RSNA Press Release

Patients Support AI as Radiologist Backup in Screening Mammography

Released: April 18, 2025

OAK BROOK, Ill. — The results of a large survey from a diverse patient population revealed cautious support for artificial intelligence (AI) implementation in screening mammography, according to a study published today in *Radiology: Imaging Cancer*, a journal of the Radiological Society of North America (RSNA). Personal medical history and sociodemographic factors influenced respondent's level of trust in AI.

While the diagnostic accuracy of AI systems has drastically improved in recent years, there is still a lack of widespread adoption and acceptance of this technology for a variety of reasons, such as concerns with data privacy, algorithmic bias or even level of knowledge of AI.

One opinion that is frequently overlooked in the conversation surrounding the growth of AI in radiology is that of the patient.

"Patient perspectives are crucial because successful AI implementation in medical imaging depends on trust and acceptance from those we aim to serve," said study author Basak E. Dogan, M.D., clinical professor of radiology and director of breast imaging research at the University of Texas Southwestern Medical Center in Dallas. "If patients are hesitant or skeptical about AI's role in their care, this could impact screening adherence and, consequently, overall health care outcomes."

download photo

Basak E. Dogan, M.D.

To gain a better understanding of patient opinions and concerns regarding the use of AI in screening mammography, Dr. Dogan and colleagues developed a 29-question survey to be offered to all patients who attended their institution for a breast cancer screening mammogram. The optional survey was available for a period of seven months in 2023.

All survey questions were closed-ended and assessed the participants' knowledge and perceptions of AI. The survey obtained demographic information in addition to clinical information, which uncovered a respondent's history with breast cancer, such as whether they had any abnormal mammograms in the past or if they or a close family member has ever had breast cancer.

Of the 518 patients who completed the survey, most indicated support for the use of AI alongside a radiologist's review, with 71% of respondents preferring AI to be used as a second reader. This was despite concerns about loss of personal interaction with the radiologist, data privacy, lack of transparency and bias. Less than 5% were comfortable with AI alone interpreting their screening mammogram.

Because of its large and diverse patient population, the survey uncovered a variety of demographic factors that influence patient perceptions. Respondents with more than a college degree or a higher self-reported knowledge of AI were two times more likely to accept AI involvement in their screening mammogram.

Of note, Hispanic and non-Hispanic Black respondents reported significantly higher concerns about AI bias and data privacy, which most likely resulted in a lower acceptance of AI among these patient groups.

"These results suggest that demographic factors play a complex role in shaping patient trust and perceptions of AI in breast imaging," Dr. Dogan added.

Familial and personal medical history also impacted patient attitudes toward AI.

Regardless of whether an abnormality was detected by AI or a radiologist, patients who had a close relative diagnosed with breast cancer were more likely to request additional reviews. However, these patients exhibited a high degree of trust in both AI and radiologist reviews when the mammogram came back as normal.

In contrast, patients with a history of an abnormal mammogram were more likely to pursue diagnostic follow-up if AI and radiologist reviews conflicted. This was especially the case if it was AI that flagged an abnormality.

"This highlights how personal medical history influences trust in AI and radiologists differently, emphasizing the need for personalized AI integration strategies in mammographic screening," Dr. Dogan said.

The researchers noted that it is important to continue engaging with patients to understand their evolving views of AI technology in health care, as the technology continues to advance.

"Our study shows that trust in AI is highly individualized, influenced by factors such as prior medical experiences, education and racial background," Dr. Dogan said. "Incorporating patient perspectives into AI implementation strategies ensures that these technologies improve and not hinder patient care, fostering trust and adherence to imaging reports and recommendations."

"Patient Perception of Artificial Intelligence Use in Interpretation of Screening Mammograms: A Survey Study." Collaborating with Dr. Dogan were B. Bersu Ozcan, M.D., Yin Xi, Ph.D., and Emily E. Knippa, M.D.

Radiology: Imaging Cancer is edited by Gary D. Luker, M.D., Michigan Medicine, University of Michigan, Ann Arbor, and owned and published by the Radiological Society of North America, Inc. (https://pubs.rsna.org/journal/imaging-cancer)

RSNA is an association of radiologists, radiation oncologists, medical physicists and related scientists promoting excellence in patient care and health care delivery through education, research and technologic innovation. The Society is based in Oak Brook, Illinois. (*RSNA.org*)

For patient-friendly information on mammography, visit *RadiologyInfo.org*.

Images (JPG, TIF):
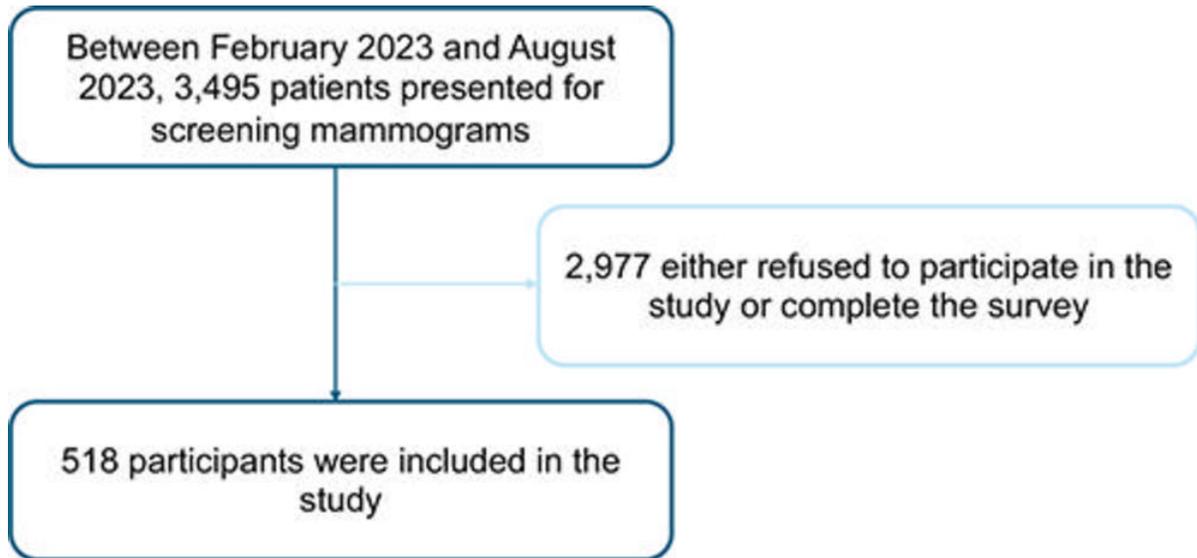
Figure 1. Study flowchart of participant inclusion and exclusion.
High-res (TIF) version
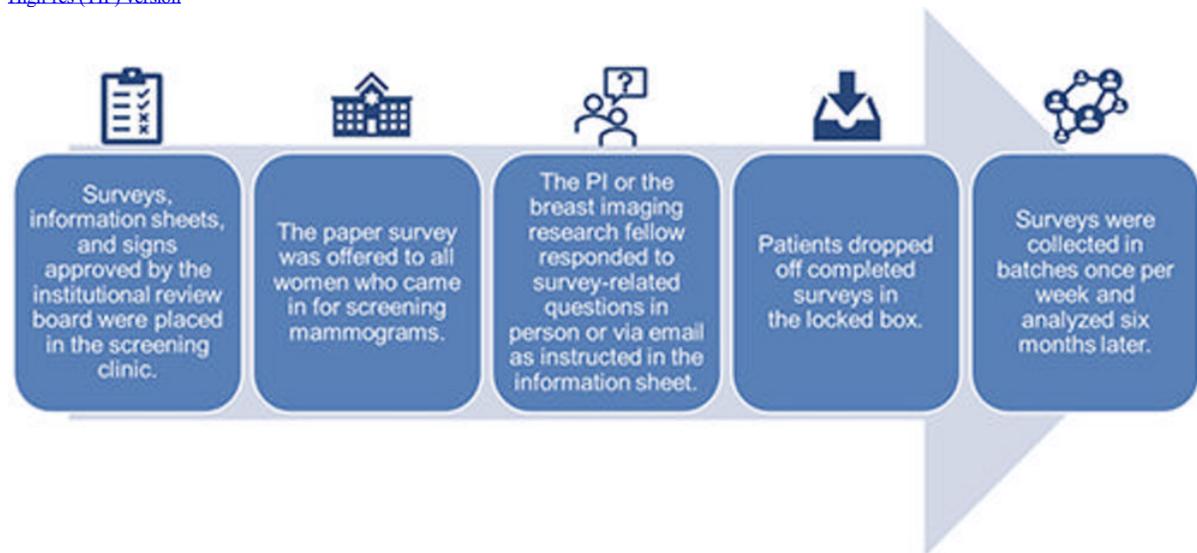
Figure 2. Schematic of the workflow. PI = principal investigator.
High-res (TIF) version

Resources:

Study abstract

Patients Support AI as Radiologist
Backup in Screening
Mammography
https://www.rsna.org

Page 2 of 2
Copyright ©2026 Radiological Society of North America (RSNA)