SCIE DOI: 10.14744/scie.2024.63549
South. Clin. Ist. Euras. 2024;35(4):371-377

Original Article

Evaluation of Radiation Safety Knowledge and Radiation Protection Awareness of Physicians Working in Surgical Units

Nilsu Çini,[1] Şule Karabulut Gül,[1] Recep Demirhan[2]

[1]Department of Radiation Oncology, Kartal Dr Lütfi Kırdar City Hospital, Istanbul, Türkiye
[2]Department of Chest Surgery, Kartal Dr Lütfi Kırdar City Hospital, Istanbul, Türkiye

Submitted: 25.09.2024
Revised: 13.11.2024
Accepted: 14.11.2024

Correspondence: Nilsu Çini, Kartal Dr Lütfi Kırdar City Hospital, Istanbul, Türkiye
E-mail: nilsucini@gmail.com

Keywords: Fluoroscopy; radiation awareness; radiation protection; radiation safety; surgical units.

ABSTRACT

Objective: The use of radiation in medical diagnosis and surgical procedures is increasing with developing technology. During these routine interventions and procedures, physicians' decision-making through radiation safety awareness and application of radiation protection knowledge daily will protect themselves, their team, and patients from unnecessary radiation exposure and the negative effects of radiation. We aim to determine awareness and knowledge levels.

Methods: Our research was based on evaluating answers to the questionnaire applied to physicians working in the Surgical Units of the hospital. The questionnaire consists of 3 parts. The 1st part of the research questionnaire consisted of 7 questions aimed to collect general information about the physicians participating in the study. The 2nd part of the research questionnaire consisted of 13 questions aimed at analyzing the use of acquired radiation protection awareness in daily practice in the outpatient clinic and operation room. The 3rd part of the research questionnaire consisted of 12 questions aimed to analyze the basic radiation safety and radiation protection knowledge.

Results: A total of 172 physicians from surgical units participated in this questionnaire, 96 of them were assistants. In the analysis of 2nd part radiation protection awareness questions, an awareness level of 50% or more was observed in 10 answers. In the analysis of 3rd part general radiation safety and radiation protection knowledge questions, a correct answer level of 50% and more was observed in 6 answers.

Conclusion: Radiation protection awareness is teamwork as well as an individual effort. The results of this questionnaire we conducted within our hospital clearly emphasized that our hospital's chief physician, clinic chiefs, and all physicians in surgical units have high awareness of radiation safety. Knowledge about radiation protection has created optimum working conditions in outpatient clinics and operation rooms.

INTRODUCTION

In addition to the radiation sources that naturally exist around us, the radiation produced from artificial (man-made) radioactive sources through developing technology has been integrated into many areas of our daily lives. X-rays and γ (gamma) rays, used in medicine for diagnosis and treatment, are electromagnetic wave types of radiation emitted from artificial radioactive sources.[1]

The amount of ionizing radiation dose received from medical interventions is considered as the majority of radiation dose received from artificial sources in the general population exposure.[2] Ionizing radiation is used in a variety of medical procedures, including angiography, fluoroscopy, computed tomography (CT), and radiographic imaging.[3]

Ionizing radiation has adverse biological effects on living organisms that may vary depending on the type of radiation, absorbed dose, and duration of exposure, which is the dose rate.[4,5] The biological effects of ionizing radiation vary depending on the type of radiation and the magnitude of its energy. Sievert is the unit of equivalent radiation dose, effective dose. For example, a standard chest X-ray (CXR) corresponds to approximately 0.02 mSv of effective radiation.[1]

One Sv is the amount of radiation necessary to produce the same effect on living organisms as 1 Gray (Gy) of high-penetration X-rays. Quantities that are measured in Sv represent the biological effects of ionizing radiation.[6] When comparing a chest CT scan and a standard CXR, despite both techniques irradiating the lungs, the effective dose from CT can be several hundred times that of a CXR, depending on the CT protocol technique. While the effective dose for standard CXR is 0.02 mSv, effective dose values ranging from 5.1 mSv[7] to 10–40 mSv[8] for lung CT have been reported in different studies.[9]

Considering these exposures, it is recommended that patients should be informed about the risks of radiation exposure while being informed about the necessity and benefits of diagnostic and interventional procedures.[9] The radiation risk of 1 mSv is not equal for a 10-year-old child, a 25-year-old adult, or a 70-year-old adult. Also, that biological risk is not the same for a man or a woman.[10]

Follow-up and investigation of a patient's radiological procedure history will be beneficial for individual patient radiation protection, as it can provide clinical information that will not require another radiological examination for that patient. Avoiding unnecessary repetition of medical imaging involving radiation exposure achieves a 100% dose reduction, even if the dose from the previous imaging is not taken into account.[11] Patient dose tracking is a concept created within the International Atomic Energy Agency (IAEA) and led to the implementation of the IAEA's Smart Card project.[12-14] Many different European countries have implemented this monitoring system, and experiences from Finland are presented documenting the impact of individual patient monitoring in strengthening justification and optimization processes.[11,15]

In light of this information, physicians have a great duty and responsibility to protect people from radiation exposure resulting from medical practices. Three basic elements defined as radiation protection principles by the International Committee on Radiation Protection (ICRP)—Justification, Optimization (As Low As Reasonably Achievable-ALARA), and Dose Limitations—must be taken into consideration in clinical management.[16]

The importance of physician awareness in radiation protection and radiation safety is also evident during the management of the fluoroscopic imaging process in the operating room. We can categorize the principles of fluoroscopy protection for teams working in the operating room under four headings: distance and position (distance 'D'), duration (exposure 'E'), use of barrier (barrier 'B'), and technical features of the device (technique 'T').[17]

In operating rooms, the distance rule is the easiest to comply with and the most effective method of protection from radiation, as radiation decreases inversely proportional to the square of the distance. To minimize the number of scattered photons, the fluoroscopy device should be positioned appropriately and the operating room team should stand on the correct side of the fluoroscopy. The X-ray tube must be under the table. When taking a lateral image, the team should be positioned on the opposite side of the X-ray tube. By increasing the distance between the X-ray tube and the patient, both the patient's dose and the team's exposure dose will decrease.[17]

The duration of radiation exposure is directly proportional to the amount of radiation to be received. Therefore, in preoperative planning, determining the location of fluoroscopy inside the operation room, marking the area to be shot on the patient's body if possible, and mastering the actual medical images of the patient, as well as keeping the last image on the screen or recording the previous images by using the technological features of the fluoroscopic device, will prevent the repetition of shooting during the case.[17]

Additionally, all shielding equipment and barriers must be available in the operating room and must be worn whenever fluoroscopy is used. This equipment prevents radiation exposure at different rates depending on the regions where they are used. Lead-coated (0.15 mm) glasses reduce the amount of radiation reaching the eye by 70%. It was found that exposure was reduced by 2.5 times after thyroid shielding was used. A lead apron increases protection by 16 times in the anterior-posterior plane and 4 times in the lateral plane. Lead alloy-coated gloves are difficult to use but can reduce exposure by up to 35%.[18]

The main purpose of the study is to evaluate the radiation safety and radiation awareness of physicians working in surgical units through the questions in the questionnaire created by us, to analyze and determine levels of this awareness on both their approaches to patients coming to the outpatient clinic during imaging requests involving radiation, and the importance and attitudes they take to protect the patient, the operating room team, and themselves during the use of fluoroscopy in the operating room.

The second aim of the study is to analyze the radiation safety and awareness knowledge of physicians working in surgical units with the questionnaire created by us, through the basic radiation protection and radiation safety questions.

MATERIALS AND METHODS

Our research was based on the evaluation of answers to the questionnaire that was applied to physicians working in the Surgical Units of Kartal Dr. Lütfi Kırdar City Hospital. This research is planned to be completed between 01/04/2024 and 01/06/2024, including the application of the questionnaire to the physicians working in the Surgical Units of Kartal Dr. Lütfi Kırdar City Hospital and the evaluation of their answers.

The 1st part of the research questionnaire consisted of questions aimed to collect general information about the physicians participating in the study. The questions to be answered by the participants are: gender, age, clinical title, the department they work in, years of experience in that department, their observative analysis of radiation exposure percentage regarding the environment they are working in, and their radiation protection training status. Seven questions in total.

The 2nd part of the research questionnaire consisted of questions aimed at analyzing the use of acquired radiation protection awareness in daily practice in the outpatient clinic and operation room. The questions to be answered by the participants are divided into categories.

The first category of 6 questions is aimed at determining the physician's level of awareness of radiation exposure and radiation protection when ordering medical imaging examinations for patients coming to the outpatient clinic.

The second category of 7 questions is aimed at determining the level of awareness of radiation exposure and radiation protection in cases where fluoroscopy is performed in the operating room.Thirteen questions in total.

The 3rd part of the research questionnaire consisted of questions aimed at analyzing the basic general radiation safety and radiation protection knowledge. The content of questions aims to determine the knowledge about: General principles of radiation protection, Factors affecting radiation protection, Imaging techniques that include radiation, Shielding equipment in the operating room and their characteristic features, Annual allowed dose limits, Fluoroscopic techniques and characteristic features, Radiation protection techniques during performing fluoroscopy. Twelve questions in total.

The questionnaire was administered to designated clinical units, and questionnaire responses were collected and analyzed. Then, radiation protection awareness and radiation safety knowledge levels were determined from the analysis of the answers.

In Part 1, the results were declared as percentages for each marked answer for seven demographic questions.

In Part 2, percentages of each answer were declared for each of the 13 questions marked for one of the following: yes, no, or sometimes.

In Part 3, the percentage of correct answers marked for each of the 12 questions was declared.

To determine the percentages of the questionnaire responses, frequency charts via descriptive statistics were used. The statistical analysis of the questionnaire was performed with SPSS 17.0.

Ethical approval for this study was obtained from Kartal Dr. Lütfi Kırdar City Hospital Ethics Committee, taken on 27.03.2024 (No:2024/010.99/2/37), and this study was conducted in accordance with the Declaration of Helsinki.

RESULTS

We presented the evaluation of the answers to the 3 different sections that make up our questionnaire in tables. The demographic structure of the questionnaire participants is represented in Table 1.

172 physicians participated in the study. 37 of the participants were women and 135 were men. Age distribution: 96 people between 21-30, 44 people between 31-40, 20 people between 41-50, 11 people between 51-60, 1 people over 60. Distribution and rates of experience: 66,9% (115) for 1-5 years, 18% (31) for 6-15 years, 8,1% (14) for 16-25 years, 7% (12) for 26-35 years, none for >36 years. Interdepartment distribution: 22,7% (39) for Orthopedics and Traumatology, 17,4% (30) for Ear Nose and Throat Diseases, 12,8% (22) for Plastic and Reconstructive Surgery, 10,5% (18) for Urology, 8,7% (15) for Neurosurgery, 8,1% (14) for General Surgery, 8,1% (14) for Anesthesiology and Reanimation, 6,4% (11) for Cardiovascular Surgery, 4,7% (8) for Thoracic Surgery and 0,6% (1) for Pediatric Surgery. Distribution of percentage of the radiation exposure possibility in work from the point of

Table 1. Demographic structure of the questionnaire participants

Gender (W, M)	37 (21.5 %)	135 (78.5 %)			
Age	55.8% (96), age 21-30	25.6% (44), age 31-40	11.6% (20), age 41-50	6.4% (11), age 51-60	0.6% (1), age >60
Title	65.1% (112), Assistant	20.9% (36), Specialist	1.2% (2), Assistant Professor	8.7% (15), Associate Professor	4.1% (7), Professor
Experince	66.9% (115), 1-5 years	18% (31), 6-15 years	8.1% (14), 16-25 years	7% (12), 26-35 years	None, >36 years
Department	22.7% (39), Orthopedics and Traumatology	17.4% (30), Ear Nose and Throat Diseases	12.8% (22), Plastic and Reconstructive Surgery	10.5% (18), Urology	8.7% (15), Neurosurgery
	8.1% (14), General Surgery	8.1% (14), Anesthesiology and Reanimation	6.4% (11), Cardiovascular Surgery	4.7% (8), Thoracic Surgery	0.6% (1), Pediatric Surgery
Percentage of radiation exposure possibility	54.1% (93), 0-20%	23.3% (40), 21-40%	13.4% (23), 41-60%	6.4% (11), 61-80%	2.9% (5), 81-100%
Participation in radiation protection training	Yes 4.7% (8)		No 95.3% (164)		

Table 2. Evaluation of radiation protection and radiation safety awareness in the outpatient clinic and in the operation room.

Question	Yes	No	Sometimes
1. After the examination, before a new imaging procedure order for the patient, I check the system when was the last time any imaging procedure was applied.	83.7%	4.1%	12.2%
2. After the examination, before a new imaging procedure order that will cause radiation exposure for the patient, I also check by asking the patient when the patient last had one of these tests. (private or other centers)	84.8%	5.8%	9.4%
3. When I monitor the patient from the system, I look at the summary document showing the applications involving radiation to which the patient is exposed for diagnosis and treatment purposes.	23.4%	62.6%	14%
4. Without affecting the diagnosis and treatment process, if the previous imaging examination performed on the patient involved radiation exposure, I would consider re-evaluating the need for a new examination that would cause radiation exposure and postponing it if it is not urgent.	70.9%	10.5%	18.6%
5. Without affecting the diagnosis and treatment process, I focus on the examination that will cause the least radiation exposure fort he patient.	82.6%	7.6%	9.9%
6. During examination if the patient insists on an imaging procedure that involves radiation exposure, I explain to the patient that this examination is not necessary and that procedure will cause a radition exposure.	75.6%	10.5%	14%
7. If fluoroscopic imaging technique will be used during the surgical operation, I always use the shielding equipment in the room.	51.2%	15.9%	32.9%
8. When using the fluoroscopic imaging technique during the surgical operation, if I do not have shielding equipment, and if my duty/position is appropriate, I keep distance from the floroscopic device or leave the room.	60.9%	15.4%	23.7%
9. When using the fluoroscopic imaging technique during the surgical operation, even if I have shielding equipment, and if my duty/position is appropriate, I keep distance from the floroscopic device or leave the room.	43.5%	26.8%	29.8%
10. When using the fluoroscopic imaging technique during a surgical operation, I warn my colleagues who do not have shielding equipment, to use the equipment or leave the room during the shooting.	73.4%	12.4%	14.2%
11. When using the fluoroscopic imaging technique during the surgical operation, I pay attention to the duration and necessity of use, use techniques that will reduce the number of shots, and take care to make transactions under optimum conditions.	70.8%	10.1%	19%
12. While fluoroscopic imaging technique is used during the surgical operation, in case of suspicion of a radiation accident, I contact the operating room nurse in charge and I write a report stating the situation.	67.7%	23.4%	9%
13. While fluoroscopic imaging technique is used during the surgical operation, in case of suspicion of a radiation accident, I follow up the report that I write and examine the analysis report.	49.4%	34.5%	16.1%

view the participants: 54,1% (93) for 0-20%, 23,3% (40) for 21-40%, 13,4% (23) for 41-60%, 6,4% (11) for 61-80%, and 2,9% (5) for 81-100%. And last distribution of participation in radiation protection training: Yes 4,7% (8), and No 95,3% (164).

Evaluation of questions about radiation protection and radiation safety awareness in the outpatient clinic and in the operation room is represented in Table 2.

The distribution of 'yes' answer percentages for 13 questions is as follows. 1st question 83,7%, 2nd question 84,8%, 3rd question 23,4%, 4th question 70,9%, 5th question 82,6%, 6th question 75,6%, 7th question 51,2%, 8th

Table 3. Evaluation of radiation protection and radiation safety knowledge

Question	% of Correct Answer
1. Which is not one of the general principles of radiation protection determined by the International Commission on Radiological Protection (ICRP)?	46.1
2. Which is one of the most important factors in radiation protection?	90.6
3. Which is the radiological imaging technique that causes radiation exposure?	98.2
4. Which is the radiological imaging technique that does not cause radiation exposure?	96.5
5. Which is not one of the shielding equipment for radiation exposure during surgical operations?	21.9
6. Which of the following is the maximum permissible exposure dose limit for 1 year for members of the public, according to the recommendation of the International Commission on Radiological Protection (ICRP)?	42.7
7. Which of the following is the main source of radiation exposure for the operation room team when using fluoroscopic imaging technique during surgery?	18.1
8. Which of the following is the most appropriate place to be positioned in the room when lateral imaging is performed with fluoroscopy during the surgical operation, even if I have shielding equipment and I cannot keep a distance from the patient due to my duty/position?	11.5
9. For which of the following organs radiation exposure can be dangerous?	90
10. Radiation dose decreases as distance increases. What is the formula for the decrease in radiation with distance? (d = distance between employee and primary beam)	56.9
11. Which of the following is the safe distance between employee and the fluoroscopic device, as recommended by the International Atomic Energy Agency (IAEA)?	58.3
12. How much greater is the radiation exposure that the patient received during fluoroscopic application compared to received from a chest X-Ray?	31.9

question 60,9%, 9th question 43,5%, 10th question 73,4%, 11th question 70,8%, 12th question 67,7%, 13th question 49,4%.

The distribution of 'no' answer percentages for 13 questions is as follows. 1st question 4,1%, 2nd question %5,8, 3rd question %62,6, 4th question %10,5, 5th question %7,6, 6th question 10,5%, 7th question 15,9%, 8th question 15,4%, 9th question 26,8%, 10th question 12,4%, 11th question 10,1%, 12th question 23,4%,13th question 34,5%.

The distribution of 'sometimes' answer percentages for 13 questions is as follows. 1st question 12,2%, 2nd question 9,4%, 3rd question 14%, 4th question 18,6%, 5th question 9,9%, 6th question 14%, 7th question 32,9%, 8th question 23,7%, 9th question 29,8%, 10th question 14,2%, 11th question 19%, 12th question 9%, 13th question 16,1%.

In the analysis of 2nd part radiation protection awareness questions, an awareness level of 50% or more was observed in 10 answers. This percentage rate is given based on the 'yes' answer given to the questions. In total, an awareness level of 50% or more was observed in 10 answers, and an awareness level of 70% or more was observed in 7 answers.

The evaluation of questions about radiation protection and radiation safety knowledge is represented in Table 3. The distribution of correct answer percentages for 12 questions is as follows. 1st question 46,1%, 2nd question 90,6%, 3rd question 98,2%, 4th question 96,5%, 5th question 21,9%, 6th question 42,7%, 7th question 18,1%, 8th question 11,5%, 9th question 90%, 10th question 56,9%, 11th question 58,3%, 12th question 31,9%.

In the analysis of 3rd part general radiation safety and radiation protection knowledge questions, a correct answer level of 50% or more was observed in 6 answers. This percentage rate is given based on the correct answer given to the questions. In total, it was observed that there were 6 questions with over 50% correct answers and 4 questions with over 90% correct answers.

DISCUSSION

Within the scope of the study, our questionnaire results show that the radiation protection awareness is high and the basic knowledge of radiation protection is sufficient for our physicians working in surgical units within our hospital.

It is clear that many benefits are provided by our physicians working in surgical units as a result of their attention to minimum radiation exposure as the primary goal. With awareness and knowledge of radiation protection during fluoroscopic applications, the physician protects themself, the team in the operation room, and the patient from unnecessary radiation dose exposure. Moreover, due to radiation protection awareness and knowledge, before medical imaging examination orders, the physician protects the patient from unwanted radiation dose exposure and prevents unnecessary use of hospital radiation resources.

Radiation protection awareness is a team effort as well as an individual, and this is a win-win situation. The results of this questionnaire we conducted within our hospital clearly emphasized this. The fact that our hospital's chief physician, clinic chiefs, and all physicians in surgical units have high awareness of radiation protection has created optimum working conditions in outpatient clinics and operation rooms.

The importance given by the chief physician and clinic chiefs to radiation safety and radiation protection in the meetings, and the protocols and approaches they created regarding medical imaging and interventions involving radiation in the clinics they manage in line with this awareness, have yielded results as seen in the questionnaire analysis.

Conclusion

In addition, the care shown by the chief physician and all clinic chiefs during this questionnaire participation process once again demonstrated their attention to this issue. Developing awareness about radiation safety and radiation protection should be supported by attention to in-clinic practices and maintenance as well as the management of the training process.

Ethics Committee Approval

The study was approved by the Kartal Dr. Lütfi Kırdar City Hospital Ethics Committee (Date: 27.03.2024, Decision No: 2024/010.99/2/37).

Informed Consent

Retrospective study.

Peer-review

Externally peer-reviewed.

Authorship Contributions

Concept: N.Ç., S.K.G.; Design: N.Ç., S.K.G.; Supervision: Ş.K.G., R.D.; Data collection &/or processing: N.Ç., S.K.G., R.D.; Analysis and/or interpretation: N.Ç., S.K.G.; Literature search: N.Ç.; Writing: N.Ç.; Critical review: N.Ç., S.K.G., R.D.

Conflict of Interest

None declared.

REFERENCES

1. IAEA. Radiaiton in everyday life – Risks and benefits. Available at: https://www.iaea.org/Publications/Factsheets/English/radlife. Accessed Mar 8, 2024.
2. Paolicchi F, Miniati F, Bastiani L, Faggioni L, Ciaramella A, Creonti I, et al. Assessment of radiation protection awareness and knowledge about radiological examination doses among Italian radiographers. Insights Imaging 2016;7:233–42. [CrossRef]
3. Yurt A, Cavuşoğlu B, Günay T. Evaluation of awareness on radiation protection and knowledge about radiological examinations in healthcare professionals who use ionized radiation at work. Mol Imaging Radionucl Ther 2014;23:48–53. [CrossRef]
4. Brenner DJ, Doll R, Goodhead DT, Hall EJ, Land CE, Little JB, et al. Cancer risks attributable to low doses of ionizing radiation: Assessing what we really know. Proc Natl Acad Sci USA 2003;100:13761–6. [CrossRef]
5. Arslanoğlu A, Bilgin S, Kubalı Z, Ceyhan MN, İlhan MN, Maral I. Doctors' and intern doctors' knowledge about patients' ionizing radiation exposure doses during common radiological examinations. Diagn Interv Radiol 2007;13:53–5.
6. Cameron J. Radiation Dosimetry. Environ Health Perspect 1991:91:45–8. [CrossRef]
7. SSK. Recommendations for medical imaging procedures (German Commission on Radiological Protection). Adopted at the 300th SSK meeting on 27 June 2019. Available at: https://www.ssk.de/SharedDocs/Beratungsergebnisse/EN/2019/2019-06-27Orientie.html. Accessed Mar 8,2024.
8. Semelka RC, Armao DM, Elias J Jr, Huda W. Imaging strategies to reduce the risk of radiation in CT studies, including selective substitution with MRI. J Magn Reson Imaging 2007;25:900–9. [CrossRef]
9. Vano E, Frija G, Loose R, Paulo G, Efstathopoulos E, Granata C, et al. Dosimetric quantities and effective dose in medical imaging: A summary for medical doctors. Insights Imaging 2021;12:99. [CrossRef]
10. Harrison JD, Balonov M, Bochud F, Martin C, Menzel HG, Ortiz-Lopez P, et al. ICRP Publication 147: Use of dose quantities in radiological protection. Ann ICRP 2021;50:9–82. [CrossRef]
11. Rehani MM. Patient radiation exposure and dose tracking: A perspective. J Med Imaging Bellingham 2017;4:031206. [CrossRef]
12. Rehani MM. Smart protection. IAEA Bull 2009;50:1–3.
13. Rehani MM, Frush D. Tracking radiation exposure of patients. Lancet 2010;376:754–55. [CrossRef]
14. Rehani MM, Frush DP. Patient exposure tracking—the IAEA smart card project. Radiat Prot Dosim 2011;147:314–6. [CrossRef]
15. Seuri R, Rehani MM, Kortesniemi M. How tracking patients radiological procedures and dose helps? Experience from Finland. Am J Roentgenol 2013;200:771–5. [CrossRef]
16. Khamtuikrua C, Suksompong S. Awareness about radiation hazards and knowledge about radiation protection among healthcare personnel: A quaternary care academic center-based study. SAGE Open Med 2020;8:2050312120901733. [CrossRef]
17. Özcan, M. Use of fluoroscopy in orthopaedics and traumatology operations. TOTBİD Derg [Article in Turkish] 2021;20:257–65.
18. Rampersaud YR, Foley KT, Shen AC, Williams S, Solomito M. Radiation exposure to the spine surgeon during fluoroscopically assisted pedicle screw insertion. Spine Phila Pa 1976 2000;25:2637–45. [CrossRef]

Cerrahi Birimlerde Çalışan Hekimlerin Radyasyon Güvenliği Bilgisi ve Radyasyondan Korunma Farkındalığının Değerlendirilmesi

Amaç: Radyasyonun tıbbi teşhis, prosedür ve cerrahi tedavide kullanımı, gelişen tekniklerle birlikte artmıştır. Bu rutin müdahale ve işlemler sırasında hekimlerin radyasyon güvenliği bilinciyle karar vermesi ve radyasyondan korunma bilgilerini günlük olarak uygulaması, kendilerini, ekiplerini ve hastalarını gereksiz radyasyon maruziyetinden ve radyasyonun olumsuz etkilerinden koruyacaktır. Amacımız, bu farkındalık ve bilgi düzeylerini belirlemektir.

Gereç ve Yöntem: Araştırmamız, Kartal Dr. Lütfi Kırdar Şehir Hastanesi Cerrahi Birimlerinde görev yapan hekimlere uygulanan ankete verilen yanıtların değerlendirilmesi üzerine kurulmuştur. Anket 3 bölümden oluşmaktadır. Araştırma anketinin 1. bölümü, çalışmaya katılan hekimler hakkında genel bilgi toplamayı amaçlayan 7 sorudan oluşmuştur. Araştırma anketinin 2. bölümü, poliklinik ve ameliyathanede edinilen radyasyondan korunma bilincinin günlük pratikte kullanımını analiz etmeyi amaçlayan 13 sorudan oluşmuştur. Araştırma anketinin 3. bölümü, temel radyasyon güvenliği ve radyasyondan korunma bilgilerini analiz etmeyi amaçlayan 12 sorudan oluşmuştur.

Bulgular: Bu ankete cerrahi birimlerden, 96'sı asistan olmak üzere, 172 hekim katılmıştır. İkinci bölüm radyasyondan korunma farkındalığı sorularının analizinde, 10 yanıtta %50 ve üzerinde farkındalık düzeyi gözlendi. Üçüncü bölüm genel radyasyon güvenliği ve radyasyondan korunma bilgisi sorularının analizinde, 6 cevapta %50 ve üzeri doğru cevap düzeyi gözlendi.

Sonuç: Radyasyondan korunma bilinci, bireysel bir çaba olduğu kadar bir ekip işidir. Hastanemizde yürüttüğümüz bu anketin sonuçları açıkça vurguluyor ki, hastanemiz başhekimi, klinik şefleri ve cerrahi ünitelerdeki tüm hekimlerin radyasyon güvenliği konusunda farkındalıklarının yüksek olması ve radyasyondan korunma konusunda bilgi sahibi olmaları, poliklinik ve ameliyathanelerimizde optimum çalışma koşullarını oluşturmuştur.

Anahtar Sözcükler: Cerrahi birimler; floroskopi; radyasyon farkındalığı; radyasyon güvenliği; radyasyondan korunma.