Radiologists' satisfaction and perceptions of medical imaging technologists' performance: A Cross-Sectional Survey in Albania and Kosovo

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Abstract

Purpose: This study aims to evaluate radiologists' satisfaction and perceptions regarding the performance of medical imaging technologists (MITs) in Albania and Kosovo, focusing on clinical competence, protocol adherence, workflow reliability, communication practices, and areas requiring educational improvement.

Design/methodology/approach: A cross-sectional online survey was conducted in 2025 among practicing radiologists in Albania and Kosovo. The questionnaire assessed demographic characteristics, years of experience, perceived technical skills

of MITs, patient management abilities, radiation protection practices, and overall workflow performance. Descriptive statistics and comparative analyses between Albania and Kosovo were performed.

Findings: A total of 41 radiologists were included in the analysis (Albania n=27; Kosovo n=14). Nearly half of the respondents had more than ten years of experience. Overall satisfaction with MIT performance demonstrated a mean score of 7.0 (SD 1.95) on a 0–10 scale, indicating moderate-to-high satisfaction. Reported challenges included inconsistent protocol familiarity, occasional lapses in radiation protection practices, and variable confidence during complex imaging procedures. Radiologists highlighted the need for enhanced practical training, stronger clinical protocol education, and improved proficiency in emerging technologies, including AI-based post-processing.

Research limitations/implications: The study includes a modest sample size and excludes North Macedonia due to insufficient responses, which may limit regional generalizability.

Practical implications: Findings may support curriculum enhancement, targeted CPD programs, and institutional strategies to strengthen MIT performance and workflow efficiency.

Social implications: Improved technologist competence may positively influence patient safety, diagnostic quality, and public trust in radiology services.

Originality/value: This study provides the first binational assessment of radiologists' perceptions of MIT performance in Albania and Kosovo, highlighting key competency gaps and training priorities for the region.

***Keywords**: radiologists; technologists; satisfaction; radiology workflow; radiation protection; academic training.*

Introduction

Medical imaging technologists (MITs) constitute an essential component of radiology services, contributing directly to diagnostic accuracy, radiation safety, patient management, and workflow efficiency. Their daily performance shapes both the technical and clinical quality of radiological examinations, influencing the broader healthcare system through timely diagnosis and optimized resource use. As imaging demand continues to rise across Europe, the role of MITs becomes increasingly central in sustaining high-quality service delivery (World Health Organization, 2021).

International literature highlights several core competencies expected from MITs, including adherence to imaging protocols, proper execution of positioning and exposure techniques, application of radiation protection measures, and

effective communication with radiologists in clinically complex or atypical cases (European Federation of Radiographer Societies [EFRS], 2019). Variability in training, professional standards, and continuous professional development may influence the degree to which these competencies are met in practice. Consequently, radiologists' perceptions offer a crucial perspective on current performance levels and areas requiring development within the radiology workforce.

In the Western Balkans, particularly in Albania and Kosovo, radiology departments have undergone notable technological advancements, including the adoption of digital radiography, computed tomography (CT), magnetic resonance imaging (MRI), and AI-assisted post-processing tools. However, evidence-based assessments of MIT performance and corresponding radiologists' satisfaction remain limited. Differences in academic preparation, practical training exposure, and institutional organization across the two countries may impact technologists' readiness to meet modern clinical demands.

Understanding radiologists' perceptions is vital for improving imaging quality, strengthening academic curricula, and guiding workforce development strategies. As technologists serve as frontline operators of imaging modalities, their competence directly influences diagnostic outcomes, patient safety, and interprofessional collaboration. Thus, a systematic assessment of radiologists' satisfaction can identify priority areas for educational reform and service improvement.

The purpose of this study is to assess radiologists' satisfaction and perceptions regarding the performance of medical imaging technologists in Albania and Kosovo. The study examines key aspects of MIT competence, including technical accuracy, protocol adherence, communication, radiation protection practices, and workflow reliability. By providing the first binational dataset on this topic, the study contributes to a clearer understanding of strengths and developmental needs within the regional radiology workforce.

Methods

Study design

A cross-sectional descriptive study design was employed to evaluate radiologists' satisfaction and perceptions concerning the performance of medical imaging technologists in Albania and Kosovo. The study utilized an online structured questionnaire distributed in 2025, enabling voluntary participation from radiologists practicing in public and private healthcare institution.

Survey instrument

The survey consisted of items addressing demographic characteristics (country of practice, years of experience, institutional type, subspecialty), workforce structure (number and educational level of technologists), and multiple domains of technologist performance. These domains included technical accuracy, patient management, adherence to radiation protection principles, protocol compliance, communication with radiologists, and overall workflow reliability. Responses were collected using Likert-type scales and categorical options. The questionnaire also contained items assessing the frequency of repeat examinations, lapses in radiation protection, and uncertainty regarding protocol selection.

Sample and data collection

Eligible participants were radiologists practicing in Albania and Kosovo at the time of survey distribution. The survey link was disseminated electronically through professional networks, institutional contacts, and direct communication. A total of 42 responses were received, of which 41 were retained for analysis after excluding one response from North Macedonia due to insufficient regional representation. The final sample comprised 27 radiologists from Albania and 14 from Kosovo.

Data analysis

Data were imported and processed using statistical software for descriptive and comparative analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were generated for all variables. Country-level comparisons between Albania and Kosovo focused on satisfaction scores and reported challenges such as uncertainty in protocol selection, need for re-examinations, and radiation protection lapses. Graphical representations—including bar charts and histograms—were produced to illustrate key findings, such as experience distribution, country distribution, and satisfaction scores.

Ethical considerations

Participation in the study was voluntary and anonymous. No identifiable personal data were collected. Completion of the online questionnaire implied informed consent. The study adhered to ethical standards for research involving human participants.

Results

Participant characteristics

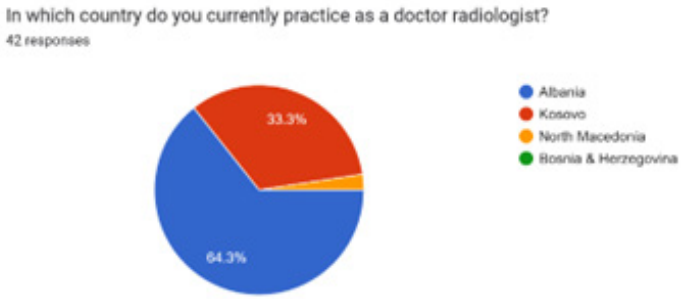
A total of 41 radiologists were included in the final analysis, with respondents originating from Albania (n = 27) and Kosovo (n = 14). Nearly half of the participants reported having more than 10 years of radiology experience, followed by groups with 0–2 years (n = 10), 6–10 years (n = 7), and 3–5 years (n = 6). Radiologists represented both public and private institutions and multiple subspecialties within diagnostic imaging.

TABLE 1. Participant demographic characteristics.

Variable	Category	n
Country	Albania	27
	Kosovo	14
Experience	0–2 years	10
	3–5 years	6
	6–10 years	7
	>10 years	19

Distribution of respondents

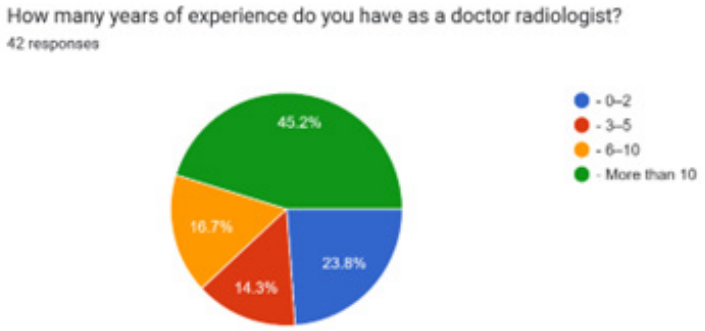
Figure 1 presents the distribution of radiologists across Albania and Kosovo. Albania accounted for approximately two-thirds of the respondents.



Experience distribution

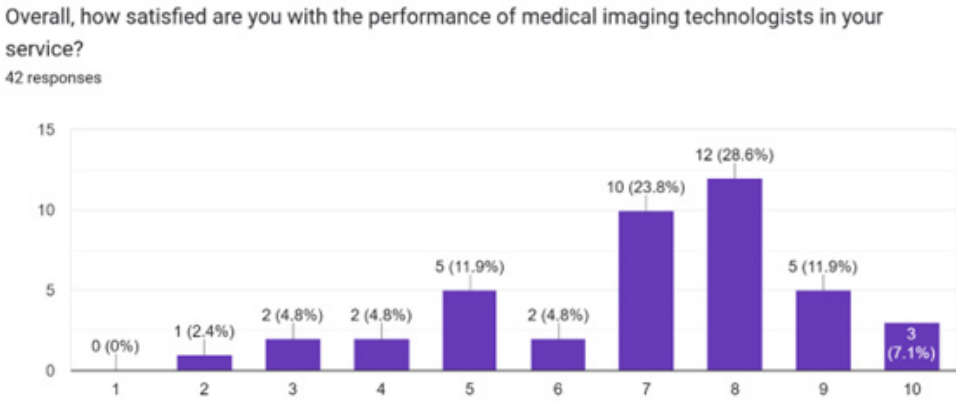
Figure 2 illustrates the distribution of radiologists by years of experience. The largest group comprised radiologists with more than 10 years of experience,

indicating a highly experienced sample likely to provide informed evaluations of technologist performance.



Satisfaction with technologist performance

Radiologists rated their overall satisfaction with medical imaging technologists on a 0–10 scale. The mean satisfaction score was 7.0 (SD = 1.95), indicating moderate-to-high satisfaction across the sample.



Performance domains

Across both countries, radiologists identified three consistent areas requiring improvement:

(1) variable familiarity with imaging protocols,
(2) occasional lapses in radiation protection practice, and
(3) inconsistent confidence in handling complex CT/MRI scenarios.

Although frequencies varied slightly, no major inter-country differences emerged in these domains.

Observed challenges in daily workflows

Radiologists reported that repeat examinations, protocol uncertainty, and missing or incomplete documentation occurred with low-to-moderate frequency. These findings indicate workflow inefficiencies that may influence diagnostic quality and patient throughput.

Discussion

The findings of this binational survey indicate that radiologists in Albania and Kosovo report an overall moderate-to-high level of satisfaction with the performance of medical imaging technologists. The mean satisfaction score of 7.0 suggests that MITs generally meet the expectations of radiologists; however, several areas for improvement were consistently identified. These include variability in protocol familiarity, occasional lapses in radiation protection practices, and inconsistent confidence in handling complex CT and MRI procedures. Such findings align with international reports noting similar challenges in technologist competence related to protocol standardization and advanced modality operation (EFRS, 2019).

The high proportion of radiologists with more than ten years of experience strengthens the reliability of the assessments provided, as experienced radiologists are more likely to identify nuanced workflow issues and competence gaps. The recurrent need for repeat examinations reported by participants indicates workflow inefficiencies that may influence diagnostic throughput, patient exposure levels, and overall departmental productivity. Comparable studies in other European contexts highlight that inadequate technologist training and inconsistent adherence to imaging protocols can significantly contribute to repeat imaging rates and reduced diagnostic quality (WHO, 2021).

The results highlight the importance of enhancing academic and continuous professional development programs for technologists. Radiologists emphasized the need for stronger training in clinical protocols and increased exposure to hands-on practice during academic formation. These needs reflect global trends that call for modernized radiographer curricula emphasizing advanced imaging, radiation protection, communication, and AI-assisted diagnostic workflows.

Although no major differences emerged between Albania and Kosovo, the overall patterns suggest regional similarities in workforce challenges and academic preparation. Strengthening collaborative educational initiatives, harmonizing

training standards, and expanding clinical mentorship opportunities may help address these shared challenges. Future research involving larger regional samples and institution-level data may further clarify contextual differences.

Conclusion

Radiologists in Albania and Kosovo generally express positive satisfaction with the performance of medical imaging technologists, yet consistently identify important areas for improvement. Enhancing protocol adherence, radiation protection practices, and advanced modality competence are key priorities for strengthening radiology practice across both countries.

The findings underscore the need for academic institutions and healthcare providers to align MIT training with modern radiology demands. Investments in updated curricula, structured clinical training, and continuous professional development can significantly improve technologist performance, reduce workflow inefficiencies, and enhance diagnostic quality.

This study contributes the first comparative dataset examining radiologists' perceptions of technologist performance in Albania and Kosovo. The insights generated may guide policy development, institutional training strategies, and future collaborative initiatives aimed at elevating radiology service standards in the region.

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