





# Assessment of the Visibility of Radiologists Through Structured Interview Approach: Our Experience in Low-Literacy Mammography Patients

BRIEF  
REPORT

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ABSTRACT

The present study reports our experience in detecting the visibility of radiologists to low-literacy mammography patients by using a structured interview approach. Mammography patients were specifically selected because their ability to discriminate between technicians, radiologists, and referring physicians can be tested more efficiently in an interactive encounter. A total of 74 women participated in the study. The percentage of patients who assigned the radiologist as a doctor was 41.8%. Of the patients, 77.4% were aware that a radiologist was a specialist. Considering the literacy level of patients, the potential value of a structured interview approach should be discussed in the development of measurement methods to assess the visibility of radiologists to patients. In addition, the face-to-face interaction provided by this approach may be valuable in giving insights about the content and the context of the relationship between patients and radiologists so that radiologists can become more visible.

**Keywords:** Communication, measurement, literacy, mammography

## INTRODUCTION

In 2017, the European Society of Radiology (ESR) published a concept paper on value-based radiology in response to a recently developed paradigm called “value-based healthcare” (1). According to value-based healthcare, value is defined as “patient’s health outcomes relative to the costs of achieving the outcomes” (2). The ESR states that this definition is fundamentally flawed because it disregards the correct diagnosis as an outcome, considering it only if it is wrong or a cause of complications. In this paradigm, a correct diagnosis is taken for granted, radiologists are perceived as costs, and the volume of imaging examinations is insignificant in the assessment of outcome.

In fact, radiologists have been cautiously reporting about such an “invisibility” that may lead to commoditization of radiology services (3). Commoditization is a marketing term that can be defined as “competition that is based primarily on cost and service, with little regard for quality” (4). In the case of radiology services, it denotes that radiologists’ value is an undifferentiated good, and radiologists are easily interchangeable to reduce costs. In Turkey, radiologists are already experiencing the practical implications of this process. Owing to government policy of service procurement, radiology reports are written by faceless radiologists located at distant places, with no visibility of their material existence and the function they serve.

What is the reason behind the invisibility of radiologists to policy makers? Traditionally, radiologists were perceived as “doctor’s doctor” rather than “patient’s doctor,” perceiving them as technical adjuncts to the service provided by clinicians. However, from the perspective of healthcare management, radiologists and clinicians are internal customers whose primary aim is to serve external customers, that is, patients and their families. Therefore, if radiologists are to enhance their visibility, endeavors should focus on visibility to patients and not other stakeholders. This view requires the development of a measurement method for a healthy assessment of radiologists’ visibility to patients, serving as both a physician and a specialist.

In the present study, we report our experience in detecting the visibility of radiologists to mammography patients by using a structured interview approach.

## MATERIALS and METHODS

### Study Setting and Patients

The study was conducted at a single academic hospital in January 2018. Participants included women who were referred to the Breast Imaging Unit of a single academic hospital for either screening or diagnostic purposes.

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**Table 1.** Flow of questions and directives in the main part of the structured interview

Question 1: A few moments ago, your mammography images were reviewed, and a breast ultrasound examination was performed by our friends. Do you know what profession our friends belong?

Directive: Regardless of the patients' initial response, her contention was challenged by making paired comparisons between three options (i.e., technologist, radiologist, and "I am not sure"), first between technologist and radiologist, followed by the preferred option and "I am not sure." During the second comparison, it was emphasized that the interview is not an examination they have to pass, and patients' honesty will be appreciated.

Question 2 (If the patient correctly identified the radiologist as a doctor): Remember your Public Healthcare Unit. I am sure you met one of the general practitioners working in that unit. A general practitioner is a doctor who takes care of most health problems. In case you need a special healthcare, general practitioners refer you to a specialist, such as a gynecologist or an oncologist.

My question is: What is the radiologist like? Is he/she a kind of doctor like a general practitioner or like a specialist?

Directive: To ensure that the answer is not arbitrary, the researcher requested for more explanation when necessary.

After their examination was completed, patients were invited to participate in a structured interview session that was conducted by the same off-site radiologist. As a method of conduct, a structured interview was preferred to surveys because the latter may preclude reliability of findings due to high level of reading frustration in low-literacy populations, as in our patient group. The interview included introductory questions about the patient's age and educational level (as determined by the last schooling grade patients had completely finished), followed by the main part with two questions that aimed to assess the patients' ability to discriminate the radiologist as a doctor and a specialist, respectively. Table 1 shows the flow of questions and directives in the main part of the structured interview. Statistical data include descriptive analysis of the findings.

This was a cross-sectional study. Approval for the study was obtained from the Clinical Research Ethics Committee of Erciyes University (Approval date: 01/04/2016, Case no: 2016/244).

## RESULTS

A total of 74 women participated in the study. The mean age of the patients was  $52.2 \pm 8.7$  range: 33-79 years. The mean years of schooling was  $6.4 \pm 4.0$  years. Only 14 (18.9%) women had  $\geq 10$  years of schooling.

During the structured interview, the number of patients who assigned the radiologist as a doctor was 31 (41.8%). Thirteen (17.5%) patients incorrectly assigned the radiologist as a technician, and 30 (40.5%) patients were unsure about the radiologist's profession. Of the 31 patients who assigned a correct role to the radiologist, 24 (77.4%) were aware that the radiologist was a specialist (or, in their terms, "a branch in medicine"), whereas 7 (22.5%) claimed

that radiologists were either general practitioners or they are not sure about the designation.

## DISCUSSION

Mammography patients were specifically selected because this examination requires patients' interactive (i.e., face-to-face) encounter with referring physicians, technicians, and radiologists so that their ability to discriminate between them can be tested more efficiently.

According to previous studies from Europe and the United States, the percentage of patients who identify radiologists as doctors ranges from 14% to 60% (5-9). To our knowledge, only one study has investigated the identity of the radiologist as a specialist (7). However, these studies rely on web-based or hard-copy surveys. In our study, most of the women (80%) had  $\leq 10$  years of schooling, which is the threshold level for reading frustration according to the single readability index published in Turkish (10). This finding shows that web-based or hard-copy surveys may not suffice in the reliable assessment of the visibility of radiologists to low-literacy populations.

During the interviews, we have observed that patients had strong willingness to discuss the significance and the implications of their imaging findings, thus turning the interviews into question-and-answer sessions frequently. This observation gave us additional hindsights about how to alleviate the problem of visibility. Neiman suggested that radiologists should communicate to patients everyday by introducing themselves and giving a short description of their education and what they do (11). Although direct communication can be encouraged as a necessary part of a radiology practice, we believe that it is not necessary for radiologists to advertise themselves during direct communication. All we have to do is to remember the basic expectations in patient-physician communication, such as introducing ourselves to patients, continuous orientation to what is happening, sharing information, discussing the significance of findings, and providing opportunities to ask questions (12). Turning "back to basics" may be the cheapest and the best strategy.

Although our study is conducted on a limited group of patients, it showed that radiologists are invisible to a significant percentage (nearly 60%) of mammography patients in our hospital. Considering the literacy level of patients, the potential value of a structured interview approach, including the one suggested in the present study, should be discussed in developing a measurement method to assess the visibility of radiologists to patients. Face-to-face interaction provided by this approach may also be valuable in giving hindsights about the content and the context of the relationship between patients and radiologists in order for radiologists to be more visible.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the Clinical Research ethics committee of Erciyes University Faculty of Medicine (Approval date: 01/04/2016, Decision no: 2016/244).

**Informed Consent:** Informed consent was obtained from the all patients.

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