



## E-Complaining in Health Services: A Research on *sikayetvar.com* Shares of Patients Related to the Radiology Department in Turkey

### Sağlık Hizmetlerinde E-Şikâyet: Türkiye'de Radyoloji Bölümü ile İlgili Hastaların *sikayetvar.com* Paylaşımları Üzerine Bir Araştırma

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#### Abstract

**Aim** The aim of this study is to examine the complaints made on the internet site complaint about radiology services in Turkey. The study also aims to determine a general profile of individuals who complain about their dissatisfaction with the radiology department to the competent authorities and to systematically examine the reasons for their complaints.

**Material and Method** In this retrospective study, complaints made to the *sikayetvar.com* website were examined using the content analysis method, which is a qualitative research method. The last 110 complaints about the radiology department in Turkey, made on the internet to *sikayetvar.com* between July 2023 and August 2023, were included in the evaluation. 34 of these complaints were excluded from the study because they were sent to the wrong department, were insurance-related, and were unclear. Our study was conducted through the analysis of the remaining 76 complaints. Complaints made; They are classified according to gender, type of radiological procedure, results of the radiological procedure, whether it is a public or private hospital, whether they are inpatients, outpatients or emergency patients, satisfaction levels of the patients, number of views of the complaint and the subject of the complaint.

**Results** The data obtained were obtained from Reader et al. (15) was analyzed by adopting a deductive approach with the text analysis method, which is one of the content analysis types, in line with the patient complaint taxonomy. It was determined that 51 (67.1%) of 76 complaints about radiology services were made by women and 25 (32.9%) by men. It was found that magnetic resonance (MRI) (27.1%), conventional radiology (24.3%) and computed tomography (20.0%) received significantly more complaints than all other radiological procedures. It was determined that the most complaints were about Management (97.37%) and Communication (98.68%) (Clinical 21.05%). Quality (97.37%), security (15.79%), timing and access (86.84%), and communication (98.68%) comprised almost all of the complaint categories. Delays (88.16%), communication breakdown (93.42%), quality of care (15.79%) and staff attitude (88.16%) were included in almost all complaint subcategories. No complaints were made regarding diagnostic errors or treatment.

**Conclusion** It is thought that the obtained results can guide healthcare business managers in effective complaint management and help improve patient satisfaction. Knowing the sources of patient dissatisfaction with radiology services can help reduce the number of patient complaints and improve patient care.

**Keywords** E-complaint, health services, patient satisfaction, radiology

#### Özet

**Amaç** Bu çalışmanın amacı Türkiye'de radyoloji hizmetleri ile ilgili internette şikâyetvar.com sitesine yapılan şikâyetlerin incelenmesidir. Çalışmada ayrıca radyoloji bölümü ile ilgili memnuniyetsizliklerini yetkili mercilere şikâyet eden bireylerin genel bir profilini belirlemek ve şikâyet nedenlerini sistematik olarak incelemektir.

**Gereç ve Yöntem** Bu retrospektif çalışmada, şikâyetvar.com sitesine yapılan şikâyetler nitel araştırma yöntemi olan içerik analiz yöntemi ile incelenmiştir. Değerlendirmeye, Temmuz 2023-Ağustos 2023 tarihleri arasında Türkiye'de radyoloji bölümü ile ilgili internette şikâyetvar.com sitesine yapılan son 110 şikâyet alınmıştır. Bu şikâyetlerden 34'ü yanlış bölüme olması, sigorta ile ilgili olması, belirsiz olması nedeniyle çalışma dışı bırakılmıştır. Çalışmamız kalan 76 şikâyetin analizi üzerinden yapıldı. Yapılan şikâyetler; cinsiyete, radyolojik işlemin türüne, radyolojik işlemin sonuçlarına, kamu ya da özel hastane olmasına, yatan, ayakta veya acil hasta olmalarına, hastaların memnuniyet düzeylerine, şikâyetin görüldüğü sayılara ve şikâyet konularına göre sınıflandırılmıştır.

**Bulgular** Elde edilen veriler Reader vd. (15) tarafından geliştirilen hasta şikâyet taksonomisi doğrultusunda içerik analizi türlerinden metin çözümleme yöntemi ile tümden gelişsel bir yaklaşım benimsenerek analiz edilmiştir. Radyoloji hizmetleri ile ilgili 76 şikâyetin 51'i (%67,1) kadınlara ve 25'i (%32,9) erkekler tarafından yapıldığı saptanmıştır. Manyetik rezonans (MR) (%27,1), konvansiyonel radyoloji (%24,3) ve bilgisayarlı tomografinin (%20,0) diğer tüm radyolojik işlemlere göre anlamlı derecede daha fazla şikâyet aldığı saptandı. En çok şikâyet konusunun Yönetim (%97,37) ve İletişim (%98,68) temasında olduğu belirlenmiştir (Klinik %21,05). Şikâyet kategorilerinin neredeyse tamamını kalite (%97,37), güvenlik (%15,79), zamanlama ve erişim (%86,84) ve iletişim (%98,68) oluşturdular. Gecikmeler (%88,16), iletişim kesintisi (%93,42), bakım kalitesi (%15,79) ve personelin tutumu (%88,16) neredeyse tüm şikâyet alt kategorilerinde yer almaktaydı. Tüm hataları ile tedavi ile ilgili herhangi bir şikâyette bulunulmamıştır.

**Sonuç** Erişilen sonuçların etkili bir şikâyet yönetimi hususunda sağlık işletmesi yöneticilerine rehberlik edilebileceği ve hasta tatminini iyileştirmeye yardımcı olabileceği düşünülmektedir. Radyoloji hizmetlerinde hasta memnuniyetsizliğinin kaynaklarının bilinmesi, hasta şikâyetlerinin sayısının azaltılmasına ve hasta bakımının iyileştirilmesine yardımcı olabilir.

**Anahtar Kelimeler** E-şikâyet, sağlık hizmetleri, hasta memnuniyeti, radyoloji

## INTRODUCTION

Unlike other service sectors, the health services sector is one of the most highly competitive sectors, where intense competition is experienced, which requires a high level of orchestration of different professional groups with a high level of specialization, where full-time service is provided, which cannot be consumed/stored as soon as it is produced,<sup>1</sup> which has no substitutes and makes its severity felt more unless it is met. It has a very sophisticated and complicated structure where even a simple mistake can cost human life.<sup>2</sup>

With the advancement of technology, the internet has become a part of consumers' daily lives. According to a study, more than half of the world's population (over 4 billion) uses the internet. There are 54.3 million internet users in Turkey.<sup>3</sup> Online internet use in health services is increasing day by day. In Turkey, 718 million people applied to healthcare providers in 2017.<sup>4</sup> It is understood that each person goes to hospital approximately three times a year. According to the Ministry of Health data, the number of busy healthcare providers is 1669.<sup>5</sup> The heterogeneity of healthcare, a labor-intensive sector, is extreme. In this respect, the probability of service disruptions is higher. Service disruptions are one of the leading determinants of customer dissatisfaction.<sup>6</sup> Complaints may arise due to service errors or consumers not being aware of their rights. According to patient rights, which is one of the fundamental human rights, patients; benefiting from health services, being informed and requesting information, choosing and changing the health institution and its personnel, protecting privacy, refusing or terminating the treatment received, ensuring security, fulfilling religious obligations, receiving the respect required by human values, being made comfortable, having visits and companions, making complaints. and has the right to sue.<sup>7</sup>

Complaints arise when the consumer's demands are not met due to mistakes made by institutions during service delivery. According to Lovelock and Wright (2002), a

complaint is a formal expression of dissatisfaction with the experience or any aspect of the service.<sup>8</sup> Complaint is the written or verbal expression of dissatisfaction resulting from non-fulfillment of needs, wishes and expectations.<sup>9</sup> Complaints may be related to mental, physical and emotional state.<sup>10</sup> In Turkey, a telephone reporting line was opened by the Ministry of Health in 1997 to receive complaints from patients, and the Ministry of Health Communication Center (SABİM) started its investigations on January 1, 2004, with the aim of delivering the complaints systematically. The Ministry of Health Communication Center (SABİM) offered the opportunity for participation to the parties related to the sector and thus made "interactive management" possible.<sup>11</sup>

In the globalizing world, along with the technological developments, individuals' value judgments regarding the concept of health have also changed. Especially with the rapid development of new media tools, individuals whose level of consciousness and awareness has increased and who do not refrain from questioning, try to convey their complaints not only to the institution but also to the people in their online environment and share their bad experiences with other consumers. This process has also led to the emergence of complaint sites that serve as a means for people with complaints to convey their complaints to the relevant institution. The main functions of complaint-related e-forums are to help consumers who have complaints against institutions convey their complaints to institutions on the virtual platform, to attract the attention of institutions for the solution of problems and to announce their negative experiences to other individuals.<sup>2</sup> The complexity of health services causes many complaints. Issues such as informing patients, staff-patient interaction, staff behavior, sense of trust, nutrition services, service quality, physical and environmental conditions, bureaucracy, fees, length of hospital stay and waiting times are stated as the most frequently complained issues by patients and their relatives. Patient satisfaction is an important indicator reflecting the quality of health care.<sup>12</sup> The importance of assessing

patient dissatisfaction has been recognized as an essential component of patient-centered radiology practice, a concept in which healthcare professionals in the radiology department collaborate with patients and their families to identify and meet patients' needs and preferences.<sup>13</sup> There are not enough studies in the literature on the frequency and causes of patients' complaints about the services of the radiology department. In their study by Salazar et al. (2013), they reported that the general incidence of unwanted written complaints per radiological procedure was 2.38 per 100,000 and that most of these complaints (60.1%) resulted from the failure to provide patient-centered care.<sup>14</sup> The aim of this study is to examine the complaints made on the internet site "sikayetvar.com" about radiology services in Turkey. The study also aims to determine a general profile of individuals who complain about their dissatisfaction with the radiology department to the competent authorities and to systematically examine the reasons for their complaints.

#### MATERIALS and METHODS

In this retrospective study, the complaints made to the website sikayetvar.com about radiology services were examined with the content analysis method, which is a qualitative research method. In the evaluation, the last 76 complaints made to the internet site sikayetvar.com about radiology services between July 2023 and August 2023 were included in the sampling. It was assumed that the individuals who made the complaint in the study were over the age of 18. Because when registering on the websites, it is required to confirm that you are 18 years old and over. Complaints made; gender of the patient, type of radiological procedure (ultrasonography, CT, MR or interventional radiology), results of the radiological procedure, whether it is a public or private hospital, hospital status of the patient (inpatient, outpatient or emergency room), satisfaction level of the patients, whether the complaint is directed only to the radiology department are classified according to the number of views of the complaint and the subject of the complaint.

The coding taxonomy for patient complaints uses these three areas: "clinic" (complaints about the safety and quality of clinical care), "management" (complaints about the management of the health institution), and "relationships" (complaints about health care personnel). The clinical domain was divided into "quality" and "safety" categories, the management domain into "institutional issues" and "timing/access" categories, and the relations domain into "communication", "humanity/interest" and "patient rights" categories.<sup>15</sup>

The study is limited to the complaints of 76 patients made to the sikayetvar.com website and it is assumed that the complaints are correct. Applications where the complaint was not related to a procedure performed in the radiology department, was related to insurance companies, or the complaint was unclear were not included for analysis in this study.

#### Statistical Evaluation

SPSS 24 statistical software package (Statistical Package for the Social Sciences – IBM®) was used in the analysis of the data collected in the study. In the study, descriptive statistics regarding the distribution of responses to independent variables were presented as numbers and percentages for categorical variables, and as mean, standard deviation and median for numerical variables. The compatibility of continuous variables with the assumption of normal distribution was evaluated with the Kolmogorov-Smirnow test. Chi-square test was used for categorical variables and One Way Anova test was used for quantitative variables in pairwise and multiple comparisons. Frequency of complaints by type of radiological procedure was compared using Chi-square test with Bonferroni correction. The results were evaluated with a 95% confidence interval,  $p < 0.05$  as significant.

#### RESULTS

In this part of the study, 76 complaints made to the sikayetvar.com website about radiology services between July

2023 and August 2023 were examined.

Table 1. Demographic and clinical characteristics of the individuals in the study	
Gender, N (%)	
Woman	51 (67.1%)
Male	25 (32.9%)
Hospital Type, N(%)	
Public	32 (42.1%)
Special	44 (57.9%)
Patient's hospital status, N(%)	
Inpatient	4 (2.6%)
Outpatient treatment	70 (92.1%)
emergency room	2 (2.6%)
Type of radiological procedure (n:70), N(%)	
CT	14(20.0%)
Interventional	4 (5.7%)
HSG	3 (4.3%)
Conventional	17 (24.3%)
MRI	19 (27.1%)
USG	13 (18.6%)
Radiological procedure only, N (%)	
Yes	49 (64.5%)
No	27 (35.5%)
Result, N(%)	
Yes	32 (42.1%)
No	44 (57.9%)
Answer, N(%)	
Yes	33 (43.3%)
No	43 (56.6%)
Other partition related (n:16), N(%)	
Emergency room	5 (31.3%)
Emergency/surgical	1 (6.3%)
Anesthesia	1 (6.3%)
Pediatrics	2 (12.5%)
General surgery	1 (6.3%)
Cardiovascular surgery	1 (6.3%)
Neurology	2 (12.5%)
Orthopedics	3 (18.8%)
Satisfaction level, N(%)	
1	59 (77.6%)
2	2 (2.6%)
3	15 (19.7%)
Display, Mean ±Std	1802.7±1612.4 (Min-Max: 90-11077)
N:number, %: percent, Mean: Mean, Std: Standard Deviation	

Individuals in the study; While 51 (67.1%) were female, 25 (32.9%) were male. While 32 (42.1%) of the hospitals complained about were public hospitals, 44 (57.9%) were private hospitals. While 4 (2.6%) of the complaining patients were inpatients, 70 (92.1%) were outpatients and 2 (2.6%) were emergency room patients. It was found that magnetic resonance (MRI) (27.1%), conventional radiology (24.3%) and computed tomography (20.0%) received significantly more complaints than all other radiological procedures (Figure 1.) 49 (64.5%) of the complaints were related only to radiological procedures. It was observed that 32 (42.1%) of the complaints received results and 33 (43.3%) received answers. Apart from radiology services, 5 (31.3%) of the other complaints were related to the emergency department, 1 (6.3%) was emergency/surgical, 1 (6.3%) was anesthesia, 2 (12.5%) were complaints. pediatrics, 1 (6.3%) in general surgery, 1 (6.3%) in cardiovascular surgery, 2 (12.5%) in neurology and 3 (18.8%) in orthopedics. was related. It was determined that the satisfaction level of 59 (77.6%) of the complaining individuals was "1", 2 (2.6%) had a satisfaction level of "2" and 15 (19.7%) had a satisfaction level of "3" (Table 1).

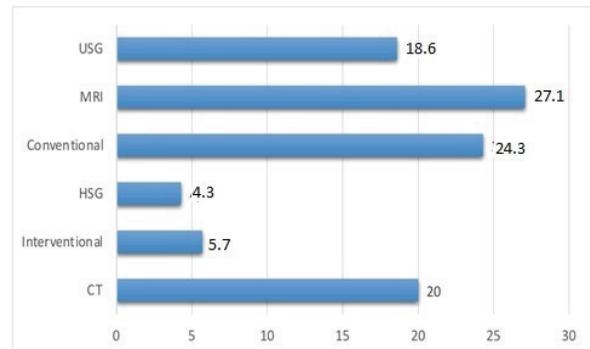


Figure 1. Types of radiological procedures complained about

	CT	Interventional	HSG	Conventional	MRI	USG
CT	-	p=0.023a	p=0.004a	p=0.724	p=0.586	p=0.852
Interventional			p=1.000	p=0.014 a	p=0.008a	p=0.022a
HSG				p=0.003a	P<0.001a	p=0.038a
Conventional					p=0.456a	p=0.327a
MRI						p=0.607a

aCalculated with z-test for proportions and post hoc Bonferroni correction

All cross-sectional imaging modalities (CT, MR, and ultrasonography) also had significantly more complaints than conventional and infrared radiography ( $p < 0.001$ ). The frequency of other complaints did not differ significantly from each other ( $p > 0.05$ ) (Table 2).

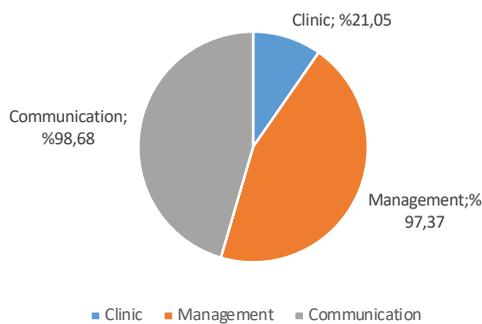


Figure 2. Distribution of complaints by domain names (%)

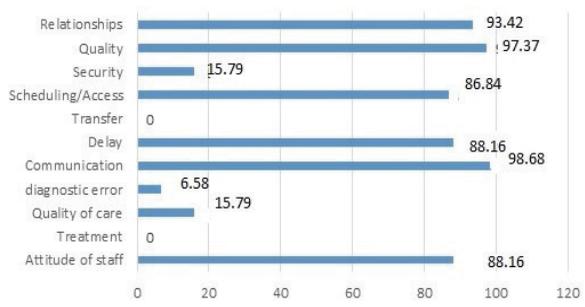


Figure 3. Distribution of complaints by categories (%)

It shows the distribution of complaints among different areas, categories and subcategories according to Reader et al.'s taxonomy of patient complaints (15). 16 (21.05%) of the complaints belonged to the clinic, 74 (97.37%) to

the management, and 75 (98.68%) to the communication field (Figure 2). Quality (97.37%), security (15.79%), timing and access (86.84%), and communication (98.68%) comprised almost all of the complaint categories. Delays (88.16%), communication breakdown (93.42%), quality of care (15.79%) and staff attitude (88.16%) were included in almost all complaint subcategories. No complaints were made regarding diagnostic errors or treatment (Figure 3).

## DISCUSSION

In the study, 76 complaints about radiology services made to the sikayetvar.com website were examined and a general profile of the individuals who complained about their dissatisfaction with the radiology department was determined and the reasons for the complaints were systematically evaluated. There are not enough studies in the literature on the frequency and causes of patients' complaints about the services of the radiology department. Therefore, our study is an original study.

As a result of our study, it was observed that the most complaints were made by female patients (67.1%). In a study by Alosaimi et al. (2018), which is similar to our study in the literature, in which they evaluated 672 complaints in the sample of Saudi Arabia, it was concluded that the highest number of complaints were made by women with 63% .16 Unlike our study, Hoşgör and Cengiz (2020) examined the general profile of individuals complaining about health services and the reasons for their complaints, and analyzed 15452 complainants and 16489 complaints in the study conducted by Hoşgör and Cengiz (2020). In their study,

they reported that the individuals who made the highest number of complaints were male patients aged 41 and over, who graduated from high school.<sup>17</sup> As a different perspective, Durduran et al. (2012); Based on the 2010 data of the Turkish Statistical Institute, they emphasize that although women in Turkey experience more health problems, it is generally men who apply to the patient rights unit because of their status as the person/head of the household, which is attributed to men in the traditional Turkish family structure.<sup>18</sup>

It was assumed that the individuals who made the complaint in our study were over the age of 18. Because when registering on the websites, it is required to confirm that you are 18 years old and over. In a study conducted by Webb (1995), it was determined that elderly patients applied for complaints twice as much as younger patients.<sup>19</sup> Similarly, in the study conducted by Lim et al. (1998) on complaints from the Family Medicine Services in Singapore, it was revealed that individuals in the 20-59 age group reported higher complaints than those in the 10-19 age group.<sup>20</sup> According to Önal and Civaner (2015), it has been interpreted that individuals' awareness of defending their rights increases with advancing age.<sup>21</sup> In addition, the fact that elderly patients feel less afraid that they will not be able to receive service due to their complaints from public health institutions can be seen as a reason for this situation.

As a result of our study, 75 (98.68%) of the applications that constitute the most common complaint of individuals related to radiology services are communication-related, followed by management (97.37%) problems, and the least complaint is clinical (21.05%) was found to originate. In our study, quality (97.37%), security (15.79%), timing and access (86.84%), and communication (98.68%) comprised almost all of the complaint categories. Delays (88.16%), communication breakdown (93.42%), quality of care (15.79%) and staff attitude (88.16%) were included in almost all complaint subcategories. No complaints

were made regarding diagnostic errors or treatment. It can be said that the findings of our study and the results of Mattarozzi et al. (2017) are similar (Management: 68.1%; Relationships: 52.8%; Clinic: 36.8%).<sup>22</sup> Unlike the results of this study, in the study by Chaulk et al. (2019) in which 87 patient complaints were examined using the same taxonomy, the main theme of the most important complaint was; It was found to be Clinical (66%), Relationships (60%) and Management (31%).<sup>23</sup> Similarly, in Salazar et al.'s (2018) study, the most important reason for complaints was from the Clinic (52%), Management (24%) and the General Profile of Individuals Complaining about Health Services and Reasons for Complaints were Relationships (24%), while the complaints in the main theme were equally high,<sup>24</sup> In Harrison et al.'s (2016) study, it was determined that this order was Clinical (68%), Management (19%) and Relationships (13%).<sup>25</sup> The results obtained in this study show that the users of the service related to the radiology department in Turkey suffer from the problems related to the relations between the management of the health enterprises in the radiology department and the service provider, rather than the directly health-related issues, and that there is a more intensive improvement especially in these areas by the professional health administrators. and/or revisions need to be made.

In our study, it was also observed that patients complained about cross-sectional imaging methods (CT, MR, and ultrasonography) significantly more than in interventional radiology and conventional radiology ( $p < 0.001$ ). The frequency of other complaints did not differ significantly from each other. Generally, while cross-sectional imaging methods are obtained, the planning, shooting and interpretation of the shots are more time-consuming and complex than traditional radiographic images. For this reason, disruptions experienced in standard care practices may be perceived negatively by patients. In a study by Ollivier et al.<sup>26</sup> they found that the majority of patients (73%) experienced distressing while undergoing MRI and CT scans, both because of the fear and anxiety felt due to

the scanning procedures themselves and the fear of what the results would be. These patient- and screening-related negative factors could potentially lower patients' threshold for reporting.

This study had some limitations. The study is limited to the complaints of 76 patients made to the [sikayetvar.com](http://sikayetvar.com) website between July 2023 and August 2023 and it is assumed that the complaints are true. The fact that a specific complaint taxonomy is not used in most of the studies makes it difficult to reach a complete unity of definition regarding the reasons for complaints, and this may lead to subjectivity when classifying the reasons for complaints. Applications where the complaint was not related to a procedure performed in the radiology department or it was unclear whether this was the case were not included for analysis in this study.

### CONCLUSION

This research was conducted by examining complaints regarding online radiology services offered in Turkey to [www.sikayetvar.com](http://www.sikayetvar.com).

Under the main theme of Management, the most complaint applications are for Institutional Problems and Timing and Access issues, respectively; Under the main theme of Relationships, Patient Rights, Humanity/Care and Communication issues; It was concluded that under the main theme of the clinic, it belongs to the issues of Quality and Patient Safety.

The most frequently reported complaint reasons in terms of subcategories are, in order: service problems, environment, access and patient admission, delays, privacy, respect, dignity and consideration, bureaucracy/red tape, incorrect/insufficient information, finance and billing, staff behavior, patient safety cases, treatment, communication defects, quality of care, It was concluded that there are discrimination, staff employment and other resources, skills and professional suitability, diagnostic errors, exami-

nation, informed consent, abuse, patient-staff dialogue, referrals, discharge, medication errors and patient guidance/monitoring.

Regarding the service problems related to the main theme of management; It may be suggested that professional health managers with undergraduate or postgraduate degrees in health management should be given more space in the management levels of hospitals. Regarding the environment/environment issue, it may be suggested that more emphasis should be given to hotel management services, especially in public and university hospitals, just like most private healthcare enterprises. For example, it may be possible to spend more effort on such points that are thought to positively affect the satisfaction levels of service recipients, such as the quality of the meals served, the comfort of the waiting and accommodation areas, the general cleanliness and hygiene of the institution, the optimization of the physical infrastructure capacity and the general atmosphere/ambiance of the hospital. Regarding access and patient admission issues; The development of national health policies or the revision of existing policies that will increase the physical and economic accessibility of services and improve registration-patient admission and appointment problems may be brought to the agenda. Regarding the solution of the problems of respect-dignity-caring, staff behavior, patient privacy and information related to the main theme of relationships; It may be beneficial to focus on cultural activities that can contribute to the improvement of the knowledge and awareness levels of all other health and non-health personnel, especially physicians and nurses, such as general communication, health communication, patient-oriented service provision, patient rights and values education. In this context, physicians; It is extremely critical that they do not ignore that they are trying to cure the patient, not the disease, and that they are sensitive individuals who expect to be respected, cared for, their privacy guaranteed, to be able to participate freely in treatment decisions, and to be adequately and accurately informed about their disease/general health con-

dition.

Regarding the solution of problems related to patient safety cases, treatment problems and quality of care related to the main theme of the clinic; Performing root-cause analysis, especially in determining what lies at the root of surgical complications, performing calibration and service maintenance of medical devices and equipment at certain and regular periods, recording undesirable situations that threaten patient safety and affecting the success/outcome of treatment, determining the factors affecting the success/outcome of treatment, institutions, health It may be recommended to clarify whether it is caused by staff or patients, to comply with standard clinical care plans in order to improve the quality of care, and finally, not to disrupt total quality management training.

It is thought that the results obtained in the study can guide healthcare business managers in effective complaint management and help improve patient satisfaction. Knowing the sources of patient dissatisfaction with radiology services can help reduce the number of patient complaints and improve patient care. More personalized contact between radiologists and patients may reduce the frequency of complaints, but this requires further research. Additionally, complaints regarding healthcare services associated with the radiology department in different countries can be compared. The results of this research can be shared and used in health education to gain insight into what patient complaints may be. The gap in the literature regarding malpractice in both radiology services and general health services can be filled. Additionally, studies can be carried out on methods on how complaints will be compensated.

#### **Ethical Approval**

Research involving information freely available in public domain- would not require ethics review.

#### **Peer-review**

Externally and internally peer-reviewed.

#### **Authorship Contributions**

Concept: F.M., A.Ş., Design: F.M., A.Ş., Data collection or Processing: F.M., A.Ş., Analysis or interpretation: F.M., A.Ş., Literature Search: F.M., A.Ş., Writing: F.M., A.Ş.

#### **Conflict of Interest**

The authors declare that they have no conflict of interest.

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