by which criteria to search." (K13)*
	Mobile and Desktop	*"It's more practical to use it from the phone, but sometimes the full menus don't seem to open." (K5)"I'm more comfortable than the computer, the screen is small on the phone."*

Child Theme	Category	Participant Testimonials
	Experience Differences	*(K9)"I prefer the mobile app, I can use it anywhere." (K10)"More details when I enter from the computer, of course." (K12)*
	Clarity Issues	*"Some medical terms are too technical, I don't understand what they mean." (K4)"The names of the polyclinics are complicated, sometimes I don't know which one to go to." (K11)*
Technical Issues	Access Problems	*"The appointment opens at 08:00 in the morning, but the system is locked, I can't enter." (K2)"The site crashes because everyone is logging in at the same time, it's a bit annoying." (K5)"I think the system slows down because the appointment fills up as soon as it opens." (K10)"It doesn't open during peak hours." (K14)*
	System Glitches	*"I made the appointment, but then I couldn't see it, I couldn't find it again, was the doctor on leave or what." (K8)"Sometimes it gives an error message, I don't know what to do." (K13)"The system logs out automatically" (K15)*
	Solution Suggestions	*"When there is a problem, I call 182 and they help." (K1)"If I can't find an appointment, I go to the hospital in advance and pick it up." (K3)"I try it at different times, it is more comfortable when I set up a warning system." (K7)"My wife and I try it out, she finds the appointment better, she knows the doctors and so on." (K4)"I am ready early in the morning when the system is turned on." (K12)*

Under the sub-theme of the appointment process, it is seen that the frequency of use of the system varies according to the health status and needs of the participants. While participants with chronic diseases used MHRS regularly and intensively, participants with more limited need for health services stated that they used the system more need-oriented and infrequently. In addition, it is understood that proxy users who make appointments on behalf of their children, spouses or parents interact with the system more frequently and position MHRS as a part of family health management. A participant summarized this situation with the *statement "Parents are old, I arrange all their appointments from the system"* (K8).

The findings on the user interface reveal that the system is generally perceived as accessible and functional, but some usage difficulties are also experienced. While some participants stated that the interface was understandable and allowed for quick appointments, some participants expressed difficulties due to the complexity of the menus, the lack of clear filtering options and the difficulties in understanding medical terms. In addition, there are differences in experience between mobile and desktop use; It has been evaluated that the mobile application provides practicality, while the desktop usage offers more detailed information.

Under the sub-theme of technical problems, problems in accessing the system, especially during peak hours, slowing down of the system and encountering error messages from time to time come to the fore. Participants stated that situations such as system locks or difficult access during the time periods when appointment times are opened negatively affect the user experience. On the other hand, it is seen that users have developed different solution strategies to deal with these problems. These strategies include calling the 182 line, retrying at different times, utilizing mobile alert systems, or applying to the hospital in person. In general, the findings under this theme reveal that MHRS is considered as an important digital tool that facilitates access to health services, but the usage experience differs in line with individual needs, digital competence level and systemic constraints.

Findings on the Theme of Service Quality and User Experience

The findings regarding the theme of Service Quality and User Experience are presented in Table 3.

Table 3. Findings on the Theme of Service Quality and User Experience

Child Theme	Category	Participant Testimonials
Time Management	Time Saving	*"I get it done from home instead of going to the hospital and waiting in line, it saves a lot of time." (K2)"I used to take half a day off from work, now an hour or two is enough because I go by appointment." (K5)"I get examined directly without waiting in line, which is very good for me." (K14)*
	Appointment Time Restriction	*"It is very difficult to find an appointment during working hours, it is always full in the evening." (K7)"I'm working but I can't make it to the appointments at 09:00 in the morning, there should be more flexible hours." (K10)"There is no evening appointment, I have to take time off from work." (K12)*
	Hospital Waiting Experience	*"I waited for half an hour even though I had an appointment..." (K1)"Sometimes you wait in line despite the appointment time, what's the point then." (K6)"Even if I go by appointment, there is still a queue." (K13)"The waiting time is longer because the doctor does not keep the appointments. They also take someone in the middle" (K8)*
Appointment Cancellation / Change Processes	Flexibility	*"It's easy to cancel, I got it done in two clicks." (K3)"If I can't go, I cancel it immediately, so that someone else can use it." (K14)*
	Difficulty in finding a new appointment	*"I canceled it when I couldn't get permission, but I couldn't find a new appointment, I had to take it a month later." (K4)"When you give up, it is very difficult to find an appointment again, there are no free appointments in the system." (K9)"Once I canceled, I couldn't get an appointment with that doctor again." (K11)*
	Penalty System	*"When you cancel three times, you can't get an appointment for a while, it's a lot of trouble." (K2)"I know there is a cancellation limit, but I don't know exactly how much." (K15)*
Experiences	Positive Experiences	*"Overall I'm satisfied, it's very good compared to before." (K7)"It is a great blessing to be able to make an appointment from home." (K1)"It's a very nice thing to have a system, otherwise what would we suffer." (K5)*
	Negative Experiences	*"When I can't find an appointment, I get a lot of stress, I struggle for hours." (K6)"I once made the wrong appointment, I went to a different polyclinic." (K4)"I get angry when the system keeps causing problems." (K13)"I enter with hope, but I am always disappointed, there is no appointment." (K11)*
	Customer Support	*"When I called 182, they helped, but I waited a long time on the phone." (K8)"There is a help button in the system, but it doesn't work very well, I don't understand their explanations." (K9)"When they called from the hospital, they reminded me of my appointment, which was very nice." (K3)*
Service Variety	Wide Range of Polyclinics/Physician Options	*"There are so many doctors, it's nice to have a lot of options." (K12)"I can easily find the branch I want." (K14)*

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Child Theme	Category	Participant Testimonials
	Incomplete/Limited Services	*"It is very difficult to get a dental appointment, the system is insufficient." (K2)"The physical therapy appointment is not in the system, I have to pick it up from the hospital." (K10)"Some specialist doctors do not appear in the system, I wonder why." (K15)*
	Special Cases	*"There is no solution for emergencies in the system." (K4)"I think there should be a separate category for pregnancy follow-up." (K11)"It would be nice if there was a priority system for the elderly, they can't wait for hours." (K6)*

The findings presented in Table 3 reveal that the effects of MHRS on service quality and user experience are particularly concentrated on the axes of time management, appointment processes, overall experiences, and service diversity. In the context of time management, most of the participants stated that the system saves significant time thanks to the opportunity to make an appointment without going to the hospital. One participant expressed this situation with the words, *"I handle it from home instead of going to the hospital and waiting in line, it saves a lot of time"* (K2). However, the fact that appointment hours are mostly limited to working hours has been considered as an important limitation, especially for working participants. As a matter of fact, a participant drew attention to this situation with the statement *"I am working, but I cannot make it to the appointments at 09.00 in the morning, there should be more flexible hours"* (K10). In addition, the continuation of the waiting time in the hospital despite having an appointment stands out as a factor that limits the time-saving function of the system. This experience is *expressed as* "I waited half an hour even though I had an appointment" (K1).

The findings regarding the appointment cancellation and change processes show that the system offers practicality to the user in terms of cancellation procedures, but the process of finding a new appointment after cancellation is often problematic. While the participants evaluated the cancellation process as easy, they emphasized that they had difficulty in making a new appointment. A participant's statement, *"I canceled when I couldn't get permission, but I couldn't find a new appointment, I had to make it a month later" (K4)* clearly reflects this situation. In addition, although the existence of a penalty system for appointment cancellations is known, it is understood that users do not have sufficient information about the limits and functioning of this system. *This situation was expressed as "When you cancel three times, you can't get an appointment for a while, this is a lot of trouble" (K2).*

Under the sub-theme of general experiences, participant opinions differ between positive and negative experiences. It was frequently emphasized by the participants that MHRS is a system that facilitates access to health services. One participant expressed this satisfaction with the statement, *"Overall satisfied, very good compared to before"* (K7). On the other hand, the inability to find an appointment and systemic disruptions are among the main problems that negatively affect the user experience. One participant summarized this situation with the words, *"I enter with hope, but I am always disappointed, there is no appointment"* (K11). Regarding user support, it was noted that the 182 line was helpful, but it did not always provide an effective solution due to the long wait times.

In terms of service diversity, MHRS's wide range of outpatient clinic and physician options is considered a positive feature by users. One participant expressed this situation as

"There are too many doctors, the abundance of options is good" (K12). On the other hand, the fact that some services such as dental health and physical therapy are limited in the system and that some specialties are not visible is seen as an important deficiency. Additionally, the lack of specific arrangements for emergencies, pregnancy monitoring, and the primary needs of elderly individuals are among the aspects of the system that need improvement. Overall, these findings suggest that while MHRS is a digital healthcare service that greatly improves user experience, it has aspects that may not fully meet user expectations in terms of service quality and flexibility.

Findings on the Theme of Digital Transformation and Public Service

The findings on the theme of Digital Transformation and Public Service are presented in Table 4.

Table 4. Findings on the Theme of Digital Transformation and Public Service

Child Theme	Category	Participant Testimonials
Comparison with Traditional Methods	Challenges of Traditional Methods	*"We used to have to go to the hospital and wait from morning to night, it was very tiring." (K1)"We used to stand in line for hours to get a queue number, MHRS eliminated them." (K6)"We used to try to make an appointment on the phone, they never answered the line." (K9)"It was very difficult to go to the hospital sick and wait, now it is not." (K13)*
	Advantages of the Digital System	*"Now that I've done it from home, it's over, how nice." (K2)"A thousand times better than the traditional method, incomparable." (K5)"I can make an appointment whenever and wherever I want, how nice." (K14)*
e-Government Integration	Ease of e-Government Integration	*"I log in with a single click from e-Government, it's very practical." (K3)"We now handle all our work from e-Government, it is very good when MHRS is there." (K7)"It's nice to be able to access everything with the e-Government password, there is no separate password hassle." (K12)*
	Development of Digital Government Understanding	*"The state is going digital, we see this in MHRS." (K14)"I think these systems show that our country is developing." (K5)"Digital transformation is very important, it's good that it started in health." (K2)*
	Integration Gaps and Expectations	*"It would be better if the lab results were integrated into the system." (K11)"My prescriptions do not appear in MHRS, I look at it separately from e-Nabız." (K15)"All hospitals should use the same system, including private hospitals." (K8)"Integration with SSI is not complete, sometimes there is confusion." (K13)*
Citizen Satisfaction	Perception of Improvement in Public Service	*"The quality of service in public hospitals has increased with this system." (K1)"Digitalization of public services increases citizen satisfaction." (K3)"When there are such systems, our trust in the state increases." (K7)*
	Ongoing Issues in Service Quality	*"The system is good, but the number of doctors is insufficient, this problem has not been solved." (K6)"There is MHRS, but the quality of examination in hospitals is low, that is the main problem." (K13)"Even if we make an appointment, the doctor is inadequate, he looks at it briefly." (K9)*
	The Relationship Between Expectation and Trust	*"I believe the system will improve further." (K10)"We see that the state is making efforts in this regard, we are satisfied." (K12)"It could be done better, but it's not bad as it is now." (K15)"As citizens, we want our voices to be heard, let the system develop." (K11)*

As can be seen in Table 4, it is seen that MHRS is perceived as a positive transformation tool by the participants in the context of digital transformation and public service. Statements regarding the comparison with traditional methods reveal that access to health services was experienced as a time-consuming, tiring and uncertain process before MHRS. Participants particularly highlighted the necessity of physically visiting the hospital, long waiting times, and disruptions in the process of making appointments over the phone.

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One participant expressed this situation with the words, *"We used to have to go to the hospital and wait from morning to night, it was very tiring" (K1).* On the other hand, the advantages provided by the digital system are defined by the fact that the appointment process becomes independent of place and time; It has been stated that MHRS offers a faster and more practical solution compared to traditional methods. One participant's statement, *"I can make an appointment from anywhere, at any time" (K14)* summarizes this perception.

The findings regarding e-Government integration stand out as one of the key elements that increase the ease of use of the system. Participants emphasized the practicality of being able to access different public services with a single authentication method and positively evaluated the integration of MHRS with the e-Government system. A participant expressed this situation *as "I enter with a single click from e-Government, it is very practical" (K3*). In addition, in the evaluations regarding the development of the digital state understanding, MHRS was seen as a concrete indicator of the digitalization process of the state; The start of digital transformation, especially in the field of health, has been expressed as an important achievement.

In addition, the participants pointed out some deficiencies in integration. It was stated that the integration between laboratory results, prescriptions and different health information systems is not sufficient, and the fact that all hospitals and institutions are not in the same digital infrastructure limits the usage experience. A participant expressed this situation with the *words, "My prescriptions do not appear in MHRS, I look at them separately from e-Nabız" (K15).* Findings on citizen satisfaction reveal that digitalization creates a perception of a general improvement in public services and contributes positively to the state-citizen relationship. As a matter of fact, one participant *emphasized this relationship with the statement* "When we have such systems, our trust in the state increases" (K7).

On the other hand, it is reflected in the opinions of the participants that the structural problems related to service quality have not completely disappeared with the digital system. It was stated that problems such as insufficient number of doctors and short examination time continued, and MHRS was limited in solving these problems alone. Finally, a significant part of the participants stated that they have a sense of expectation and confidence that the system will be further developed in the future; expressed the opinion that although the current situation is positive, it is open to improvement. Overall, the table reveals that MHRS is an important tool that enhances the accessibility and perceived quality of public services in the digital transformation process, but it has aspects that need to be improved in terms of integration and structural service issues.

Findings on the Theme of Inclusion and Digital Inequalities

The findings on the theme of Inclusion and Digital Inequalities are presented in Table 5.

Table 5. Findings on the Theme of Inclusion and Digital Inequalities

Child Theme	Category	Participant Testimonials
Different User Groups	Challenges Faced by Seniors	*"My mother is 70 years old, she cannot use the system alone, I am helping." (K8)"My father even forgets his e-Government password all the time, we have to reset it every time." (K4)"The system is very complicated for the elderly, they prefer to go to the hospital and pick it up." (K11)"Our neighbor is old, he cannot make an appointment if we do not help." (K15)*
	Access Problems of Disabled Individuals	*"There are no voice commands for the visually impaired in the system, how will they use them?" (K3)"Accessibility features for citizens with disabilities are missing." (K14)*
	Countryside and Internet Access	*"There is no internet in the village, they cannot enter the system, they have to come to the city." (K13)"In some places, the internet infrastructure is weak, the system starts slowly." (K9)"What will people do in places without internet, they are victims." (K6)*
	Proxy Use and Support Need	*"I make all the appointments in my family, no one knows how it's done." (K2)"My wife, my mother, my father are all asking me for help for the appointment." (K15)"Most people around me can make appointments with the help of their children." (K1)"There are a few people in the neighborhood who know, everyone asks them." (K4)*
Digital Literacy	Advantage of the Young Generation	*"I'm young, technology is very easy for me, I've never had a hard time." (K3)"I am a student, I use such systems comfortably." (K10)"There is no problem for the younger generation, we are already used to digital." (K7)*
	Adaptation Process of the Middle Age Group	*"I'm 45 years old, I had a hard time at first, but I learned over time." (K5)"I adapted because I use technology in my working life, but not everyone is like that." (K12)"I'm in middle age, I tried a bit, but I finally got it done." (K8)*
	The Digital Divide and the Need for Education	*"The system is good, but education should be given for those who do not know." (K1)"Courses should be opened in public education centers, people should learn." (K6)"It would be great if trainings were organized for the elderly." (K9)"Digital literacy is very important, we must educate the society on this issue." (K14)"If only there were counselors in hospitals to help people." (K11)"It would be useful to prepare video lectures and guides for those who do not know." (K13)*

The findings presented in Table 5 reveal that the use of MHRS is not equally accessible to different social groups in the context of inclusion and digital inequalities. In the evaluations of different user groups, it is seen that especially elderly individuals have significant difficulties in using digital systems. Participants stated that elderly individuals have difficulties in basic stages such as managing e-Government passwords, understanding menus and following transaction steps. One participant expressed this situation with the *words, "My mother is 70 years old, she cannot use the system alone, I am helping" (K8).* Similarly, it has been stated that the elderly often prefer to go to the hospital in person instead of using the digital system.

The findings regarding the access of persons with disabilities show that the system has limitations in terms of universal design principles. It has been stated that voice guidance and assistive accessibility features are insufficient, especially for visually impaired users. This situation is embodied in the statement "*There are no voice commands for the visually impaired in the system, how will they use them" (K3*). For individuals living in rural areas, inadequacies in internet infrastructure stand out as one of the main obstacles to accessing MHRS. Participants stated that individuals could not access the system due to the lack or weak internet connection, especially in villages and rural areas, and had to go to city centers to access health services.

Findings on proxy use and the need for support show that digital inequalities are tried to be compensated through family and social networks. Many participants stated that they made appointments on behalf of their family members or people in their close circle, and that a small number of people with digital information became an "intermediary" for their environment. A participant summarized this situation with the words, *"I make all the appointments in my family, no one knows how it is done" (K2).* These findings show that the use of proxy has become a common practice and that the actual use of the system is shaped by individual digital competencies.

Under the sub-theme of digital literacy, it is seen that the younger generation has a distinct advantage in using digital systems such as MHRS. Young participants stated that they used the system easily and did not experience any adaptation problems because they grew up with technology. On the other hand, participants in the middle age group stated that although they had difficulty at the beginning, they adapted to the system over time. Opinions on the digital divide and the need for education show that most of the participants agree that digital literacy trainings should be disseminated in order to use MHRS effectively and inclusively. Proposals such as organizing courses in public education centers, establishing special education programs for the elderly and increasing guidance services in hospitals stand out as expectations for making the system more inclusive. Overall, these findings reveal that while MHRS is an important tool in the digitalization process, it has limitations in terms of inclusivity unless it is strengthened with supportive policies to reduce digital inequalities.

Findings on the Theme of Security and Future Prospects

The findings on the theme of Security and Future Prospects are presented in Table 6.

Table 6. Findings on the Theme of Security and Future Prospects

Child Theme	Category	Participant Testimonials
Data Security	Perception of Trust and Security	*"The e-Government system is secure, I trust the state." (K7)"My health information is in the hands of the state, I think it's okay." (K12)"I haven't had any problems so far, I trust the system." (K14)*
	Privacy Concerns	*"I'm worried if everyone can see what disease I have." (K4)"I don't know who my health data is shared with, it's kind of scary." (K11)"Frankly, I have doubts about my privacy." (K6)*
	Lack of Knowledge About Data Security	*"I don't know how my data is protected." (K1)"They don't tell us what the security measures are." (K9)"They say the system is safe, but how can we be sure?" (K13)"More transparency should be made about information security." (K15)*
Effects on Healthcare Personnel	Reduction in Personnel Workload	*"The staff at the hospital are less busy now, the system has made their job easier." (K2)"Registration processes have accelerated, staff seem to be less tired." (K5)*
	Improvement in Patient Management	*"The hospital management is more organized now, everyone has an appointment." (K10)"With the system, the chaos in hospitals has decreased." (K3)"Doctors are better prepared because they know the number of patients in advance." (K14)*
	New Problems and Adaptation Processes	*"Sometimes doctors have a hard time using the system, especially older doctors." (K8)"The staff still wants to work the old-fashioned way, there is an adaptation problem." (K11)"When there is a technical problem with the system, chaos breaks out in the hospital." (K4)*
Suggestions for Improvement	Technical Improvements	*"System capacity should be increased, it should not collapse in density." (K2)"The mobile app should be faster." (K10)"Search filters should be more detailed, finding a doctor should be easier." (K5)"The system should be made more user-friendly." (K12)*

Child Theme	Category	Participant Testimonials
	Expanding the Scope of Services	*"Private hospitals should also be included in the system." (K7)"If there was integration with pharmacies, prescription tracking would be easier." (K15)"Branches such as physical therapy and dietitian should also be added." (K3)"There should be an emergency appointment option." (K9)*
	Customer Support and Training	*"There should be a 24/7 live support line." (K6)"It would be very useful if video narrated guides were prepared." (K1)"MHRS information desks should be established in hospitals." (K13)"Special education programs should be organized for the elderly." (K8)"SMS or notification regarding system usage should be sent." (K4)"More information should be provided on social media." (K11)*

The findings presented in Table 6 show that the security dimension of MHRS and the expectations regarding the future of the system were evaluated by the participants on the axis of both trust and uncertainty. When the opinions on data security are examined, it is seen that a significant part of the participants perceive MHRS as a secure system based on the institutional trust in the e-Government infrastructure. This perception *is embodied in statements such as "the e-Government system is secure, I trust the state" (K7)* and "*I have not had any problems so far, I trust the system" (K14).* On the other hand, some respondents expressed concern about the privacy of their health data and uncertainty about who accessed personal information and for what purposes. These concerns are *expressed as "*I am worried if everyone can see what disease I have" (K4).

The lack of knowledge about data security is another prominent factor in the participant opinions. Although many participants had a general opinion that the system was secure, they stated that they were not sufficiently informed about the technical and administrative measures that provided this security. *The statements "I don't know how my data is protected" (K1)* and *"We should be more transparent about information security" (K15)* clearly reveal this expectation.

In the context of the effects on healthcare personnel, evaluations were made that MHRS reduced the workload of the staff by accelerating administrative processes and created a more organized structure in patient management. Participants stated that with the widespread appointment system, the density in hospitals has become more predictable and the patient flow is more planned. One participant summarized this situation with the words, "*With the system, the chaos in hospitals has decreased" (K3).* However, it was also stated that healthcare personnel, especially in older age groups, have difficulty in adapting to the digital system and problems arise in service delivery when technical problems occur.

The findings regarding the improvement proposals show that the participants have constructive and development-oriented expectations for the future of MHRS. Strengthening the technical infrastructure, increasing the operability of the system under intensity and improving the mobile application in terms of speed and usability are among the most frequently mentioned suggestions. In addition, the integration of private hospitals, pharmacies and different health branches into the system stands out as the main expectations for expanding the scope of services. In the dimension of user support and training, it was emphasized that live support services should be disseminated, video guides should be prepared and training programs should be organized especially for older persons. In general, the findings in this theme reveal that MHRS is perceived as a reliable digital public service, but a more transparent communication strategy on data security and structural improvements are needed for the sustainable development of the system.

DISCUSSION

In this research, it was revealed how citizens experience the MHRS system in the context of public administration principles, and in which functional dimensions it exhibits strengths and weaknesses. The findings indicate that MHRS has brought about a significant transformation in access to public healthcare services in Türkiye, but it brings with it technical, social, and managerial challenges.

MHRS user experiences show that e-government services are not only technological, but also a system that requires social inclusion, digital literacy and public administration principles to be handled holistically. The findings of Kurşun and Gökçen Kaygısız (2013, p. 82) that user satisfaction in MHRS is affected by social factors as well as technical infrastructure and the findings of Shareef et al. (2011, p. 408) on the critical role of perceived ease of use, trust and accessibility factors in e-government services coincide with the results of this study.

On the theme of system use and accessibility, regular use by individuals with chronic diseases supports Ahlan and Ahmad's (2015, p. 343) finding that continuous use of e-health services has a positive effect on disease management. The prevalence of proxy use shows that family structure and social solidarity shape the use of digital services in Türkiye, and this finding is in line with the findings of Zhao et al. (2017, p. 219) that collectivist culture affects technology acceptance in Asian societies. The conflicting findings in the user interface experience confirm Nielsen's (2012, p. 28) principle that interface design should consider all user levels. System congestion and technical glitches support the finding of Lean et al. (2009, p. 375) that system reliability in e-government services directly affects user trust.

In terms of service quality and user experience, it is seen that MHRS offers advantages in terms of time management, but these advantages are not experienced equally by all users. The difficulty of working individuals finding appointments outside of working hours supports Alshibly's (2014, p. 896) suggestion that e-government services should be compatible with working life. The challenges in appointment cancellation and modification processes coincide with the findings of Reddick and Turner (2012, p. 511) on the importance of flexibility and user control in e-government services.

On the theme of digital transformation and public service perception, it has been revealed that MHRS is perceived not only as an appointment system, but also as a concrete indicator of Türkiye's digitalization policies in public administration. The comparative evaluations of the participants with traditional methods support Chircu's (2008, p. 523) finding that e-government services save time and cost. The ease of e-Government integration confirms West's (2004, p. 16) finding that the single window approach increases citizen satisfaction. However, the inability to achieve full integration with laboratory results and prescribing information supports the finding of Klievink et al. (2016, p. 881) that integration deficiencies negatively impact the user experience.

The theme of inclusion and digital inequalities constitutes one of the critical findings of the research. The difficulties of elderly individuals in using the system coincide with the findings of Niehaves and Plattfaut (2014, p. 75) that age is a significant barrier to the acceptance of e-government services. The problem of the digital divide supports Van Dijk's (2006, p. 221) analysis that digital inequalities include dimensions of utilization skills and motivation, not just access. While the technological advantages of the young generation reflect the concept of "digital natives", the adaptation difficulties of the middle and older age groups show the moderating effect of age on technology acceptance (Hargittai, 2010, p. 92).

On the theme of security, privacy and future expectations, it is seen that users trust the government regarding personal data security, but this trust stems from a lack of information. This finding supports Bélanger and Carter's (2008, p. 166) finding that trust in e-government services is based on corporate trust. Recommendations for system development indicate that MHRS has a high potential for improvement and that user feedback should be integrated into the system design.

Evaluating the research findings in the context of public administration principles requires questioning the extent to which MHRS meets core values such as accessibility, transparency, accountability, and effectiveness. Although it is positive that the system offers 24/7 online access in terms of accessibility, it is seen that not all citizens can benefit equally due to digital inequalities. In terms of user orientation, it shows that user diversity is not sufficiently taken into account in the design, which shows that the citizen-centered service delivery of Denhardt and Denhardt (2007, p. 29) cannot be fully implemented.

In terms of policy implications, achieving digital inclusivity is possible through digital literacy trainings, alternative access channels, and social support mechanisms. Strengthening the system infrastructure should include technical capacity enhancement as well as the implementation of design principles centered around user experience. Embracing a culture of continuous improvement will ensure that MHRS, as a dynamic system, adapts to user needs and technological advancements.

CONCLUSION AND RECOMMENDATIONS

This research, in which MHRS was evaluated in the context of user experiences and public administration principles, revealed the importance of e-government services in the digital transformation process. The findings show that MHRS has created a radical transformation in access to public health services in Türkiye, but it brings with it technical, social and administrative challenges. On the theme of system use and accessibility, it was observed that individuals with chronic diseases rarely used it while individuals with chronic diseases rarely used it, and the prevalence of proxy use revealed that the system operates within social solidarity networks. Tech-savvy users find the system simple, while users with low digital literacy experience navigation difficulties.

In terms of service quality, it has been determined that MHRS offers significant advantages in terms of time management, but appointment time limitations and the difficulty of employees in finding appointments outside of working hours are important problems. System congestion and technical glitches severely undermine user satisfaction and lead to doubts about reliability. In the theme of digital transformation, it has been revealed that MHRS is perceived as a concrete indicator of Türkiye's digitalization policies in public administration. While the ease of e-Government integration is evaluated positively, the inability to fully integrate with laboratory results and prescription information of some institutions shows that the potential of the system cannot be fully utilized. In the theme of inclusiveness, the difficulties of elderly individuals in using the system have become evident as a social digital divide problem, and it has been seen that the system is not in accordance with universal design principles. It has been determined that users trust the state in terms of security and privacy, but this trust is due to lack of information, and the principles of transparency and accountability are not adequately implemented.

For the Ministry of Health and policy makers, it is recommended to increase the infrastructure capacity of MHRS, diversify appointment opening hours and create a dynamic appointment pool. For the needs of working individuals, the appointment capacity outside of

working hours should be increased, and backup systems should be developed to be activated in case of system crashes. The scope of MHRS should be increased, private health institutions and university hospitals should be fully included, and online reservation systems for laboratory tests and imaging services should be integrated. Full integration with E-Nabız and Family Medicine Information System should be ensured and it should be possible to manage data from a single point. In order to reduce digital inequalities, special support mechanisms should be established for older persons and citizens with low digital literacy levels, widespread digital literacy training programs should be organized and alternative access channels should be strengthened. Transparent communication strategies should be developed regarding personal data security, and users should be provided with clear information about their rights to access and delete their data.

For health institutions, MHRS information desks should be established in hospitals and personnel should be assigned to assist patients, especially elderly patients or those who have difficulty using the system. Visual guides and interactive kiosk systems should be available in waiting areas, and internet and computer facilities should be provided in health centers in rural areas. It should be ensured that hospital appointment capacities are reflected realistically in the system, and dynamic capacity management should be implemented by taking into account doctor leaves and surgery schedules. In order to reduce appointment cancellation rates, reminder systems should be strengthened, and canceled appointments should be announced to waiting patients with automatic notifications.

For system developers, a comprehensive design overhaul should be carried out to improve the user interface and experience, and simplified navigation should be offered for users with low digital literacy levels. The number of clicks in the appointment booking process should be reduced, and user tests from different demographic groups should be carried out regularly. Mobile app performance should be optimized, and advanced search and filtering features should be added. Personalized appointment recommendations and predictive healthcare can be improved using artificial intelligence and machine learning.

For citizens, it is recommended to benefit from free training programs offered by local governments and non-governmental organizations to improve their digital literacy skills. It is important to create digital solidarity networks within the family and for the younger generation to guide older family members. Secure storage of e-Government passwords and communication of problems encountered in the use of the system through feedback mechanisms will contribute to the development of the system. Making conscious choices in the use of MHRS, canceling appointments for situations that cannot be attended, and complying with appointment times will both increase the quality of individual health services and contribute to the overall efficiency of the system.

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