

# Patient satisfaction with health care services in Turkiye: A glimpse from nationwide Ministry of Health database

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## ABSTRACT

**OBJECTIVE:** Patient satisfaction refers to the degree to which patients' expectations from health care services are met and is a critical indicator used to measure the overall quality of this service. This study aims to analyze overall patient satisfaction and regarding factors in our country, providing valuable insights for policymakers, clinicians, and researchers who aim to improve the quality of health care services and patient outcomes. Furthermore, as a nationwide assessment, this study reveals the potential of big data analytics in health services.

**METHODS:** Integrated e-Pulse and Health Statistics and Causal Analysis (SINA) systems were used to gather satisfaction scores given by patients after any health care service obtained for overall health care service, physician, personnel other than physician, sanitization (from 0 to 100). The data were processed and analyzed using libraries Pandas and NumPy in the Python programming language.

**RESULTS:** A total of 37.674.978 scores were given by a total of 11.421.857 patients regarding health care service they obtained involving ratings of 207.339 physicians, between the years of 2016 and 2023. Mean health care rating was 80.4 over 100, mean physician rating was 82, mean rating for personnel other than physicians was 78.4 and mean rating for sanitization was 77.7. When the top 15 most scored facilities were investigated, overall point was highest for Family Medicine centers (94.62) and lowest for Women's Health and Pediatric Diseases hospitals. When rate of 100 points given for each clinic after an admission was investigated, it was lowest for emergency medicine, pediatric emergency medicine, dentistry, endodontia, dermatology and pandemic clinics, and highest for oncology, radiation oncology and family medicine clinics. Waiting time to admission and length of hospital stay seemed to be important factors for patient satisfaction.

**CONCLUSION:** This is the largest study regarding patient satisfaction in Turkiye and was conducted by the foremost health care provider, the Ministry of Health. This limited data may provide implications to be assessed to keep the positive trend in our country in patient satisfaction and future analyses evaluating infinite potential factors to hasten the progress of health care in our country.

*Keywords: Factors; health care; patient satisfaction; Turkiye.*

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The quality and effectiveness of health care services have been gaining increasing importance, and within this framework, patient satisfaction has come to the forefront.

Patient satisfaction refers to the degree to which patients' expectations from health care services are met and is a critical indicator used to measure the overall quality of this service.



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World Health Organization (WHO) suggests that the quality of care is an important factor to maintain favorable health outcomes [1]. As aforementioned, patient satisfaction reflects the overall quality, and it has been reported that ability to access and communicate with health care professionals, to be shown respect, personalized care, quality of the health care environment, length of hospital stays and to be able to recover are factors affecting patients' opinion regarding health care, while delays in admission negate patients' opinions [2–5].

Measuring patient satisfaction is vital for health care providers to evaluate and improve the quality of their services. In addition, patient satisfaction affects the patients' adherence to the treatment process, their health-related behaviors, and the overall use of services. Patient satisfaction fosters a more patient-centered approach in health care services. This can improve both the quality of service and patient outcomes. Understanding how satisfied patients are with health care services allows for a better understanding of patients' needs, expectations, and experiences. Accordingly, it is also a point of care in our country's health care providers to assess patient satisfaction.

This study aims to analyze overall patient satisfaction and regarding factors in our country, providing valuable insights for policymakers, clinicians, and researchers who aim to improve the quality of health care services and patient outcomes. Furthermore, as a nationwide assessment, this study reveals the potential of big data analytics in health services. Moreover, this study will help us better understand how health care services are delivered and how we can increase patient satisfaction.

## MATERIALS AND METHODS

In our country, patients can score each health care service they obtained via e-Pulse system from 0 to 100, and even comment regarding their concerns. e-Pulse is a platform developed by the Ministry of Health in Türkiye, allowing individuals to store and manage their health information digitally [6].

An additional system, the Health Statistics and Causal Analysis (SINA), is a domestically developed decision support system platform owned by the Ministry of Health that receives real-time data from all health care institutions. It is designed to manage institutional resources more effectively and increase the decision-making competency of both central and provincial organization users. With these features, SINA enables detailed reporting of health statistics submitted to the Ministry of Health from

### Highlight key points

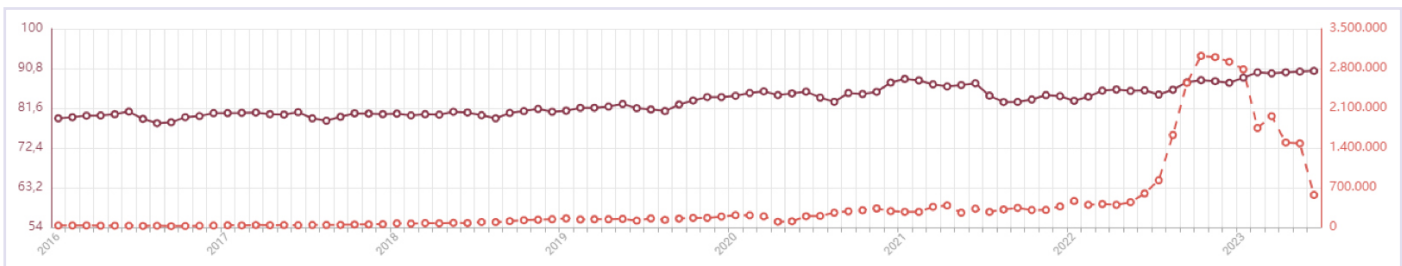
- Overall patient satisfaction was 80.4, satisfaction from physician was 82, from personnel other than physician was 78.4 and from sanitization was 77.7 in Türkiye.
- Waiting time for admission and length of hospital stay seemed to impact patient satisfaction.
- Private clinics, family medicine clinics and medical school hospitals seemed to be top three types of facilities with highest satisfaction.

**TABLE 1.** Means of overall patient satisfaction score according to the type of health care facilities (Top 15 most graded)

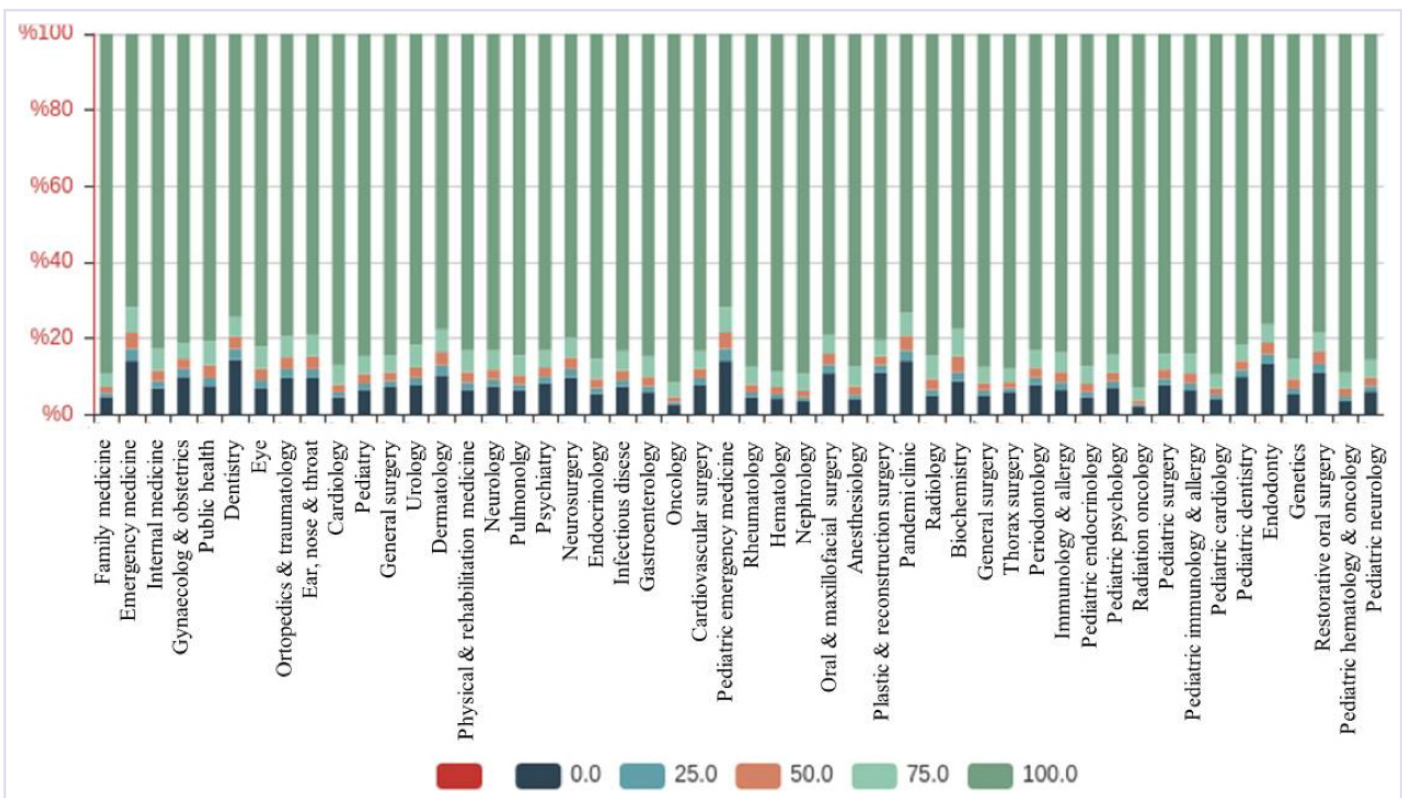
|   |       |
|---|-------|
| Family medicine centre  | 91.62 |
| Training and research hospital                                  | 83.43 |
| Government hospital   | 81.75 |
| Private hospital  | 87.77 |
| Government university health applications and research hospital | 86.66 |
| Dental health centre  | 80.12 |
| Private medical centre  | 87.15 |
| Foundation university school of medicine hospital               | 90.11 |
| Dental health hospital  | 78.88 |
| School of dentistry hospital                                    | 84.95 |
| Integrated district hospital                                    | 84.25 |
| Private polyclinic  | 91.44 |
| Women's health and pediatric diseases hospital                  | 77.07 |
| Occupational disease hospitals                                  | 85.1  |

health care providers. Both e-Pulse and SINA are integrated with each other, enabling access to patient satisfaction data upon authorization by the Ministry of Health.

The study was conducted retrospectively and cross-sectionally. Data for this study was obtained through SINA system. Scores were given by patients for overall satisfaction regarding health care service in general, physicians, personnel other than physicians and sanitization. During the data collection process, personal information was protected, and the principle of privacy was fully respected. Ethical approval was waived due to the retrospective nature of the study and study was conducted with permission of Ministry of Health numbered 95741342-020. The data were processed and analyzed using libraries Pandas and NumPy in the Python programming language. Categorical were presented in percentages and continuous variables in means.



**FIGURE 1.** Changes in overall patient satisfaction points and number of scorings between years 2016–2023. x-axis: years, y-axis 1: overall points, y-axis 2: number of scorings, upper line: overall points, lower line number of scorings.



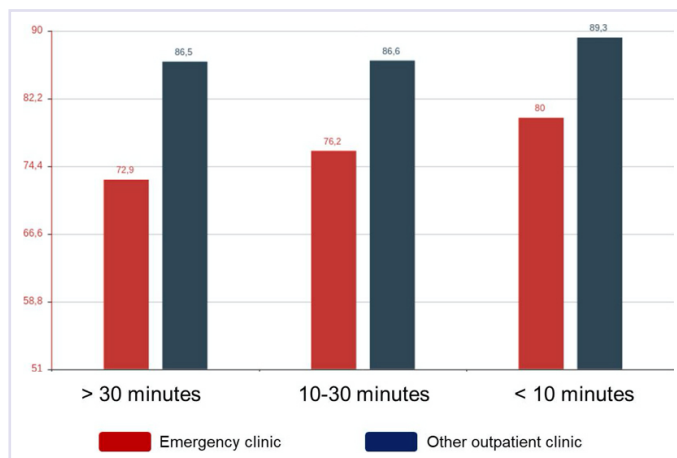
**FIGURE 2.** Rate of 100, 75, 25, 0-point scores among different clinics. x-axis: type of the clinic, y-axis: percentage for scorings.

## RESULTS

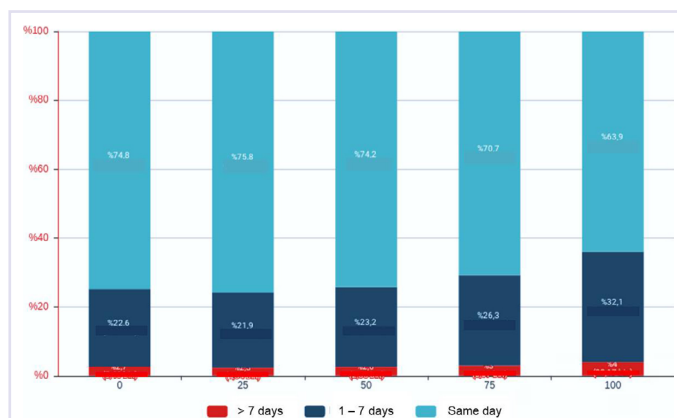
A total of 37,674,978 scores were given by a total of 11,421,857 patients regarding health care service they obtained involving ratings of 207,339 physicians, between the years of 2016 and 2023. Mean health care rating was 80.4 over 100, mean physician rating was 82, mean rating for personnel other than physicians was 78.4 and mean rating for sanitization was 77.7. Overall health care service points seemed to be improved through years as well as an increase in number of scores given, which peaked between 2022 and 2023 (Fig. 1).

Over 40 different types of health care facilities are present in our country. When the top 15 most scored facilities were investigated, overall point was highest for family medicine centers (94.62), followed by private polyclinics (91.44), medical school hospitals (90.11) and private hospitals (87.77). Overall patient satisfaction scores were lowest for Women’s Health and Pediatric Diseases hospitals (77.07) (Table 1).

Rate of 100 points given for each clinic after an admission was investigated (Fig. 2). It was lowest for emergency medicine, pediatric emergency medicine, dentistry, endodontia, dermatology and pandemic clinics, and highest for oncology, radiation oncology and family medicine clinics.



**FIGURE 3.** Overall points according to waiting time to admission in emergency department and other outpatient clinics. x-axis: waiting time, y-axis: overall score for patient satisfaction.



**FIGURE 4.** Rate of 100, 75, 25, 0-point scores according to length of hospital stay. x-axis: scores for overall satisfaction, y-axis: percentage for length of hospital stay.

Waiting time for admission seemed to be an important factor both in emergency department and outpatient clinics since as waiting time increased, patient satisfaction deteriorated (Fig. 3). When length of hospital stay was evaluated, rate of 100-point grading was highest for hospital stays over 7 days and lowest for same-day discharges (Fig. 4).

## DISCUSSION

This study conducted by Ministry of Health provided insights regarding patient satisfaction comprising nationwide assessments from over 11 million individuals. Overall score of patient satisfaction was 80.4, satisfaction from physician was 82, from personnel other than phy-

sician was 78.4 and from sanitization was 77.7. Waiting time for admission and length of hospital stay seemed to impact patient satisfaction. Private clinics, family medicine clinics and medical school hospitals seemed to be top three types of facilities with highest satisfaction. Emergency medicine and dentistry clinics had lowest satisfaction rates.

Patient satisfaction is an important parameter to assess overall quality of medical care indirectly reflecting opinions about aspects like communication and accessibility of health care professionals, to be shown respect, personalized care, quality of the health care environment, length of hospital stays and time to admission opinion [2–5]. In a study evaluating overall patient satisfaction in 30 countries, Turkiye was reported to be in top 10 countries following Netherlands, Denmark, Sweden, Norway, Czechia, United Kingdom, Japan, and Croatia and listed over countries like France, United States, Germany and Italia [7]. Our study reported the own data of Ministry of Health, the major health care provider in our country, for the first time. Overall satisfaction was improved through years as observed in Figure 1 and number of individuals who gave feedback spiked during the pandemic period implying concerns regarding quality of health care increased among society during this period. As the pandemic fell off the public agenda, the interest may have been gradually diminished in 2023 and 2024.

The type of health care facility admitted is an important factor regarding satisfaction. Tengilimoglu et al. [8] reported that private health facilities had higher patient satisfaction. A similar trend was observed in our results, implying that personalized care, time spent with physician, less-crowdedness, less waiting time, and effective communication may be important factors for satisfaction. Likewise, it had been demonstrated that communication, accessibility via telephone and quick services for urgent health problems were top three most important factors for increased patient satisfaction [9]. Whereas inability of competing with emotional problems, long waiting time, absence of urgent symptom relief and not being involved in the treatment decision process were observed to be most important factors for decreased patient satisfaction [9]. Among government facilities it was observed that Training and Research Hospitals and Government University Health Applications and Research Hospitals provided better satisfaction than ordinary state hospitals. These facilities are generally larger and more organized. Accordingly, it had previously been reported from our country that large and efficient centers had better patient satisfaction [10].

Our results demonstrated that emergency department had lowest patient satisfaction. These departments mostly admit patients who are in pain, mainly with acute, severe, and possibly mortal conditions; therefore, both patients and relatives are more agitated and demanding. Furthermore, lengthy waiting times contribute to dissatisfaction [11]. On the contrary, family medicine clinics had the highest satisfaction, possibly due to these centers encounter mild conditions and being used for prescription of chronic medications. It had already been reported that family medicine model in Türkiye was significantly related to increased patient satisfaction [12]. Dentistry clinics were also observed to have low satisfaction rates. A study from our country demonstrated most common complaints were long treatment spans, disorganization, and delays in radiographic examination procedures [13]. Oncology clinics also had better satisfaction. It can be assumed that being a cancer patient may lower expectations of patients and relatives.

Delay in admission is a well-known factor deteriorating patient satisfaction, similar to our results. Interestingly, our results demonstrated that number of fully satisfied patients increases as the time of hospital stay lengthens. Reducing length of hospital stay is a policy for most health care providers; however, our results suggest it may not always overlap with patient expectations. Several studies reported no significant relation between patient satisfaction and length of hospital stay alone but other factors may affect in-patient experience [14–16]. Further studies would elucidate this issue better.

There are several limitations of the study. Firstly, while this study represents a significant proportion of patients in the country, it does not account for all individuals who received health care services during the examined period. Some patients may not have access to or familiarity with the e-Pulse system to provide their feedback, which may have led to underrepresentation of certain demographic groups, such as older adults, rural residents, patients from different geographical areas of Türkiye or those with lower digital literacy levels. Secondly, the study relies on subjective patient ratings, which can be influenced by numerous factors outside the scope of the health care services provided, such as personal beliefs, mood at the time of scoring, and sociocultural context. It is also important to note that satisfaction scores can be influenced by patient expectations, which might vary considerably among different patient groups. Thirdly, while the e-Pulse system allows for numeric scoring, it doesn't offer a standardized tool or questionnaire to assess various

dimensions of patient satisfaction. Therefore, the study lacks the ability to examine more detailed aspects of satisfaction, like quality of communication, explanation of treatment, or perceived competence of medical staff. Lastly, the study presents aggregate scores over the examined period, which could potentially mask temporal variations in patient satisfaction. For instance, scores could be influenced by specific events such as policy changes, public health crises (e.g., pandemics), or changes in societal attitudes towards health care.

Despite these limitations, this study provides valuable insights into patient satisfaction in Türkiye and highlights the need for ongoing efforts to improve health care services from the patient's perspective. However, as this is a retrospective study, exact causality may not be fully established between the variables and patient satisfaction. Factors like waiting time, length of hospital stay, type of health care facility, and specialty can influence patient satisfaction, but they do not necessarily cause changes in satisfaction. Future studies should consider specifically investigating effects of patient demographics, utilize standardized assessment tools for patient satisfaction, and examine the impact of specific events or policy changes on patient satisfaction.

## Conclusion

All in all, this is the largest study regarding patient satisfaction in Türkiye and was conducted by the foremost health care provider, the Ministry of Health. This data may provide implications to be assessed to keep the positive trend in our country in patient satisfaction and future analyses evaluating infinite potential factors to hasten the progress of health care in our country.

**Ethics Committee Approval:** This study was conducted with permission from Republic of Türkiye Ministry of Health (date: 27.11.2019, number: 95741342-020).

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