...::KENT AKADEMİSİ | URBAN ACADEMY

Volume: 17 Issue: 3 - 2024 | Cilt: 17 Sayı 3 - 2024

ARTICLE INFO | MAKALE KÜNYESİ
Research Article | Araştırma Makalesi
Submission Date | Gönderilme Tarihi: 12.06.2023
Admission Date | Kabul Tarihi: 27.02.2024

CITATION INFO | ATIF KÜNYESİ
BAYDOĞAN, M. Ç., & DURSUN, S. (2024). Research on User Satisfaction in Kayseri Province Primary Health Care Buildings, Kent Akademisi Dergisi, 17(3):794-826. https://doi.org/10.35674/kent.1312662

Research on User Satisfaction Primary Health Care Buildings in Kayseri

Kayseri Birinci Basamak Sağlık Yapıları Kullanıcı Memnuniyeti Üzerine Araştırma

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Kayseri Birinci Basamak Sağlık Yapıları Kullanıcı Memnuniyeti Üzerine Araştırma

İlk aşamadaki tanı, tedavi edici ve rehabilitasyon hizmetleri ile koruyucu sağlık hizmetlerinin birlikte verildiği birinci basamak sağlık kuruluşlarından aile sağlığı merkezlerinin mekân niteliğini belirleyen tasarım kriterleri çalışma konusunu olarak belirlemiştir. Alan çalışması kapsamında Kayseri kenti merkez ilçelerinde bulunan birinci basamak sağlık hizmetlerinin verildiği aile sağlığı merkezlerinin konumları, sayıları ve dağılımları incelenmiştir. Seçilen aile sağlığı merkezleri, oluşturulan değerlendirme kriterlerine göre incelenmiştir. Aile sağlığı merkezi kullanıcılarından birisi olan hastalar tarafından nasıl algılandığını anlamak, mekân kalitesi bağlamında memnuniyet oranlarının değerlendirilmesi amacıyla anket çalışması yapılmıştır. Söz konusu küçük ölçekli bu sağlık yapılarının çoğu tip projelerden elde edildiği için bağlamla ilişkisi olmayan, hastalıklı yapılar olarak üretildiği saptanmıştır. Yalnızca fiziksel olanın düşünüldüğü, kullanıcılarının psikolojik ve sosyal ihtiyaçlarının göz ardı edildiği sağlık yapılarının, iyileşme mekanları bağlamında yetersiz olduğu sonucuna varılmıştır. Çalışma sonucunda elde edilen tüm bulgulara dayanarak toplumun tamamını ilgilendiren aile sağlık merkezi yapılarının, gelecekte iyileşmeye katkı sağlayan, nitelikli yapılar haline gelmesi için tasarım kriterlerine öneriler getirilmiştir.

Anahtar Kelimeler: Birinci Basamak Sağlık Yapıları, Kullanıcı Memnuniyeti, Sağlık Tesisleri Tasarımı

ABSTRACT

The design criteria determining the spatial quality of family health centers, one of the primary health care institutions where diagnostic, therapeutic, and rehabilitation services and preventive health services are provided together, were determined as the subject of the study. Within the scope of the field study, the location, number, and distribution of family health centers, where primary health care services are provided in the central districts of Kayseri city, were investigated. The selected family health centers were examined according to the evaluation criteria. A survey was conducted to understand how family health centers are perceived by patients, one of their users, and to evaluate their satisfaction rates regarding space quality. It was determined that these small-scale health centers are produced as structures that have no relation to the context since most of them are derived from typical projects. It was concluded that health buildings, where only physicality is considered while the psychological and social needs of the users are ignored, are inadequate in terms of healing spaces. Based on all the findings obtained as a result of the study, suggestions were made on the design criteria for family health center buildings, which concern the whole society, to become qualified buildings that contribute to healing in the future.

Keywords: Primary Health Care Buildings, User Satisfaction, Health Facility Design

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INTRODUCTION:

The development of health services worldwide has transformed and continues to transform the places and buildings where these services are provided. On the other hand, it is seen that the changes in the health sector, which are formed according to the health policies of governments, also affect the places where health services are provided. In recent years in Turkey, the use of primary healthcare structures has dramatically increased, especially with the increase in urban population, health policy changes, and the pandemic. When family health centers are examined, it is seen that the minimum physical conditions are not detailed and sufficient, architectural design criteria are reduced only to the minimum space size, architectural structures are built on seeing the need in the conditions of the day, and a sloppy approach is adopted.

In this sense, the study investigates the use and user satisfaction of health buildings designed with a concrete understanding of physical dimensions, standards, circulation, etc., which are generally different from other building plan constructions under the needs, technology, and possibilities of the era or period.

In other words, the study's area of focus is delineated within the context of universal health building design, contemporary developments in health building design, primary healthcare building's architectural-spatial features in Turkey, minimum design standards, and user contentment.

1.1. Purpose of the Study

The study aims to determine the extent to which the spatial needs of the users of family health centers, which are used as the first point of application, are met and to evaluate user satisfaction rates in the context of space quality. The users in three major central districts of Kayseri province were reached through a survey. The main objective was to develop concrete suggestions and predictions from the data obtained as a result.

For this purpose, the location, number, and distribution of family health centers where primary health care services are provided in the central districts of Kayseri province were investigated. The selected family health centers were examined according to the standards. A questionnaire study was conducted to understand how the family health center is perceived by patients who are among the users of the family health center and to evaluate the satisfaction rates of the quality of space. Based on all the findings obtained as a result of the study, suggestions were presented to ensure that family health center structures, which concern the whole society, become more qualified structures that contribute to future healing and provide input to design criteria.

While medical knowledge in the field of health is catching up with current advances and development, even if the location, conditions, and land data of the family health center buildings where health services are provided in Turkey change, the quality of the spaces remains the same, new ones are built with the same problems. It is seen that there is no effort to improve them. This study hypothesizes that family health center buildings, one of the primary health care institutions, are architectural structures with low visual, physical, and perceptual space quality due to the lack of design criteria.

In short, this study aims to investigate primary healthcare buildings in Kayseri, where there is not enough scientific research on them, to reveal the current situation and make suggestions for the design of future health buildings. It is also aimed to evaluate the architectural features, space quality, comfort conditions, functionality, and transportation of family health centers, which are used as the first point of reference, in line with the users' opinions.

The heading levels should be limited to three, except in mandatory cases where categorical distinctions become more important.

1.2. Scope and Importance of the Study

Scientific research mainly concentrates on nursing, public health, and family medicine. Şenkal Sezer's (2015) article titled *"Evaluation of Comfort Conditions in Health Centers: Bursa/Nilüfer Example"*, Kaya (2012)'s *"Designing a Prototype Family Health Center Based on the Use of Small-Scale Portable Structures and Mobile Health Structures in Architecture"* master's thesis, Baran (2019)'s "*Evaluation of Family Health Centers in terms of Accessibility and Usability: Bingöl Province*'' master's thesis is included in the literature. Theoretical knowledge and field studies (practical knowledge) about primary healthcare facilities are rare in the architectural literature. This situation can be considered as an obstacle to the design, perception, development, and standards of this building type, which is widely used in Turkey.

In the 2018 regulation book of the Ministry of Health, Primary Health Care Services are defined as an easily accessible, effective, and widespread health service provision where diagnostic, therapeutic, and rehabilitation services in the first stage and health promotion and preventive health services are provided together (URL-1) Primary care services include home and outpatient treatment services provided by the physician or health personnel (Fişek, 1983). The number of Family Medicine Units in 2021 was 26,928, and the number of Family Health Centers was 8,057 (Table 1). (URL-2)

Table 1. Number of Primary Care Institutions in Turkey by Years, Ministry of Health (URL-2)

	2002	**2017**	**2018**	**2019**	**2020**	**2021**
Health Center	5,055	-	-	-	-	-
Family Medicine Unit	-	25,198	26,252	26,476	26,594	26,928
Family Health Center	-	7,774	7,979	7,997	8,015	8,057
Community Health Center	-	972	776	778	779	778*
Health House	2,899	5,320	5,259	5,078	5,027	4,983

Source: General Directorate of Public Health, General Directorate of Health Services
*The number of Community Health Centers includes 429 District Health Directorates providing the same service in districts with a population of 30,000 or more.

In 2021, the number of visits to primary healthcare institutions (Primary Care Total) was 239,053,780 people, and the number of visits to physicians per capita in Türkiye was 2.8 (URL-3). In other words, primary healthcare structures constitute Turkey's most utilized type of structure in terms of duration, continuity, and frequency.

In the study, the reason for choosing primary health care structures in Kayseri province is that it is a metropolitan city. Kayseri shows a planned development compared to other provinces, having a population of 1,441,523 (URL-4). The population of these three districts is 1,172,563. As primary health care services, 386 physicians work in 71 family health Centers in 3 large districts (Melikgazi, Kocasinan, Talas). The number of people per health building is approximately 16,000. Approximately 3,100 patients per doctor work in these buildings (Table 2) (URL-5). The number of users in Kayseri is average in population density compared to the provinces of Turkey. Although the number, speed, and variety of new healthcare buildings in Kayseri are high, there has been a limited search for new architectural designs. All health structures in Kayseri province are given in Table 2.

Table 2. Kayseri Health Buildings, 2021 (General Directorate of Public Health, General Directorate of Health Services)(URL-2)

Province Name	Number of Hospitals	Number of Family Medicine Units	Population per Family Medicine Unit
Kayseri	27	463	**3.098**

2. Material and Method

The theoretical part of the study was determined within the framework of laws and regulations affecting the design of primary healthcare buildings in Turkey. It is known that laws and regulations play a major role in determining the design standards, types, and groups of buildings. The field research of the study was determined as the evaluation of the buildings developed on these design standards by the users. Assuming that these intensively used small healthcare buildings meet the minimum design standards, the satisfaction of the building users was questioned. It is clear that this type of building, which even healthy individuals use at least a few times throughout their lives, is an important architectural design problem in Turkey. On-site observations, examinations, and questionnaires were conducted on these building types, which barely comply with the standards and have problems even with the primary issue of access and whose users are generally unhealthy individuals. Fieldwork and data collection were carried out in Kayseri province. An evaluation of user satisfaction in primary healthcare buildings was reached, and conclusions and recommendations for Turkey, in general, were reached.

2.1. Health Facility Design within the Framework of Laws and Regulations

The minimum design standards guideline, which is one of the rare publications defining primary healthcare buildings in Turkey, was published by the Ministry of Health in 2010 (URL-6). In this guideline, it was stated that Regulation on Emergency Health Services (2000) (URL-7), Regulation on Emergency Aid Organization and Planning Principles Regarding Disasters (2013) (URL-8), Regulation on Private Health Institutions Providing Oral and Dental Health Services (2015) (URL-9), Regulation on Ambulances and Emergency Health Vehicles and Ambulance Services (2006) (URL-10), Regulation on Facilities to be Built and Opened on the Side of Highways (1997) (URL-11), Parking Regulation (2018) (URL-12), Unsanitary Establishment Regulation (1993, 2003) (URL-13), Domestic and Medical Waste Regulation (2017)(URL-14), Solid Waste Regulation (2015)(URL-15), No. 3030 Type Zoning Regulation for Municipalities Excluding Metropolitan Municipalities (1985, 1999, 2000) (URL-16), Regulation on Principles of Plan Making (1985, repealed by the Spatial Plans Construction Regulation published in the Official Gazette dated 14/06/2014 and numbered 29030)(URL-17), Environmental Noise Control Regulation (1983, 2000)(URL-18), Road Traffic Regulation (1997)(URL-19), Regulation on the Implementation of the Coastal Law (1990, 1992) (URL-20), Regulation on Private Nursing Homes and Elderly Care Homes (2008) (URL-21), Water Pollution Regulation (2004) (URL-22), Earthquake Regulation (2018)(URL-23), Fire Regulation (2007)(URL-24), Municipal Regulation on Water and Sewerage (2012)(URL-25), Installation Project Municipality and Natural Gas Regulation (2002)(URL-26) and Regulation on the Construction of Shelters (1988)(URL-27) should be complied with in health facilities (URL-6). Although many regulations affect and control these types of buildings, no clear directive/rule limits the design and physical conditions of primary healthcare buildings. The abovementioned laws and regulations generally describe how buildings are built and include articles that change construction conditions. However, no regulation directly contributes to or shapes the architectural design of primary healthcare buildings. These regulations were examined, and no article that could change or affect the architectural design of primary health care buildings, the aesthetic aspect of the buildings, their perception, and user satisfaction was observed. The regulations that will be able to affect the physical conditions, size, number of spaces, equipment, and utilization of such buildings will be discussed below. The articles on these regulations that may affect the architectural

design and the comfort and quality of the space were analyzed, and the articles related to the operation, management, and health procedures were removed.

The minimum physical requirements for family health centers are set out in the Regulation Book dated October 2018 (URL-1). Family health centers should have 2-6 family medicine units with a total area of 60 square meters for a single-family physician. Waiting areas must have ergonomic chairs, brochures, posters, hand antiseptic, and wish/suggestion boxes. Examination rooms should have a sink and be at least 10 square meters. Medical intervention rooms should have an examination table, sink, and emergency materials. Easy access for disabled and older adults should be provided. Indoor temperature should be between 18-27 °C. The floor covering should be easy to clean.

According to the Family Medicine Implementation Regulation, other physical conditions of the family health center are as follows (URL-28):

1. The directorate should do the first landscaping of rented detached buildings. Physicians should maintain it afterwards.

2. Physicians can share spaces other than the examination room.

The regulation book lists the minimum requirements for family health centers, including safety, accessibility, sufficient space, and appropriate materials. However, the criteria for achieving barrier-free and accessible buildings are not clear. This is important for the increasing elderly population and disabled users in Turkey, according to Enginöz (2015).

When the minimum physical conditions required in family health centers are investigated, it is understood that the space requirements are not detailed and sufficient. The emphasis is more on the spaces required for the needs program and the minimum area dimensions of these spaces. It is seen that an approach is adopted in which architectural design criteria are reduced only to the minimum space size.

2.2. Design Criteria and Architectural Features of Family Health Centers

The planning, design, and implementation of health structures require great importance and meticulousness. Health structures are institutions designed to contribute to and maintain a society's health, where compulsory diagnosis and treatment services are provided. Family health centers constitute the first step of these institutions as they are the first place of application and are seen as the critical element of the health service delivery system (Sezer, 2015). A family health center is an institution that can be opened by one or more family physicians and where family medicine services are provided together by family health workers (URL-1). Turkey has no clearly defined criteria regarding the design, construction, and architectural features of FHC buildings that many people use.

Other issues not required in the minimum physical conditions of family health centers that may affect the design criteria of health buildings and their explanations are given below.

Design and production methods of Family Health Center Buildings in Turkey;

Today, family health center structures are obtained in several ways, and these ways are as follows;

1. With the typical projects distributed by the Ministry of Health for implementation,
2. By converting buildings previously allocated for health centers,
3. In the structures that meet the minimum conditions with the family physicians' means and are controlled and approved by the provincial health directorates,

4. Donated buildings: Family health center buildings with generally low budgets, designed by an architect on land allocated by municipalities at the request of philanthropic citizens.

Some family health centers built by philanthropists are constructed first, and licensing is done based on public interest long after operations have started.

In today's world, municipalities often view healthcare as a source of income and may sell land or workplaces in front of family health center buildings through open-negotiated tenders. It is important to note that family health center buildings are often obtained through philanthropists' generous donations and support. The Turkish Minimum Design Standards for Healthcare Buildings (2010) (URL-6) emphasize the importance of designing healthcare buildings that cater to the needs of the whole society, as these buildings are crucial for people during difficult times. In many countries, the design phase of health facility projects is as important as the construction period. However, in Turkey, health facility projects are often completed in very short periods, such as one month, with the use of ready-made copies or typical projects. Unfortunately, this often leads to the construction of unqualified buildings that only partially serve their intended purpose. The Turkish Minimum Design Standards for Health Buildings (2010) (URL-6) states that so-called "exemplary projects" in the health sector often lead to additional modification costs due to changing needs over time. In many cases, the desired service quality cannot be achieved, and the cost of the structure is less than what is necessary. Therefore, it is crucial to avoid copying and typical projects in different locations, as they often lead to structures that have no context with the place.

It should not be forgotten that small-scale health structures designed with a healing and patient-oriented approach will contribute to health, society, and the economy in the long term by looking at health structures from a different perspective. In this context, the ways of production should also be questioned.

2.3. Literature Review & New Approaches in HealthCare Building Design

Due to the different implementations of the health system in different countries, there are not many studies in the literature on the design of primary healthcare buildings of the type included in the health system in Turkey. Foreign examples and practices similar to Turkey's health policy are generally found in African countries. For this reason, the concepts found in foreign literature to design primary healthcare buildings were investigated. Examples and literature that are thought to meet the scope of content have been tried to be included.

In this context, overseas studies have been conducted under the titles of standards, design within the framework of guidelines, healing spaces, evidence-based design, health care facilities gardens, biophilic design, humanistic architecture, Therapeutic design benefits, future trends, and design recommendations. These academic texts were generally created within the framework of field studies. Unlike in our country, the design and improvement of healthcare buildings, which have many dimensions, is handled in more detail, especially in America and Europe.

The World Health Organization defines "health" as "a state of physical, mental and social well-being, not merely the absence of disease or infirmity" (WHO, 1946).

There is a significant amount of literature on the design of healthcare buildings, focusing on hospitals and other healthcare facilities. However, some authors have delved deeper into how architecture can cater to the needs of specific groups of people, such as the elderly and those with medical conditions. Other literature has explored how the architectural aspects of interior design can impact human health. The discussion of compliance with environmental criteria is usually within the sustainability framework, such as the new requirements of the European Union (Petrishor, 2015). Petrishor's

literature review highlights a vast amount of literature on designing hospitals and healthcare facilities. Other authors have looked into the architecture's suitability to specific needs, such as those of the elderly (Jara et al., 2009; Petrishor, 2015) and people with medical conditions (Schwarz and Brent, 1999; Petrishor, 2015).

Additionally, some literature explores the physical aspects of interior design that can impact human health, such as lighting, privacy, and landscape (Evans and McCoy, 1998; Petrishor, 2015). The sustainability framework is also important, including adherence to environmental standards (Edwards, 1996; Lyubomirsky et al., 2005). Some scientific literature suggests that traditional hospital designs can cause stress and danger for patients and staff, such as excessive noise, poor lighting, and a lack of privacy. Physical factors that should be considered when creating a healing environment include noise control, air quality, thermal comfort, communication, color, and texture (Malkin, 1992). Research has shown that new hospital environments can lead to better patient outcomes, with reduced length of stay being one example (Lawson, 2010). The preferences and needs of users and the built environment should shape the design of sustainable healthcare buildings. Contemporary trends should be evaluated based on the designer's and the user's experience and understanding (Rechel, 2009).

The design brief is a critical element in creating a healthcare project. It should outline clinical service requirements, design objectives, environmental quality goals, policy adherence, and technical specifications while considering the project's lifespan. (Phiri, 2014).

The design of healthcare facilities should prioritize patient comfort and reduce waiting and processing times through spatial layout improvements (Haji et al., 2006). Numerous studies examine the correlation between physical environments and various issues, including patient safety, pain management, depression, work efficiency, and staff satisfaction. (Ulrich et al. 2008, Devlin et al. 2003). The physical environment of a building impacts the quality of care, service, staff morale, productivity, and health outcomes. Factors such as size, layout, lighting, color scheme, air quality, ease of navigation, and overall atmosphere should be considered when evaluating its quality (Preiser, 2009).

The impact of environmental conditions on human health needs to be better understood. A study identified certain interior design elements that represent different architectural dimensions. However, insufficient evidence to support a direct impact on human health requires further investigation. (Ewans and McCoy, 1998).

Studies like environmental psychology, medicine, epidemiology, planning, and sociology focus on the connections between social, environmental, and health factors. They explore how environmental conditions affect health and how a healthy design can incorporate the natural environment to enhance health or reduce the adverse effects of pollution and climate change. (Petrishor, 2015)

Architects designing healthcare facilities should consider guidelines prioritizing health needs and future healthcare demand (Giofrè and Terranova, 2006).

Preiser et al. (2009) suggest that patient-centered care environments should prioritize site planning, wayfinding, amenities, and diagnostic and therapeutic functions. Collaborating with architects can aid in developing corrective measures and interventions. Efficiency ratings should be established to classify health unit characteristics, including site design, space, layout, aesthetics, patient flow, environment, adaptability, security, and quality of materials.

For future health studies, these protocols would be beneficial: 1. Systematic Performance Assessment Protocol 2. Wayfinding and Overall Functioning 3. Specialized User Groups 4. High-Quality Architectural Design 5. The Role of Local Culture in site selection (Preiser et al., 2009). Patients in a modernized clinic were more likely to change their health behaviors and food quality. However, this

improvement may be due to a design placebo effect rather than changes in the building. More research is needed to determine the specific designs and environmental features that affect patients (Rehn, Schuster, 2017). Healthcare environments can positively affect human health, including disease control. Architecture also plays a therapeutic role in human health and well-being (Ulrich et al., 2008).

Good architecture and aesthetic quality are important in creating healthcare facilities that positively impact well-being and reduce stress. The findings emphasize the significance of architectural quality for hospital design and other healthcare facilities that cater to vulnerable individuals (Frandsen, Rhyl, 2010). The aesthetic quality of a clinic's design can impact patients' expectations of their treatment and their health behaviors. Evidence-based design approaches, such as psychosocially supportive design and salutogenic design, aim to promote health through the built environment by addressing the shortcomings of modern healthcare buildings (Rehn and Schuster, 2017).

"The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity" (Ulrich et al., 2004) investigated how building design affects clinical outcomes and staff efficiency. The report explored whether improved building design can help reduce stress and risks for patients, families, and staff (Ulrich et al., 2004; Petrishor, 2015).

Patient falls in healthcare settings are extensively researched due to their harmful effects on patients' physical and psychological well-being and length of stay. (Brandis, 1999; Ulrich et al., 2004). Patient confidentiality and privacy may be compromised when healthcare professionals discuss sensitive information within earshot of others (Ubel et al., 1995; Ulrich et al., 2004). Spatial Disorientation Wayfinding issues in hospitals can be stressful, negatively affecting outpatients and visitors, particularly those who are unfamiliar, stressed, and disoriented. Exterior clues: signs and clues leading to the health structure should be carefully evaluated, as the parking lot is the patient's first point of contact with the hospital (Carpman et al., 1985). Local knowledge: Patients navigating to the building are aided by brochures, maps, directories, and signage for wayfinding (Carpman et al., 1985; Levinew et al., 1984; Nelson-Shulman, 1983; Wright et al.,1993). Overall structure: The layout of healthcare buildings has specific features that influence people's movement (Haq and Zimring, 2003; Peponis, Ulrich et al., 1990; Ulrich et al., 2004).

When planning a healthcare facility, it is important to identify integrated circulation lines that people tend to use and place key points and facilities accordingly (Peponis et al., 1990). Studies have shown that exposure to both natural and artificial light can have a positive impact on depression, agitation, and other related symptoms. Additionally, engaging in enjoyable activities such as being in nature, listening to music, and being around pets can help alleviate stress. (Ulrich, 1991)

Even a brief time spent in nature can provide significant stress relief within just a few minutes in healthcare settings (Parsons and Hartig, 2000; Ulrich, 1999). Hospital gardens promote social support, create a calming environment, and provide an escape from clinical settings (Cooper Marcus and Barnes, 1995; Ulrich, 1999; Ulrich et al., 2004). Patients prefer representational nature art over chaotic abstract art in hospital settings (Ulrich and Gilpin,2003). Patient records revealed four themes related to gardens in healthcare facilities: the desire to escape the hospital experience, immersion in nature, access to fresh air, and the restorative benefits of gardens. Studies cited in a literature review showed that gardens positively impact patient well-being (Ulrich and Zimring, 2004). Gardens benefit the well-being of individuals in healthcare environments. Healing gardens can result in positive experiences for patients, staff, and visitors. They should be designed to promote relaxation, physical activity, and socialization (Reeve et al., 2017).

Evidence-Based Design (EBD): Evidence-based design has become essential to healthcare building design in developed countries. It involves using the best available evidence to create environments

that support patients, families, and staff and provide a caring, effective, safe, patient-centered experience (Ulrich et al., 2004).

Evidence-based design of health structures: Healthcare is moving towards evidence-based design, using research to link hospital environments to patient and staff outcomes. (Hamilton, 2003).

Hospital outdoor spaces should prioritize a calming atmosphere as an additional healthcare service, with features that can rebrand the hospital as welcoming. This can have therapeutic effects and promote positive health benefits for patients. The goal is to create a shared and familiar environment within a space that can be psychologically constricting for patients (Nedučin, 2010). Architectural design can positively impact a patient's recovery process by incorporating natural light, sound, and green spaces. Building clients and decision-makers should take note of this when investing in healthcare facilities over the next decade (Frandsen and Ryhl, 2010).

Biophilic design aims to create positive environmental impacts and improve people's physical, social, and mental well-being (Kellert, 2008b, p. 3). Designing care facilities with a healing atmosphere involves considering physical aspects and biophilic design. Recent studies show better health outcomes in modern hospitals prioritizing access to outdoor areas, patient privacy, lighting, and other factors. Old hospital designs were criticized for being dull, disorienting, unpleasant, lacking natural light, noisy, and isolating. Chitranshi (2018) highlights the significance of physical design in creating a healing environment (Chitranshi, 2018). Biophilic design includes sensory variability and information richness. It involves natural elements with positive environmental impacts and enhances physical and mental health, productivity, and well-being (Kellert, 2008b, p. 3). Biophilic design should consider practical technology and cater to the needs of medical staff, employees, patients, and their families in a hospital setting (Zhong et al., 2022).

When designing healthcare facilities, the guidelines consider users' physical and psychological comfort needs. Qualitative and quantitative data are used to assess factors such as safety, usability, privacy, and environmental comfort. The guidelines also summarize codes, standards, and regulations and define procedures for accreditation (Thi et al., 2002; Raanaas et al., 2012; Bosia et al., 2016). Users' needs are assessed based on safety, usability, privacy, ease of work, environment, and comfort. (Capolongo et al., 2013; Bosia et al., 2016). Bosia et al. (2016), cited in Del Nord (2008), explained the procedures and functional characteristics necessary for health facilities to obtain the qualification and formal accreditation, design guidelines, codes, and standards, and comply with local and national regulations (Del Nord, 2008; Bosia et al., 2016). Topics related to the architectural design of healthcare facilities include healthcare activity classification, necessary space for medical procedures, healthcare enterprise types, standards and guidelines for design, recent trends, and successful design practices (Del Nord, 2008; Bosia et al., 2016).

The health sector has shifted towards a patient-centered approach globally. The importance of a healing physical environment is emphasized through research. Patient-oriented design is increasingly recognized as contributing to overall health (Sungur Ergenoğlu and Aytuğ, 2007).Ersoy (2010) states that well-designed architectural projects in the world are the end products of an uninterrupted process, which she calls a chain of theory, research, and practice, and that a user-oriented approach is included in the design by trying to analyze users' perceptions and experiences of space (Figure 1).

I	II	III
formation of theory	research area	design/implementation process
CULTURE-SPACE RELATIONS	ENVIRONMENT-BEHAVIORAL SCIENCES	USER-ORIENTED DESIGN

Figure 1. Adapted from the "Theory-Research-Practice" Chain (Ersoy, 2010).

The space and the user are in constant interaction, and it is seen that psychological needs are emphasized as well as physical needs under the title of design criteria of health structures on the effects of the space on the user. In addition to the physical needs of the users, their psychological and social needs should not be ignored. Health structures should be designed to be psychologically supportive.

Design criteria of health structures emphasize psychological as well as physical needs. Healthcare buildings should be psychologically supportive, with a patient-centered design approach and healing spaces considering the therapeutic environment, belonging and self, and positive stimulus. Patient-centered design is crucial in modern healthcare buildings, emphasizing physical and mental health needs (Gezer, 2014). Sungur Ergenoğlu and Aytuğ (2007) state that there is a radical change and transformation in design goals with the patient-centered design approach. According to this design approach, all needs should be met by focusing on people. According to Gezer (2014), architects should design spaces with a patient-oriented approach that considers different age groups and people with special conditions. The aim is to provide equal opportunity to all people, regardless of their limitations, and to solve their discomfort through health structures.

Health care service has evolved to consider users' expectations and enable patients to make more informed decisions by cooperating with doctors and taking an active role in treatment. Sungur Ergenoğlu and Aytuğ (2007) state that this change can affect the design of health institutions with a hospitality approach in line with patients' views. Even though it has started to be adopted as a new design approach, in 1971, Tempia (1971) stated that the public expects a "humane" hospitalization in the hospital, not only the "striking facilities" of medicine. This situation can only be achieved by adopting a human-centered design approach.

According to Özgen (2018), recovery means spiritual, physical, and social well-being. Healing spaces can aid medical treatments, speed recovery, and prevent diseases. The significance of spaces that promote relaxation, peace, and spiritual satisfaction for healing was recognized early on. Mental health treatments and physical health treatments were also developed (Sungur Ergenoğlu and Aytuğ, 2007).

According to Sungur Ergenoğlu and Aytuğ (2007), health buildings should prioritize high-quality environmental factors and spaces, easy accessibility, and human-centered design. Physical, economic, and managerial data alone are insufficient; the design process must also consider psycho-social criteria. According to Schweitzer et al. (2004), the current design of hospitals prioritizes technology over the psychological needs of patients, their relatives, and employees. This suggests that there may be room for improvement in how healthcare facilities are designed and managed. According to Özgen (2018), the problem of un-rehabilitated construction and mass spaces is due to the desire to respond quickly to demand. Architecture must consider human interaction with space. Otherwise, it becomes an unconscious bequeathal for future generations. Tuncer Gürkaş and Barkul (2012) argue that profit-oriented projects often overlook space's social and physical requirements. Ulrich (2000) suggests that including healing space factors in the design phase can reduce costs and increase potential benefits.

According to Güç (2013) and Sungur Ergenoğlu and Aytuğ (2007), architectural form affects the user's perception and creates different experiences in indoor spaces. A well-designed and functional building can offer social, psychological, and functional benefits, reducing stress and increasing work efficiency among health officials and staff. Healthcare buildings serve a diverse range of people with varying needs and sociocultural backgrounds. Well-designed visual environments can improve user experience, accelerate recovery, and increase employee productivity, and therapeutic environments contribute to healing (Olguntürk, 2015). According to Özgen's (2018) research, therapeutic environments significantly facilitate healing. According to Olguntürk (2015), improving the quality of non-clinical areas in healthcare buildings can reduce fear and negative emotions in patients, shorten

recovery times, and increase the performance and attendance of healthcare staff. Therefore, enhancing the physical and aesthetic quality of these spaces is important.

Healthcare buildings should be designed to allow socially emotional bonding to break negative associations in social memory. Government-owned health institutions with limited facilities create negative feelings of inadequacy and insecurity. The contribution of human and space interaction to healing should be examined in health buildings. (Özgen, 2018). Designing spaces that create a sense of belonging and emotional bonding helps prevent the desire to move away from health structures with negative connotations.

Sungur Ergenoğlu and Aytuğ (2007) state that health includes mental and physical well-being. Artworks are used in other countries to promote creativity and well-being. Ulrich (2003) highlights the positive impact of nature, music, art, and pets in reducing stress levels. Indoor and outdoor contact with nature can be beneficial for mental health. According to Schweitzer et al. (2004), incorporating areas for massage and acupuncture, communal spaces for health-enhancing activities like yoga and drumming, and indoor and outdoor walking areas can benefit health buildings. The integration of architecture as a complementary factor with healing capabilities can be observed over time.

To summarize, nature, music, artwork, color, texture, plants, aquarium, water, pet animals, etc., can contribute to health by reducing the stress experienced by patients with visual, auditory, and olfactory positive stimuli and distractions while they are in health structures, and by creating emotions such as relaxation, happiness, calming, confidence and healing.

Studies have been conducted abroad on standards, guidelines-based design, healing spaces, evidence-based design, healthcare facility gardens, biophilic design, humanistic architecture, therapeutic design benefits, future trends, and design recommendations. These academic works were typically based on field studies. Upon reviewing this literature, it becomes apparent that the design issues currently being considered in healthcare facilities are closely related to those discussed in the article. This literature underscores the need for healthcare buildings in Turkey to meet at least the minimum standards for design.

In Turkey, the issue of building suitability for healthcare services must be addressed, as patients' expectations for comfort and well-being are often left unmet. The focus of patients is understandably on their health conditions, and unfortunately, psychological and spatial comfort in primary healthcare buildings is not typically considered. This article evaluates the situation by surveying users and sharing Kayseri's results in Türkiye's context. Despite a lack of research on primary healthcare buildings in Turkey, the study highlights the importance of considering spatial quality, which is often overlooked due to economic conditions. Ultimately, the article discusses the unique design considerations of primary healthcare buildings, drawing on criteria from foreign sources that have recently gained attention.

3. Field Study: Kayseri

According to the Address Based Population Registration System, the population of Kayseri province is 1,434,357 (URL-4). This section discusses the health structures of three large and close districts (Kocasinan, Melikgazi, Talas) in Kayseri city center, which were selected as pilot regions for the study. The population distribution by settlement units is shown in the table below (Table 3).

Table 3. Kayseri district population table (URL-4)

NAME OF THE PROVINCE	POPULATION IN 2021
AKKIŞLA	5,804
BUNYAN	30,099
DEVELI	66,507
FELAHIYE	5,536
HACILAR	12,471
INCESU	28,755
KOCASINAN	**404,780**
MELİKGAZI	**589,852**
OZVATAN	3,800
PINARBAŞI	21,903
SARIOGLAN	13,777
SARIZ	9,321
TALAS	**168,783**
TOMARZA	21,630
YAHYALI	35,674
YEŞİLHİSAR	15,665
TOTAL	**1,434,357**

In the first stage of the study, the location, number, and distribution of family health centers in Kocasinan, Melikgazi, and Talas Municipalities are investigated. While Kocasinan Municipality has 24 FHCs (family health centers) (Figure 2) and 139 family medicine units, Melikgazi Municipality has 36 FHCs (Figure 3) and 180 family medicine units, and Talas Municipality has 11 FHCs (Figure 4) and 48 family medicine units (URL-7). In line with the data obtained from the Kayseri Provincial Health Directorate, the locations of the FHC buildings in Kocasinan, Melikgazi, and Talas districts are shown in the maps (Figures 2,3,4).

Figure 2. Kocasinan District Family Health Centers distribution map

Figure 3. Melikgazi District Family Health Centers distribution map

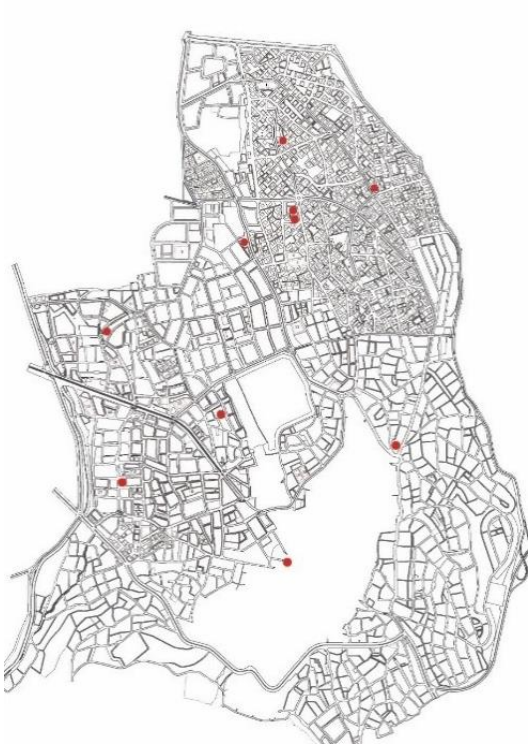
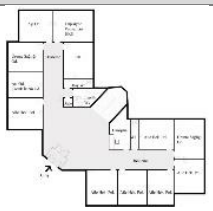
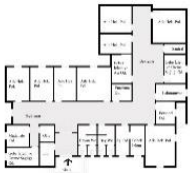


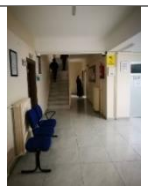
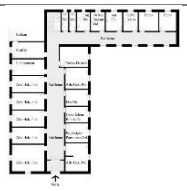
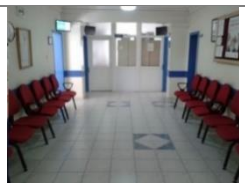
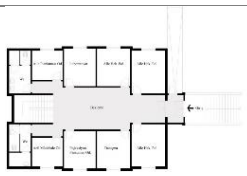
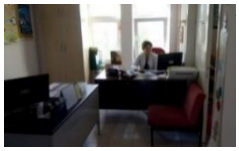
Figure 4**.** Talas District Family Health Centers distribution map

The field study was conducted in family health centers registered in Melikgazi, Talas, and Kocasinan Municipalities, the central districts of Kayseri province. Fifteen family health centers, five in each municipality, were investigated.

Bünyamin Somyürek FHC, Yıldırım Beyazıt FHC, Latif Başkal FHC, Osman Ulubaş FHC and Gökkent FHC under Melikgazi Municipality; Fatma Kirazlıgiller FHC, Servet Ziya Ustaoğlu FHC, Bahçelievler FHC, H. Ömer Aslaner FHC, and Reşadiye FHC; Fevzi Çakmak FHC, Cemal Bozkurt FHC, Nezaket Necati Şahin FHC, Medine FHC and Mithatpaşa FHC of Kocasinan Municipality were examined within the scope of this study (Table 4).

Table 4. Examples of three districts of Kayseri province (15 FHCs)

	FHC Name	Group:	Location	Photo (external)	Photo (indoor)	Ground Floor Plans
1	Bünyamin Somyürek	A	Melikgazi			
2	Yildirim Beyazit	A	Melikgazi			
3	Latif Başkal	A and C	Melikgazi			
4	Osman Ulubaş	A	Melikgazi			
5	Gökkent	A	Melikgazi			
6	Fatma Kirazligiller	A	Talas			
7	Servet Ziya Ustaoglu	A	Talas			

8	Bahcelievler	A	Talas			
9	Talas H. Omer Aslaner	A	Talas			
10	Resadiye	A	Talas			
11	Fevzi Çakmak	A	Kocasinan			
12	Cemal Bozkurt	A	Kocasinan			
13	Nezaket Necati Sahin	A	Kocasinan			
14	Medine	A	Kocasinan			
15	Mithatpasa	A	Kocasinan			

Physical features such as access to the building, access to the spaces inside the building, etc., included in the minimum design standards were analyzed with evaluation tables (information slips related to the criteria) for each primary health care building. The description of the criteria under the function heading in the evaluation of primary healthcare buildings is as follows.

Functional Characteristics: Access to the building within the minimum design standards, access to the spaces inside the building, etc. Each primary healthcare structure's physical characteristics were examined with evaluation tables (information slips on criteria). The explanation of the criteria under the function title in the evaluation of primary health care structures is as follows. Functional features: the entrance must be in a defined position and appropriately designed; a semi-open area/s a parking area, and the standards arrange it; the access to the structure is under the standards. The presence of a designed information area (is), the presence of a designed waiting area, the access to the spaces in the building is trouble-free, the vertical circulation elements (stairs, elevators, ramps) are entirely and correctly solved, they meet the function, at least one arrangement has been made for the landscape, the presence of a perceptible walkway for the visually impaired,

Entrance: A defined main entrance for easy detection by users; whether there is a draft shield to retain heat is questioned.

Semi-Open Area: Semi-open space includes a semi-open space designed holistically with closed areas and a semi-open space so that patients can get on and off comfortably at the entrance.

Park Area: Parking area: It was questioned whether there was enough parking space designed to meet the needs of staff and patients or whether there was enough parking space around it in terms of location.

Access to Building: Easy accessibility of the structure to all users with and without various disabilities, such as vision and walking, was questioned.

Information desk/area: It is examined whether an aesthetic and sufficiently sized consultation area welcomes the users at the entrance.

Waiting area: The waiting area, which is of sufficient size, allows single or multiple seating, and where the physical needs of the patient and his relatives are considered, were questioned.

Access to Spaces: The accessibility of all users with or without various disabilities, such as vision and walking, was questioned to all related spaces.

Circulation elements: Circulation elements such as ramps, stairs, and elevators in appropriate slopes and sizes for all users, including disabled people, have been considered, and it has been questioned whether users can use these circulation elements without assistance.

Landscape: For users and staff, the arrangement of green space, vegetative arrangement, seating areas, and the presence of trees are questioned.

Access for the visually impaired: Visually impaired: For visually impaired users, coatings, surfaces, and textures are among the criteria examined.

Measures (Explanations of measurements):

Building Scales: It is questioned whether the space, structure, and proportions are designed on a human scale with perceptibility by its users.

Scale: Suitable for human scale, without many floors

Space dimensions: It is questioned whether the physical dimensions of the space are sufficient and the space heights are min. 270 cm.

Psychological Needs:

Natural light: It has been examined whether all spaces, including waiting areas, receive enough natural light.

Material: Surface materials should be suitable for their location, hygienic, and cleanable, and the floor material should be non-slip, as little as possible.

Positive stimuli: The use of visual, auditory, and olfactory positive stimuli such as water, art objects, and color as part of the design is one of the criteria examined.

Recovery message: Whether the building gives the patients a message of trust, well-being, and recovery is questioned. Functional, dimensional, and psychological features

Landscape: The waiting area and other spaces, if any, are examined to determine whether they have a visual relationship with the outdoor space if there is no orientation to the landscape.

In line with the design criteria of the health structures examined above, the features that should be in the family health center structures are scale, entrance, semi-open space, parking area, therapeutic garden, access to the structure, consultation, waiting area, access to spaces, circulation elements, natural light, landscape, space dimensions, visually impaired, material, positive stimulus, healing message.

Table 5. Evaluation table of primary health care buildings examined in the Kayseri Province Field Study.

FHC	MUNICIPALITY	Scale	Introduction	Semi-Open Area	Park Area	Access to Building	Consultation	Waiting area	Access to Venues	Circulation elements	Natural light	Landscape	Space dimensions	Visually impaired	Material	Positive stimulus	Message of recovery
1 Bünyamin Somyürek	M	+	+		+		+				+						
2 Yıldırım Beyazıt	M	+	+		+		+										
3 Latif Başkal	M	+	+														
4 Osman Ulubaş	M	+	+		+					+			+				
5 Gökkent	M	+		+		+	+				+		+				
6 Fatma Kirazligiller	T	+	+		+					+	+	+	+				
7 Servet Ziya Ustaoglu	T	+	+							+	+	+	+				
8 Bahcelievler	T	+	+		+	+					+	+	+	+			
9 H. Ömer Aslaner	T	+	+				+										
10 Resadiye	T	+	+							+	+		+				
11 Fevzi Çakmak	K	+	+				+				+		+				
12 Cemal Bozkurt	K	+	+		+						+		+				
13 Nezaket Necati Sahin	K	+	+				+						+				
14 Medine	K	+	+		+					+			+				
15 Mithatpasa	K				+						+		+				

M: Melikgazi, K: Kocasinan, T: Talas

The table (Table 5) shows the evaluation criteria of the 15 family health centers in the field study. Criteria observed as positive are marked as "**+**". A common assessment is made below, taking into account all family health centers in the field study.

Almost half of the family health center buildings examined do not have sufficient parking space. It was determined that most FHC entrances do not have a counseling area to welcome patients and their relatives. It is concluded that the waiting areas are inadequate because they do not allow single or multiple sitting in the corridors, and the physical needs of patients and their relatives are not considered. Since the minimum design standards and inspections focus only on the required architectural space sizes, it is generally considered that the space sizes are sufficient.

Inadequate ceiling height after the works are completed is common in old projects constructed in the past years. Even if the spaces generally receive sufficient natural light, it was observed that the waiting areas, where patients and users spend most of their time, are deprived of natural light. It is seen that the windows are mostly at the level of spaces opened to receive light; there is no concern for the view, and the spaces are far from interaction with the outdoors. It is observed that materials with hygienic properties are suitable for healthy structures and spaces, and materials with as few joints as possible are not selected.

Furthermore, it was determined that most two-story buildings do not have elevators, no solutions are produced for the elderly and disabled people, and the slope of the existing ramps is unsuitable.

Regardless of the physical condition of the people, it was determined that the approach to the building, access to the building, and easy and safe access to the spaces without the need for someone else have not been sufficiently considered. Only in Bahçelievler FHC is sensible floor material used considering the approach and circulation of visually impaired patients.

It was determined that there is no holistic semi-open space and open space design in the mass design together with the closed areas, and there is no semi-open space where patients can get on and off at the entrance. It is seen that even the FHCs with green areas are not organized for socializing, waiting, or resting and are closed for use. It was observed that visual, auditory, or olfactory positive stimuli such as water, art objects, and color, which help to create psychologically supportive emotions such as relaxation, happiness, calmness, confidence, and healing, are not used in any of the buildings examined as part of the design.

As a result of the spatial evaluations, it was revealed that most of the primary healthcare buildings in Kayseri, which were examined within the scope of the study, cannot meet the minimum physical conditions or can only meet them.

3.1. Survey Study

3.1.1. Type of Research

The architectural projects of family health centers in Melikgazi, Talas, and Kocasinan central districts of Kayseri province were accessed and investigated by on-site observation according to the evaluation criteria created in the light of theoretical knowledge. The present study used a descriptive research model to understand and determine the current situation.

3.1.2. Population and Sample of the Study

Within the scope of the study, user satisfaction was questioned through survey questions directed to users who have experienced at least two of the different primary care buildings in Kayseri, which are generally produced with type projects and have similar physical conditions. The study population consisted of individuals living in Kayseri, aged 18 years and over, and receiving health services from family health centers. The individuals who participated in the study were selected by using the convenience sampling method, which is one of the non-random sampling methods. The sample group in the study was selected among the individuals living in Melikgazi, Kocasinan, and Talas, the central districts of Kayseri, and the study was completed with 288 participants.

3.1.3. Data Collection Tools

First, a literature review on primary healthcare buildings and health building design was conducted to create the questionnaire. The questionnaire was then developed based on the topics covered in the review, and the resulting limitations were compiled into the FHC (Family Health Center) scale. The questions were divided into four sections: Demographic Characteristics (4 questions), Perception of the Building (8 questions), Access, Transportation, and Interior Arrangement of the Building (19 questions), and Common Areas and Outdoor Arrangement (9 questions). Three faculty members and a statistical expert were asked to evaluate the question pool and provide feedback. Based on their input, we finalized the scale consisting of four sections and 40 items. A 3-point rating system was used to obtain the experts' opinions. They were asked to rate each item as "appropriate," "partially appropriate," or "not appropriate." All the expert forms were combined, and we determined how many experts approved each possible option for each item.

In the study, data were collected by face-to-face survey method. The questionnaire form used in data collection consists of a preliminary information letter addressed to the respondent and two sections. In the first part, questions about the gender, age, and educational status of the participants were included. In the second part, there are eight questions on 'Statements on the Perception of the Building', 19 on 'Statements on Access, Transportation and Indoor Arrangement of the Structure', and nine on 'Statements on Common Areas and Outdoor Arrangement'. The researchers created questions about the measurement tools by reviewing the relevant literature. Questions were selected from the question pool in line with expert opinions. The measurement tools were scored on a five-point Likert scale from one to five, with 1=strongly disagree, 2=disagree, 3=no opinion, 4=agree, and 5=strongly agree. The Cronbach's alpha reliability coefficients of the measurement tools were determined as 0.895 for the 'Statements on the Perception of the Building', 0.899 for the 'Statements on Access, Transportation and Indoor Arrangement of the Structure', and 0.819 for the 'Statements on Common Areas and Outdoor Arrangement' and were determined to be highly reliable.

3.1.4. Data Analysis

SPSS 21.0 package statistical program was used to analyze the data collected in the study. The analyses first evaluated whether the data conformed to the normal distribution. After determining the conformity of the data to the normal distribution, unrelated sample t-tests and one-way ANOVA tests were applied. Besides, arithmetic mean, standard deviation, mean, kurtosis, and skewness values were analyzed. Pearson correlation analysis was performed to determine the relationship between the measurement tools.

4. Findings and Discussion

Table 6. Descriptive data of individuals using primary healthcare structures

	Number (n)	Percentage (%)
Gender		
Female	177	61.5
Male	111	38.5
Age		
18-30	125	43.4
31-40	77	26.7
41-60	65	22.6
61-80	21	7.3
Education status		
Primary School	28	9.7
Middle School	17	5.9
High School	43	14.9
Bachelor's degree	163	56.6
Master's Degree	37	12.8
The district where the Family Health Center is located		
Kocasinan	84	29.2
Melikgazi	128	44.4
Talas	76	26.4
TOTAL	287	100.0

It was determined that 61.5% of the study participants were female, and 38.5% were male. It was determined that 43.4% of the participants were between 18-30, and 56.6% had bachelor's degrees. When the distribution of the individuals according to the districts where the Family Health Centers were located was examined, it was observed that 44.4% were in Melikgazi, 29.2% in Kocasinan and 26.4% in Talas (Table 6).

Table 7. Data on the perception of health structure, indoor and outdoor spaces of individuals using primary health care buildings

	Number (n)	Percentage (%)
The Feeling that the Structure Creates in the Individual		
Curiosity	34	11,8
Fear and anxiety	71	24,7
Spaciousness	68	23,6
Trust	55	19,1
Other	60	20,8
The Idea Formed by the Structure in the Individual		
Legible	73	25,3
Mysterious	29	10,1
Hospitable	75	26,0
Inviting	17	5,9
Repulsive	94	32,6
TOTAL	**288**	**100.0**

The data on the perception of the health structure indoor and outdoor spaces of individuals using primary health care buildings were analyzed. Individuals stated that they mostly experience 'fear and anxiety (24.7%) when they walk around the health structure. It was determined that the least emotion they feel is 'curiosity' (11.8%). When they look at the building from the outside, the idea they have about the inside is mostly 'repulsive' (32.6%) and the least 'inviting' (5.9%) (Table 7).

Table 8. Total mean scores of measurement tools

	Min±Max	X ±SD	Cronbach's Alpha (α)
Statements on the Perception of the Structure	8-40	2.67±0.75	0.895
Statements on Access, Transportation, and Indoor Arrangement of the Structure	19-91	2.80±0.65	0.899
Statements on Common Areas and Outdoor Arrangements	9-45	3.27±0.90	0.819

X̄: mean; SD: Standard Deviation

When the total mean scores of the measurement tools are examined, it is seen that the mean scores of the 'Statements on the Perception of the Building' were 2.67±0.75, 'Statements on Access, Transportation and Indoor Arrangement of the Structure' were 2.80±0.65 and 'Statements on Common Areas and Outdoor Arrangement' were 3.27±0.90. The measurement tools' Cronbach's alpha reliability coefficients were 0.895, 0.899, and 0.819, respectively, and were highly reliable (Table 8).

There was a high and positive correlation between the statements related to the perception of the building and the statements related to access, transportation, and indoor Arrangement of the Structure ($r=0.755$; $p<0.01$). There was a high level and positive relationship between the statements regarding the perception of the building and the statements regarding the common areas and outdoor arrangement ($r=0.654$; $p<0.01$). There was a high level and positive relationship between the statements about access, transportation, and indoor arrangement of the structure and the statements about common areas and outdoor arrangement ($r=0.752$; $p<0.01$) (Cohen, 1988).

Table 9. Distribution of Total Mean Scores of the Statements on the Perception of the Structure according to the Descriptive Characteristics of the Individuals

	X̄±SD	Test	p
Gender			
Female	2.760±0.74	t=2.491	p=0.815
Male	2.536±0.74		
Age			
18-30	2.787±0.840		
31-40	2.656±0.682	**F=2.431****	**p=0.005*****
41-60	2.480±0.638		
61-80	2.279±0.649		
Education status			
Primary School	2.281±0.533		
Middle School	2.375±0.421		
High School	2.459±0.687	**F=5.478****	**p<0.001*****
Bachelor's degree	2.826±0.754		
Master's Degree	2.684±0.878		
The district where the Family Health Center is located			
Kocasinan	2.711±0.709		
Melikgazi	2.659±0.757	F=0.148	p=0.863
Talas	2.656±0.792		

X̄: mean; SD: Standard Deviation, * t-test, ** one-way ANOVA, *** p<0.05

The distribution of the total mean scores of the statements related to the perception of the structure according to the descriptive characteristics of the individuals is given in Table 9. It was determined that the difference between the mean total scores of the participants' age and education levels regarding the perception of the structure was significant (p<0.05). According to the post-hoc analysis, it was determined that the mean total score of women regarding the perception of the structure was higher than that of men. At the same time, it was determined that as the age increased, the total mean scores of the statements about the perception of the structure decreased. It was observed that the difference between the mean total scores of the statements regarding the perception of the structure and the distribution according to gender and the districts where the family centers were located was not statistically significant (p>0.05).

Table 10. Distribution of Total Score Averages of the Statements on Access, Transportation and Indoor Arrangement of the Structure According to the Descriptive Characteristics of the Individuals

	X̄±SD	Test	p
Gender			
Female	2.900±0.665	t=3.282	p=0.219
Male	2.643±0.617		
Age			
18-30	2.856±0.746		
31-40	2.763±0.579	F=0.831	p=0.478
41-60	2.761±0.596		
61-80	2.801±0.658		
Education status			
Primary School	2.550±0.475		
Middle School	2.752±0.590		
High School	2.695±0.684	F=2.003	p=0.094
Bachelor's degree	2.883±0.675		
Master's Degree	2.771±0.659		
The district where the Family Health Center is located			
Kocasinan	2.900±0.639		
Melikgazi	2.807±0.631	F=2.275	p=0.105
Talas	2.680±0.801		

X̄: mean; SD: Standard Deviation, * t-test, ** one-way ANOVA, *** p<0.05

The distribution of the mean total scores of the statements related to access, transportation, and indoor arrangement of the structure according to the descriptive characteristics of the individuals is given in Table 10. It was observed that the difference between the participants' gender, age, education level, and distribution according to the districts where the family centers were located and the mean total scores of the statements regarding the access, transportation, and indoor arrangement of the structure was not statistically significant (p>0.05).

Table 11. Distribution of Total Score Averages of Statements on Common Areas and Outdoor Arrangement According to Descriptive Characteristics of Individuals

	X̄±SD	Test	p
Gender			
Female	2.900±0.665	t=3.282	p=0.219
Male	2.643±0.615		
Age			
18-30	2.865±0.066		
31-40	2.763±0.664	F=0.831	p=0.478
41-60	2.761±0.596		
61-80	2.671±0.537		
Education status			
Primary School	2.550±0.475		
Middle School	2.752±0.590		
High School	2.695±0.684	F=2.003	p=0.094
Bachelor's degree	2.883±0.675		
Master's Degree	2.771±0.659		
The district where the Family Health Center is located			
Kocasinan	2.900±0.639		
Melikgazi	2.807±0.631	F=2.275	p=0.105
Talas	2.680±0.709		

X̄: mean; SD: Standard Deviation, * t-test, ** one-way ANOVA, *** p<0.05

The distribution of the mean total scores of the statements related to common areas and outdoor space arrangement according to the descriptive characteristics of the individuals is given in Table 11. It was determined that the difference between the participants' gender, age, education level, and distribution according to the districts where the family centers were located and the mean total scores of the statements related to common areas and the outdoor arrangement were not statistically significant (p>0.05).

Participants' Evaluations on the Perception of the Building: Participants were asked two questions about their perception of the building, and then their perceptions were measured with the help of eight statements. Among the individuals, 24.7% stated that they feel a sense of fear and anxiety when they walk around the building, 23.7% stated that they feel a sense of spaciousness, and 19.2% stated that they feel a sense of trust. In response to the question about how the building gives an idea of the indoor when viewed from the outside, 32.6% of the respondents answered repulsive, 26% hospitable, and 25.3% answered legible.

Participants' Evaluations on Access, Transportation, and Indoor Arrangement of the Structure: When the evaluations of the participants regarding the access, transportation, and indoor arrangement of the family health centers are examined, it is seen that the statements that the respondents most agree with are, respectively, having easy access to the building by car with an average of 4.160, having sufficient ceiling height with an average of 3.899, providing easy access for people with disabilities and parents with strollers with an average of 3.740, positioning related rooms close to each other with an average of 3.691, adequacy of lighting provided by window openings with an average of 3.569, and ensuring staff and patient privacy with an average of 3.559.

It was observed that most participants did not have the same opinion regarding the access, transportation, and indoor arrangement of the family health centers. When the statements are analyzed, it is seen that the statement with the lowest mean value was the statement that there are places in the building where people feel at home, with a mean value of 2.132, followed by the statements of finding the areas inside the building attractive with a mean value of 2.420, the placement of rooms and areas in the building according to the view with a mean value of 2.514, and the comfort and relaxation of the indoor spaces with a mean value of 2.516. In the remaining statements in the table, it can be said that the rates of those who agree and those who disagree with these statements are very close.

Participants' Evaluations of Common Areas and Outdoor Arrangement: When the evaluations of individuals regarding the common areas and outdoor arrangements of family health centers are examined, it is understood that in five statements, the rates of those who agree and those who disagree were close to each other. In the remaining three statements, the majority of the respondents disagreed with these statements. The statements where the rates of agreement and disagreement were close to each other were having sufficient and comfortable information areas, the size of common areas such as waiting areas, the design of the building entrance to protect from weather conditions, the sufficient amount of seating areas, the ability of disabled people to move around easily in waiting and circulation areas, and the needs in and around the waiting areas are considered. On the other hand, it is understood that the majority of the respondents think that places such as playgrounds for children are not considered in the waiting areas, the garden and open areas are not comfortable and inviting, and the garden and open areas are not organized for sitting, waiting, etc.

When the results of the survey study are analyzed, it is seen that the majority of the respondents (56.6%) were university graduates, while the other part (44.4%) was in the 18-30 age group. Considering the statements with the highest percentages, when the evaluations are analyzed in general, the users feel fear and anxiety when they walk around the building and find it repulsive when they look at the building from the outside. The majority of the respondents think that the entrance of the building is easily perceived, the building is designed on a human scale, and it is understood that the building is a health structure. However, it does not have an aesthetic value.

According to the evaluations regarding access, transportation, and indoor arrangement, it is understood that users think that the building is easily accessible by car, the ceiling height is sufficient, easy access is provided for people with disabilities and parents with strollers, the related rooms are located close to each other, the lighting is sufficient and staff-patient privacy is provided. On the other hand, they had the opinion that there are no places where they feel comfortable and relaxed like at home, the indoor spaces do not have aesthetic value, and there is no layout according to the view.

It is understood that the respondents were of the opinion that the common areas and outdoor spaces are not organized for sitting, waiting, etc., there is no playground for children in the waiting areas, the garden and outdoor areas are not comfortable and inviting, and the garden and outdoor areas are not organized for sitting, waiting, etc. It can be said that the rates of those who agreed and those who disagreed with the remaining statements were very close.

Although both women and men expressed negative opinions regarding the statement that the external appearance of the building is attractive, it is understood that the severity of negativity was stronger in women than in men. As the age of the individuals increases, it is easily understood that the building is perceived as a health structure. In general, although the rate of those who agreed and disagreed with the statement that the building gives a message of well-being and healing is very close to each other, the rate of agreement with this statement increased as the average age increased. Although the

majority of the participants think that the building is unattractive and unaesthetic, the degree of negativity decreased with increasing age.

Generally, it is understood that the rate of those who agreed and disagreed with the statement that the building gives a message of well-being-recovery, it is in harmony with its surroundings, and the elements such as color and texture are used correctly in the building were approximately the same. Moreover, the agreement rate of respondents with no education, primary school graduates, and high school graduates was higher than that of those with other education levels. In the general evaluation, although a negative result has emerged in response to the statement that the building is aesthetic and attractive, it can be said that respondents with no education or primary school graduates disagree with this generalization and find the buildings aesthetic and attractive.

It is seen that the rate of those who agreed and disagreed was very close to each other. It is observed that the statements on access, transportation, and indoor arrangement of the structure that there are differences in color, texture, and material to find place and direction on the facade, there are enough toilets, noise is prevented in the spaces, the selected materials are suitable for use, building ventilation (heating/cooling) and the size of the spaces are sufficient were mainly agreed positively by those with no education and primary school graduates. Even if the respondents have the opinion that there are no comfortable and cozy spaces that make them feel at home, the indoor spaces are not aesthetic. There is no settlement according to the view; it is understood that the severity of the negativity decreased among those with no education and primary school graduates or that the rates of those who agreed and disagreed were close to each other. Although all users, regardless of their educational level, expressed a positive opinion on the statement that the ceiling height is sufficient, it was determined that the severity of agreement was stronger in those who had postgraduate degrees.

The rate of users who think positively and those who think negatively were the same for the statements that there is an adequate and comfortable information area, the size of common areas such as waiting areas is adequate, seating areas are sufficient, the needs in and around the waiting areas have been considered, and disabled people can move around comfortably in the waiting and circulation areas. However, those without education and primary school graduates agreed positively with these statements. It is seen that the users disagreed with the statements that these places, such as playgrounds for children, are considered in the waiting area, the garden and open areas are arranged for sitting, waiting, etc., and the garden and open areas are comfortable and inviting. At the same time, the negative opinion decreased in those with no education or primary school graduates.

From the answers given by the participants about the structures they use, it was determined that only the physical situation is taken into consideration, the psychological and social needs of the users are ignored, and economic and stereotypical solutions are offered. It is understood that the spaces do not have the effect of giving a healing message to the users or making them happy. In summary, it was concluded that space quality and comfort are insufficient. Since most of these small-scale health structures are derived from typical projects, it is understood that they are produced as structures that have no relation to the context.

CONCLUSION AND SUGGESTIONS:

Even though a health problem may seem to concern the individual at first glance, its impact is more significant than it seems, as it primarily concerns the immediate environment and society with the social and economic disruptions it creates. In Turkey, we can say that when the level of health is improved by giving the necessary importance to health and the health spaces, which have an undeniable contribution to healing, this will increase the productivity of human capital. Thus, economic growth will be positively affected. As a guide for future family health center designs, the current

shortcomings were identified due to the literature research, the examined examples, and the field research, and suggestions were made regarding the design of such buildings. The shortcomings seen in the design and implementation phase of family health centers are as follows;

Many family health centers are built using standard designs that are not tailored to the specific context of the location. These generic designs are often chosen for quick implementation, but they do not foster a sense of community and may not meet patients' social and physical needs.

There needs to be coordination between institutions during the design and implementation phase of health centers, which results in insufficient consideration of social and physical needs and a lack of proper financing for quality buildings. Minimum physical requirements are typically the focus during design, with architectural design criteria being reduced solely to the minimum space size. As a result, healthcare buildings are often designed with a purely functional approach, neglecting patients' psychological and social needs.

Economic considerations often prevent healthcare buildings from being designed to provide optimal healing environments. Despite research showing the impact of the physical environment on patient health, healthcare buildings have moved away from the purpose of serving human beings over time.

A patient-oriented design approach is needed to prioritize patients' physical and psychological needs. However, healthcare buildings are often associated with negative emotions such as fear, anxiety, and stress, and little attention is given to creating spaces that promote healing, calmness, and reassurance. Healthcare buildings are generally viewed regarding functional efficiency, costs, and physical functions, with little regard for patients' psychological and social needs.

The findings and results of the study show that primary healthcare buildings in Turkey barely meet even the minimum standards. Apart from economic concerns, the design of health buildings and the way they are constructed need to be changed/improved. It is thought that current themes, such as sustainability, healing spaces, etc., should be included in the designs. The issues that foreign literature and examples focus on (evidence-based design, healing spaces, etc.) should also be considered for primary care buildings in Turkey. In this sense, increasing the number of academic studies on primary and other healthcare buildings seems necessary.

Suggestions for the better quality of the family health center structures examined in this article; Architects should collaborate more closely with the health sector to create innovative design solutions. Public institutions should prioritize holistic design and take the time necessary to create healing spaces. Health buildings should be located in places that allow for social engagement and interaction. Mental and experiential practices should be considered alongside physical needs in healthcare design. Family health centers should be equipped to maintain quality of life. Open and semi-open spaces should be included in the design process. Accessibility should be ensured for all users, including those with disabilities. Nature's healing power should be utilized through visual and physical contact with outdoor arrangements and green indoor courtyards.

Family health centers should adopt a design approach that considers children's physical, social, and psychological needs. Entrance areas should be designed with a good environment and welcoming approach for patients and their families. Sound insulation and noise control are crucial in healthcare buildings to avoid negative emotions and contribute positively to healing. Flexible spaces suitable for multiple uses should be added to family health centers to reduce emotional and physical stress and support health protection and healing. The psychological effects of healthcare-building environments on users should be considered and designed to be psychologically supportive. A guide should be

prepared for the minimum physical conditions of family health centers, and an accreditation system can be established to improve service quality and provide a safe and healing environment.

There are serious problems regarding the design approach and implementation in healthcare buildings today. In general, only the minimum standards are met. It aims to meet the minimum requirements by providing ramps that are often unsuitable and only for the disabled and path-defining tactile flooring for the visually impaired. Employers, designers, and society should be made aware of the importance of making design decisions that are equally accessible for everyone, where healthy and disabled disadvantaged individuals can be together, beyond just buildings that comply with regulations, standards, and legal impositions. It is thought that health structures that are thought from every angle, have healing spaces, are designed by adopting a patient-oriented approach, and are of interest to the whole society; buildings that can be used for a long time have the feature of increasing the welfare level of the society due to their contribution to health, and more economical in the long term than typical projects will be obtained.

Even though emphasis has been placed on creating healing spaces over time, research and practices in this field are insufficient. This changing positive approach is expected to be reflected in small-scale health structures such as family health centers, which are the first point of application for patients. Designers have the opportunity to contribute to this field, which will have a significant impact on health.

Information Note

This article is based on the master's thesis completed in 2020 at Erciyes University, Graduate School of Natural and Applied Sciences, Department of Architecture. For the article originating from the master's thesis, field research and different data analyses were conducted again.

Ethical Aspects of the Research

The article complies with national and international research and publication ethics. Ethics Committee approval was obtained with the decision of Erciyes University Social and Human Sciences Ethics Committee dated 28.03.2023 and numbered 2023/82. Moreover, informed and voluntary consent was obtained from the volunteers included in the study, and ethical principles were followed at every stage.

Author Contribution and Conflict of Interest Disclosure Information

1st Author 65%, 2nd Author 35% contributed. No conflict of interest exists between the authors or any third-party individuals or institutions.

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