



USEFUL, BUT NOT IN CHARGE: PUBLIC VIEWS ON AI READING MEDICAL SCANS

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KEYWORDS	ABSTRACT
Artificial Intelligence; Medical Imaging; Radiology; Public Attitudes; Trust; Survey.	Background: Artificial intelligence (AI) can now help to read X-rays, CT and MRI scans, but whether patients accept it is a different question from whether it works. We explored how far people trust AI to read medical scans, what worries them and what role they want doctors to keep. Methods: An anonymous online questionnaire was shared through WhatsApp, Instagram and school groups between July and September 2026. Respondents aged 16 or over rated ten statements about AI in medical imaging, watched a short news clip about an AI tool used in the NHS, rated their support and could leave a written comment. Spearman's rank, chi-squared and Wilcoxon tests were used. Results: Of 505 responses, 480 came from people aged 16 or over, and 219 passed a data-quality check and were analysed. Most saw benefits: 61% agreed that AI could speed up diagnosis and 62% that it could reduce waiting times. Yet 66% said AI should always be double-checked by a clinician, and only 25% would be comfortable with AI reading their scan first. Support was linked to trust in hospitals ($p = 0.41$, $p < 0.001$) and confidence with digital tools ($p = 0.22$, $p = 0.001$), but not to having heard of medical AI or having had a scan. Mistakes and missed diagnoses were the most common concern in written comments. Conclusion: Respondents saw AI as useful but wanted doctors to stay in charge. Visible human oversight and plain-language explanations may matter as much as accuracy for public acceptance
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Introduction

Artificial intelligence (AI) is usually described as the branch of science and engineering that tries to understand intelligent behaviour and to build machines that show it [1]. Researchers were testing computers on the diagnosis of abdominal pain as early as 1976, yet in 2004 Ramesh et al. observed that medical AI had “not been embraced with enthusiasm”, partly because clinicians were uneasy about technology taking part in decisions [1].

Since then, machine learning has changed what is possible, and AI is now used in diagnosis, surgery, drug development and hospital management [2,3]. Medical imaging is one of the most developed areas. Demand for scans is rising faster than the number of doctors trained to report them, which adds to workload and to the risk of mistakes [2]. AI tools can highlight fractures, lung nodules and bleeding inside the skull, move urgent cases up the reporting list and cut the time taken to read scans [4]. Some have matched specialists: one system for detecting breast cancer on mammograms was not inferior to radiologists across 2,652 examinations [2].

Good results in research studies do not guarantee good results in hospitals. A model trained on images from one manufacturer's scanner can fail badly on images from another hospital, and many models are "black boxes" whose reasoning even their developers cannot fully explain [5]. It is still unclear whether these tools reliably benefit patients, clinicians or health systems [6]. Even so, clinicians are adopting AI quickly. Monthly users of one AI clinical information platform in the United States rose from 355 to over 700,000 clinicians in two and a half years [7]. Patients are in a different position. Hooshmandi et al. argue that people should be told when AI is used in their diagnosis and should agree to it [4], and Buch et al. warned that the biggest obstacle to the wider use of AI would be "the public's hesitation" [8].

Studies of public opinion suggest that people are open to AI, but with conditions. In a survey of 600 adults in Florida, 57.3% were comfortable with AI being used to read medical images, but many feared losing the "human touch" of a doctor [9]. A review of 21 qualitative studies found that patients and clinicians were broadly positive about AI but worried about empathy, the use of personal data and a lack of regulation [10]. Most of this research comes from high-income countries, and we found little on how people in Pakistan feel about AI reading their scans.

This study set out to find how far people trust AI to read medical scans, what risks they see and what role they want doctors to keep. We also tested whether support for AI is linked to confidence with digital tools, awareness of medical AI, previous scans or trust in hospitals.

Methodology

Research design and setting

We designed an anonymous questionnaire in Google Forms and shared it through WhatsApp, Instagram, school group chats and other online groups we belonged to, and people were free to pass it on. The survey was open from July to September 2026. Anyone who said they were under 16 was taken straight to the end of the form. We did not ask where respondents lived, but as the survey spread through our own networks in Islamabad, most were probably in Pakistan.

Questionnaire

The questionnaire had four parts. The first asked whether respondents had ever had a medical scan (yes, no or not sure), whether they had heard of AI being used to read medical images, how confident they were with digital tools (rated 1–5), and their age group and gender. The second contained ten

statements about AI in medical imaging (Figure 1), answered on a five-point scale from “Strongly disagree” to “Strongly agree”.

In the third part, respondents watched a short news clip from Cambridge University Hospitals NHS Foundation Trust about OSAIRIS, an AI tool developed at Addenbrooke’s Hospital using Microsoft software that is helping to reduce radiotherapy waiting times for cancer patients [11]. They then picked the clip’s main message from four options, as a check that they had watched it, and rated four things from 1 (lowest) to 5 (highest): their confidence in AI helping doctors to read scans, their comfort if AI were involved in analysing their own scan, how important it is for a qualified doctor to review AI results, and their overall support for AI reading medical images. Finally, an optional question asked for their biggest hope or concern about AI in medical imaging.

Data quality

Responses that gave exactly the same answer to all ten statements were removed before analysis. This pattern, known as straight-lining, is a common sign that a questionnaire was completed without reading the questions, and checking for it is a routine quality step in online surveys. This left 219 of the 480 eligible responses for analysis.

Analysis

“Agree” and “Strongly agree” were combined as agreement, and “Disagree” and “Strongly disagree” as disagreement. Ratings of 4 or 5 were counted as high, and respondents who rated their overall support 4 or 5 were called supportive. We used Spearman’s rank correlation for pairs of ordinal ratings, chi-squared tests to compare the proportion of supportive respondents between groups, and a Wilcoxon signed-rank test to compare each person’s comfort before the clip (“I would be comfortable if my scan was first read by AI”) with their comfort afterwards (“if AI was involved in analysing your own medical scan”). As the wording differed, this comparison is only a rough guide. A p value below 0.05 was taken as significant, and all expected counts in the chi-squared tests were above 5. The analysis was done in Python (pandas and SciPy). Written comments were sorted into themes, and a comment could count towards more than one theme; blank or unrelated comments were left out.

Ethics

This was an independent student project and was not reviewed by an ethics committee. The form explained the purpose of the survey, taking part was voluntary, no names or contact details were requested, and under-16s were screened out. Submitting the form was taken as consent, and personal details that one respondent typed into a comment box were not used.

Results

Respondents

The form received 505 responses. Twenty-five came from people under 16, and 219 of the remaining 480 passed the quality check and were analysed (Table 1). Respondents came from every age

group, from 16–17 to 55 or over, but most were young: 41% were aged 16–17 and 27% were 18–24. Just over half (53%) were female. Seventy per cent had had a medical scan, and the same proportion had heard of AI being used to read scans.

Table 1. Characteristics of the 219 respondents analysed

Characteristic	n (%)
Age group	
16–17	89 (40.6)
18–24	60 (27.4)
25–44	54 (24.7)
45 or over	16 (7.3)
Gender	
Female	115 (52.5)
Male	101 (46.1)
Had a medical scan	154 (70.3)
Heard of AI reading scans	154 (70.3)
Confidence with digital tools	
High (4–5)	73 (33.3)
Middle (3)	103 (47.0)
Low (1–2)	43 (19.6)

Three respondents preferred not to give their gender

Views on AI reading scans

Figure 1 shows how respondents answered the ten statements. Most saw practical benefits: 61% agreed that AI could speed up diagnosis and 62% that it could reduce waiting times for results. A similar share wanted doctors to stay in control: 66% agreed that AI should always be double-checked by a clinician (44% strongly) and 61% that the doctor’s view should decide if the twdisagree. Sixty-five per cent also wanted AI results to be explained to patients in plain language.

Opinion on accuracy was split. Thirty-one per cent agreed that AI could spot abnormalities as well as a trained doctor, 28% disagreed and 42% were neutral, while 56% worried that AI might miss rare conditions. Only 25% would be comfortable with AI reading their scan first and 34% would not, making this the only statement with more disagreement than agreement. Trust in hospitals to use AI responsibly was lukewarm (39% agreed, 18% disagreed), and 34% said that knowing AI had been used would make them more anxious about their results. Accepting the benefits did not mean accepting AI on its own. Of the 133 people who agreed that AI could speed up diagnosis, 116 (87%) also wanted it double-checked by a clinician, and only 44 (33%) were comfortable with AI reading their scan first. Even among the 67 who thought AI could spot abnormalities as well as a doctor, 51 (76%) still wanted its results double-checked.

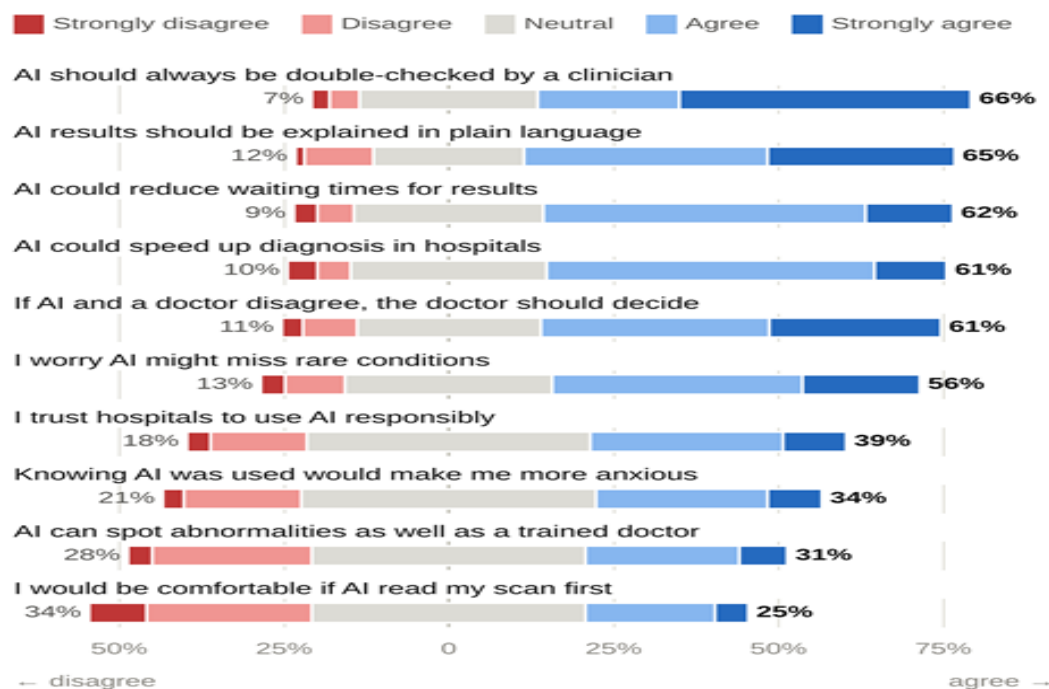


Figure 1. Answers to the ten statements ($n = 219$), ordered by level of agreement. Each bar is centred on the middle of its “Neutral” segment; the numbers give the percentage who disagreed (left) and agreed (right).

After the video

In total, 198 respondents (90%) picked the clip’s intended message, that AI can support doctors by helping to analyse medical images; 15 (7%) were unsure and four (2%) thought it said AI could completely replace doctors. Of the four ratings, the importance of a qualified doctor reviewing AI results scored highest (59% rated it 4 or 5, and 39% gave the top score). Overall, 40% were supportive, 46% chose the middle point and 15% rated their support 1 or 2. Fewer gave high ratings for confidence in AI helping doctors (34%) or for comfort with AI being involved in their own scan (34%). Even so, comfort was a little higher than before the clip, when 25% had agreed they would be comfortable with AI reading their scan first. Eighty-one people scored higher afterwards, 56 lower and 82 the same (Wilcoxon $W = 3,615.5$, $p = 0.012$).

What was linked to support

Trust in hospitals had the strongest link with overall support (Spearman’s $\rho = 0.41$, $p < 0.001$; Table 2). Among people who agreed that they trusted hospitals to use AI responsibly, 59% were supportive, compared with 28% of the others. Confidence with digital tools had a weaker positive link ($\rho = 0.22$, $p = 0.001$): 52% of those who rated their confidence 4 or 5 were supportive, against

26% of those who rated it 1 or 2. Having heard of AI in medical imaging, having had a scan and gender were not linked to support. Respondents aged 25 or over were the most supportive (50%) and those aged 18–24 the least (30%), but this difference was not significant ($p = 0.063$).

Table 2. Factors linked to overall support, and comfort before and after the clip ($n = 219$).

Comparison	Result	Interpretation
Confidence with digital tools and overall support	Spearman's $\rho = 0.22, p = 0.001$	Weak positive link
Trust in hospitals and overall support	Spearman's $\rho = 0.41, p < 0.001$	Moderate positive link
Heard of AI in imaging: yes 41% vs no 37% supportive	$\chi^2(1) = 0.30, p = 0.582$	No link
Had a scan: yes 43% vs no or not sure 32% supportive	$\chi^2(1) = 2.12, p = 0.145$	No link
Age: 16–17 38%, 18–24 30%, 25 or over 50% supportive	$\chi^2(2) = 5.54, p = 0.063$	Not significant
Gender: female 43% vs male 37% supportive	$\chi^2(1) = 0.80, p = 0.371$	No link
Comfort before vs after the clip (mean 2.87 vs 3.06)	Wilcoxon $W = 3,615.5, p = 0.012$	Small increase

“Supportive” means an overall support rating of 4 or 5. The three respondents who preferred not to give their gender were left out of the gender comparison.

Written comments

Eighty-seven respondents left a comment, and 80 of these could be analysed (Figure 2). The most common concern was mistakes or missed diagnoses (36 comments, 45%), including eight that mentioned rare conditions or gaps in the data used to train AI: “AI must be supervised by qualified doctors. Rare conditions with less training data would be challenging” (male, 55 or over). Twenty comments (25%) said that doctors must check AI results or stay in charge, for example: “AI can help doctors tremendously, but doctors should be required to carefully review and verify its analyses” (male, 16–17). The main hopes were faster results and less workload (19 comments, 24%) and earlier or more accurate detection (18, 23%). Smaller numbers worried that doctors would rely on AI too much (9, 11%) or that AI would replace doctors (5, 6%), and a few raised bias (5, 6%) or privacy (4, 5%). Fourteen comments (18%) mentioned a hope and a concern together, such as “Faster diagnosis and lowered costs as hope AND higher risk of misdiagnosis” (male, 18–24).

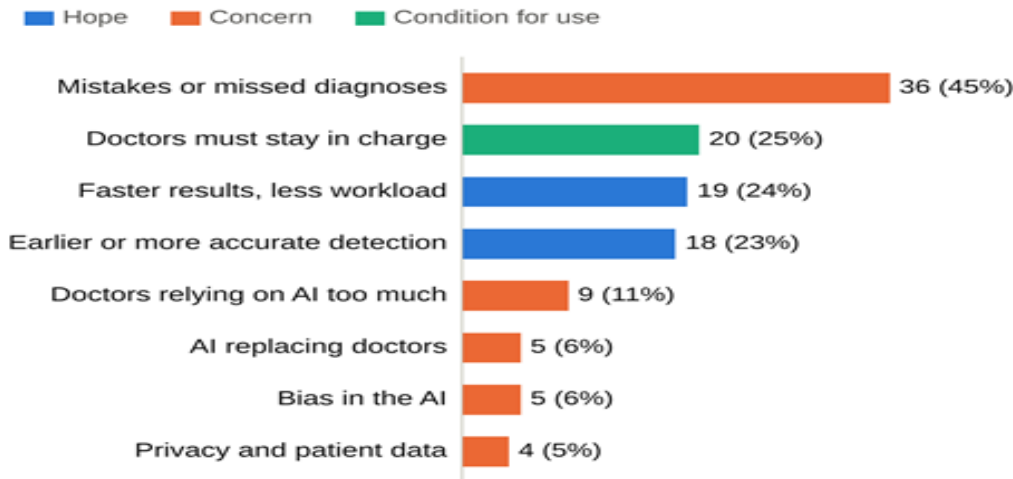


Figure 2. Themes in the 80 usable written comments. A comment could mention more than one theme. “Mistakes or missed diagnoses” includes eight comments about rare conditions or gaps in training data.

Discussion

The main finding of this survey is that respondents saw AI as useful but did not want it to work alone. Around six in ten accepted that AI could make diagnosis faster and cut waiting times, but a similar or larger share wanted every result checked by a clinician and the doctor to have the final say. Only a quarter were comfortable with AI reading their scan first, and even most of those who thought AI was as accurate as a doctor still wanted its results checked. One respondent put it in a single line: “AI can prove very supportive but not diagnostic in medical imaging” (female, 35–44).

This fits with earlier work. Witkowski et al. found that people were most comfortable with AI in tasks away from the doctor–patient relationship, and one of their participants wrote that, for “appointments and reading scans, it wouldn’t bother me. I don’t want AI making my medical decisions” [9]. Our respondents drew a similar line between AI as a helper and AI as a decision-maker. Fazakarley et al. likewise found that stakeholders wanted AI tools to allow a clinician to override the AI’s decision [10], and experts describe AI as working alongside doctors and radiologists rather than replacing them [4,5,8]. Comfort in our survey (25%) was much lower than the 57.3% reported by Witkowski et al. for AI reading medical images [9]. Their question did not say that AI would read the scan first, and that may be the part people object to. The small rise in comfort after the clip, when the question asked about AI being “involved” rather than reading first, points the same way.

The risks people raised are real ones. Mistakes were the most common concern in the comments, and 56% worried that AI might miss rare conditions. Hooshmandi et al. note that good labelled data are scarce for rare conditions [4], and Kaplun et al. describe models that work well in one hospital but fail on another’s images [5]. The Nature Biomedical Engineering editorial reports that current clinical AI systems are “brittle” and that evidence of real value for patients is still scarce [6]. The

public's caution is therefore close to the experts' own. The worry that doctors might rely on AI too much also has support, as clinicians themselves fear that depending on AI could reduce their experience and skill [10].

Trust in hospitals had the strongest link with support, which suggests that acceptance depends as much on who uses AI as on the technology itself. Fahim et al. argue that responsible use of AI needs transparency, regulation and continued human oversight [3], and Witkowski et al. recommend plain-language consent forms and openness with patients whenever AI is used [9]. Two-thirds of our respondents wanted AI results explained in plain language. Confidence with digital tools was also linked to support, though more weakly. This fits the view that people's own use of technology predicts how readily they accept it [9], and Patel et al. found that early-career clinicians used an AI platform more than senior colleagues, possibly because they are more familiar with digital tools [7]. Simply having heard of AI in imaging, however, was not linked to support, so awareness on its own does not seem to build trust. Unlike Witkowski et al., who found women less comfortable with AI than men [9], we found no clear difference by gender.

Many respondents were also unsure. Between 23% and 45% chose "Neutral" for each statement, and the middle point was the most common rating for overall support. Limited knowledge and misinformation shape how many people see AI [10], so if people have not yet formed a view, their first experiences of AI in hospitals may matter a great deal.

Our setting matters too. Low- and middle-income countries face shortages of trained staff and limited diagnostic services [3], and a single AI system could support places that lack radiologists, such as remote centres reading chest X-rays for tuberculosis [8]. AI could therefore be especially useful in countries like Pakistan. Yet one respondent worried specifically that doctors in Pakistan might come to rely on AI completely, a reminder that public trust will depend on clear rules about how doctors use it.

This study has several limitations. The sample was reached through our own social networks, so it was young, largely school-based and digitally connected, and it cannot represent the wider population of Pakistan or anywhere else. We did not record where respondents lived. Removing responses that failed the quality check may also have left a sample that is more interested in AI than average. Each idea was measured with a single question rather than a tested scale. The before- and-after comparison used differently worded questions and had no comparison group, so it cannot show that the clip changed anyone's mind. Several tests were also run without correcting for multiple comparisons, so borderline results, such as the difference by age, should be treated with caution. Future studies should recruit more representative samples, such as patients waiting for scans, offer the survey in Urdu as well as English, allow one response per person and ask identical questions before and after any information is given.

Conclusion

In this survey, respondents saw clear benefits in AI reading medical scans, especially faster results and shorter waits. However, most wanted a doctor to check every result and make the final decision, and few were comfortable with AI reading their scan first. Trust in hospitals mattered more than

simply knowing about AI. For hospitals introducing AI into imaging, being open about its use, explaining results in plain language and keeping doctors visibly responsible may matter as much for public acceptance as the accuracy of the software.

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Data availability: The anonymised survey data are available from the corresponding author on reasonable request.

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