

How Does the Healthcare Community Perceive Artificial Intelligence?

—A Systematic Review

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Abstract

Although artificial intelligence (AI) has flaws, healthcare workers and students have been implementing it in a post-COVID world. This article's objective is to recognize the differing perceptions of AI impact on healthcare between different groups in healthcare. A systematic literature review was conducted on PubMed articles searched via keywords "artificial intelligence", "healthcare", and "job security" from 1/1/2020 to 1/31/2025 studying healthcare workers and students. After excluding those not meeting inclusion criteria, articles were qualitatively assessed for an overall positive, mixed, or negative view on AI in healthcare. 71.4% of articles held overall positive views on AI in healthcare and 17.5% held mixed views, while 11.1% were negative. Of the articles with positive views, 62.2% had concerns that included job security, privacy, or lack of empathy in AI programs. The greatest concern about AI in healthcare was job security (30.2%), followed by implementation or trust in AI (23.8%). There was a significant drop in the percentage of articles viewing AI positively from COVID era (2020-22, 81.0%) to post-COVID era (2023-25, 66.7%) [χ^2 5.56, $p = 0.0184$]. Articles that focused on healthcare professionals were more positive about AI (75.5%) than expected compared to articles that focused on students (57.1%) [χ^2 6.75, $p = 0.00937$]. Articles based in the Western world were significantly less positive on AI (68.0%) compared to those from the non-Western world (72.4%) [χ^2 21.4, $p < 0.01$]. Therefore, the healthcare community is largely positive about AI, but with some concerns regarding job security and privacy.

Keywords

Artificial Intelligence, Healthcare, Job Security

1. Introduction

The scope of artificial intelligence (AI) in professional fields has already grown to the level of sophistication. Considering this, job security has been a concern [1]. Among those concerned about job security, healthcare workers have been questioned through multiple surveys across the globe. By 2025, hundreds of articles have been published on the field of AI and the concern about job security in the healthcare industry.

A common field of healthcare that has been discussed in the literature regarding AI is radiology. Radiographers and radiologists have been commonly surveyed in various parts of the world regarding where they think AI stands in the current industry and whether it will have an impact on their roles or duties as a healthcare professional.

The acceptability of AI in healthcare has not only touched on radiology, but also many other healthcare categories. Pharmacy [2], dentistry [3], and healthcare students are among the various demographics in health science that have been studied. Therefore, it becomes clear that attitudes toward AI should be something that concerns many in the health sciences. Gathering knowledge on the overall healthcare attitudes toward AI can be useful for providing a perspective on machine learning and how we should go about using intelligence as a tool for the future of healthcare.

It should also be noted that perceptions of AI in healthcare can change over time. The impact of Coronavirus disease-19 (COVID-19) on global perceptions of healthcare should not be understated, and its effect on healthcare perceptions of AI is a topic that can be studied [4]. In fact, one can study healthcare perceptions of AI across demographics. These attitudes can change depending on whether one is a student, whether one is in the Western world, or whether one is living under the COVID-19 pandemic.

This study aims to review the literature on healthcare attitudes toward AI in a systematic way such that meaningful conclusions can be drawn about these attitudes. The objective of the study is to recognize the differing perceptions of AI and its impact on healthcare between different groups.

2. Methodology

The study was designed as a systematic literature review. Articles on PubMed published from January 1, 2020 through January 31, 2025 were searched during the period of February 1, 2025 through February 7, 2025. The population studied included healthcare workers and healthcare students.

Articles were collected via search results using keywords such as “artificial intelligence healthcare job” and “artificial intelligence job security.” Please see Appendix A for the full Boolean search strings. While other multidisciplinary databases were briefly searched and considered, including Scopus, retrieval was ultimately limited to PubMed due to the redundancy of search results, comprehensive review of articles already on PubMed, and the goal of simplicity and clarity. Arti-

cles found using these search terms were initially included as part of the study. Exclusion criteria were then implemented where articles that did not satisfactorily meet the standards of the study would not be used as part of the data collection.

The exclusion criteria were threefold: 1) Articles were excluded if they were not written in English. 2) Articles were excluded if they were deemed not relevant to the study. 3) Articles were excluded if they were deemed insufficient in providing meaningful data to the study.

An article would be deemed insufficient if it did not: a) provide a population or demographic in the healthcare professional field to be studied, or b) adequately provide a clear conclusion as to the overall attitude toward AI held by that demographic being studied.

Articles would also be excluded if they were redacted, not yet officially published, or a potentially altering conflict of interest was discovered in the disclosures of the paper.

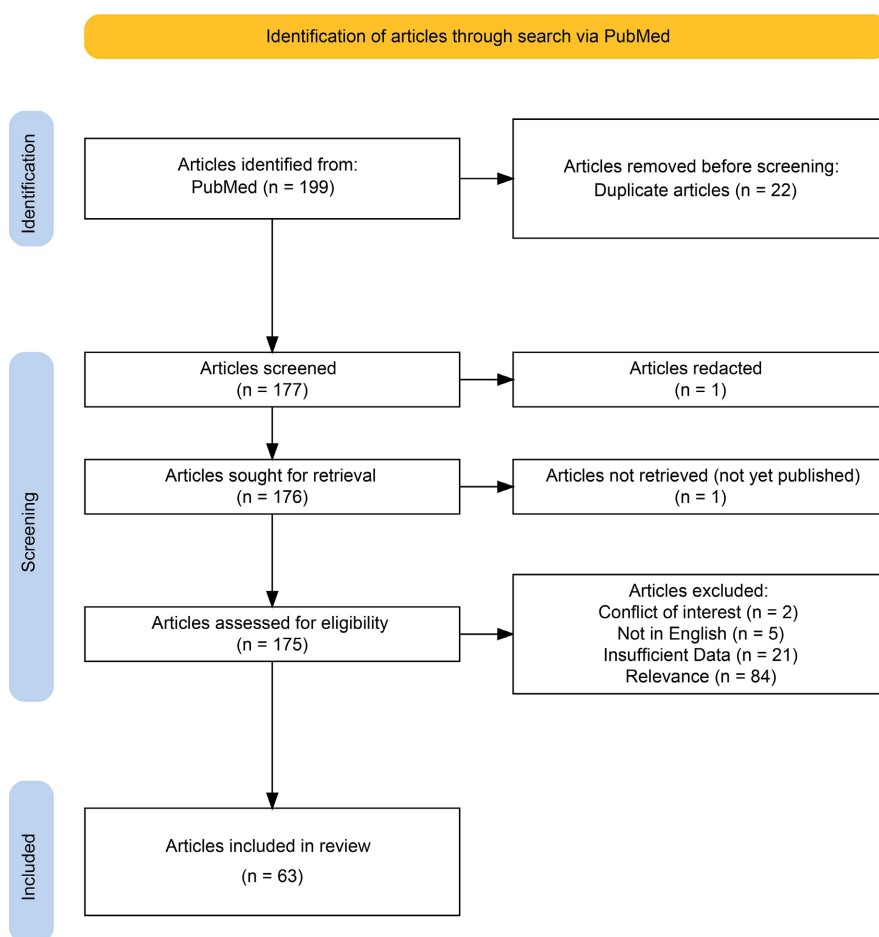


Figure 1. A PRISMA Flow diagram of the inclusion-exclusion process behind article selection for this study.

Please refer to **Figure 1** regarding the PRISMA Flow diagram and Appendix B for the PRISMA 2020 checklist [5]. After obtaining 199 search results from the

keywords “artificial intelligence healthcare job” and “artificial intelligence job security”, 22 articles were duplicates from the two searches. Thus, 177 articles were screened. Out of the 177 articles in review, 1 article was redacted, 1 was not yet published, 2 were removed due to conflicts of interest, 5 were not in English, 21 provided insufficient data, and 84 were removed due to lack of relevance. After this process, 63 articles were included in the systematic literature review.

The 63 articles included were qualitatively assessed and independently reviewed for their overall attitude toward AI. The four categories of overall attitude include positive, positive with concern, mixed, or negative view on AI in healthcare. While these attitudes are by nature subjective, these terms were defined by the normative properties, or value judgments, presented in the conclusions of each article. An article was assigned a “positive” attitude if there were no significant criticisms acknowledged in the body of the conclusion. If there were at least one or more significant concerns regarding AI in the conclusion, but the article still provided a positive value judgment, then the article would be assigned “positive with concern.” If the article provided a negative judgment on AI with limited to no positive considerations, the article would be considered “negative.” If the article did not fall into any of these categories, provided both positive and negative attitudes, but was not largely positive in the conclusion of the study, the article would be considered “mixed.” The review process also determined a topic of greatest concern in the field of AI in healthcare, and a secondary concern. These qualities were then charted on a Microsoft Excel spreadsheet, along with the demographic, country of origin, and year of publication.

Both authors of this study agreed on the articles included, the attitude assignments, and the statistics after bi-monthly meetings and discussions between the months of February and March 2025. After the results were reviewed independently by the authors of this study, the findings were presented at a colloquium at Seton Hall University in April 2025 in front of a faculty panel. During this colloquium, bias and limitations were reviewed. Additionally, a formal study-quality assessment was conducted to evaluate risk of bias utilizing a JBI checklist (See Appendix C which contains information regarding the biases assessed) [6]. See Discussion regarding the effects of study-quality assessment.

3. Results

The study results demonstrated an overall positive attitude toward artificial intelligence, with 45 out of the 63 articles (71.4%) holding either a positive or “positive with concern” view on AI in healthcare. 11 out of 63 articles (17.5%) held mixed views, while 7 out of 63 (11.1%) held an overall negative view (**Figure 2**). Of the 45 articles with positive views on AI, 28 of them (62.2% of the positive articles) had concerns. These concerns included job security, privacy, or lack of empathy in AI programs.

The most common greatest concern about AI in healthcare was job security (19 out of 63 articles, or 30.2%), followed by the implementation of AI or trust in AI

(15 out of 63 articles, or 23.8%).

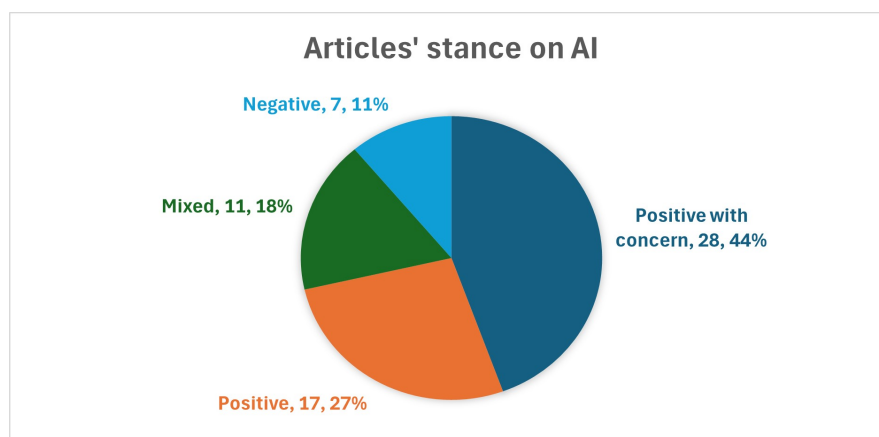


Figure 2. A pie chart of all attitudes toward AI in healthcare.

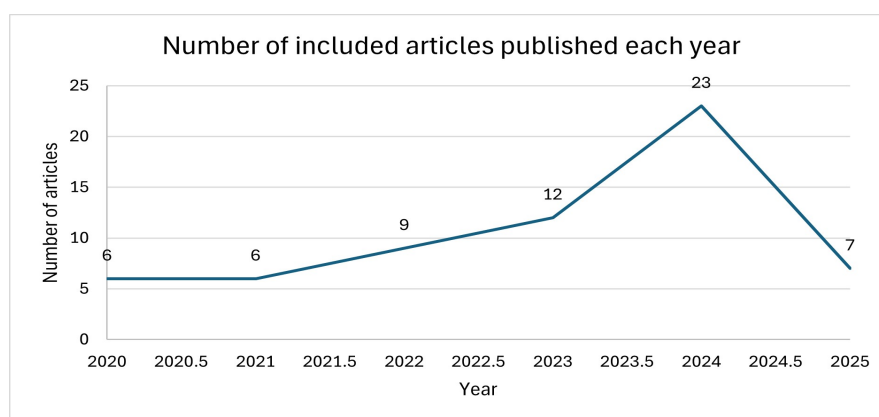


Figure 3. A line chart showing the growing number of articles per year. (Please note that the study was conducted at the beginning of 2025, so the number of articles in 2025 is expectedly much lower than 2024.)

Of note, the number of articles on the topic published per year was growing at a near-exponential rate when looking at the trend from 2021 to 2024 (**Figure 3**). This perhaps demonstrates a growing interest in the subject.

Using Chi-square analysis, the results demonstrated a statistically significant drop in the percentage of articles that viewed AI positively from COVID era (81.0%) to post-COVID era (66.7%) [χ^2 of 5.56, $p = 0.0184$] (**Table 1**). While there is uncertainty or debate as to what determines COVID era and post-COVID era, these results presuppose COVID era to be any articles published from 2020 to 2022, and post-COVID era to be any articles published from 2023 to 2025. Please note that this assumes a rough timeline between when the data was collected and when the data was eventually published.

Furthermore, articles focusing on healthcare professionals were more positive about AI (75.5%) than expected compared to articles focusing solely on healthcare students (57.1%) [χ^2 of 6.75, $p = 0.00937$] (**Table 2**). This Chi-square statistic

assumes the null hypothesis to be that the proportion of professional articles carrying a positive attitude toward AI in healthcare is equal to the proportion of positive attitudes toward AI in healthcare students.

Table 1. Chi-square analysis comparing post-COVID era to COVID-era attitudes.

Chi-square Goodness of Fit Comparing Post-COVID era attitudes (2023-2025) to COVID-era attitudes (null hypothesis = post-covid should be the same as during covid)					
	Observed (post-COVID era)	Expected (COVID era)	Difference	Difference Squared	Difference Squared/Expected Frequency
Positive attitude	28	0.81 (34)	-6.00	36.0	1.06
Non-positive attitude	14	0.19 (8)	6.00	36.0	4.50

The Chi² value is 5.56. The *p*-value is 0.0184. The result is significant at $p < 0.05$.

Table 2. Chi-square analysis comparing Healthcare professional attitudes to student attitudes.

Chi-square Goodness of Fit Comparing Healthcare Professionals to Healthcare Students' attitudes (null hypothesis = Professionals carry the same proportion of positive attitudes)					
	Observed (Professionals)	Expected (Students)	Difference	Difference Squared	Difference Squared/Expected Frequency
Positive attitude	37	0.57 (28)	9.00	81.0	2.89
Non-positive attitude	12	0.43 (21)	-9.00	81.0	3.86

The Chi² value is 6.75. The *p*-value is 0.00937. The result is significant at $p < 0.05$.

Lastly, articles based in the Western world were less positive on AI (68.0%) compared to those from the Non-Western world (72.4%) [Chi² of 21.4, $p < 0.01$] (**Table 3**). This statistic assumes the Western world to be North America, Europe, and Australasia, and the Non-Western world to be all other countries, including Africa, Asia, and the Middle East.

Table 3. Chi-square analysis comparing Western to non-Western attitudes.

Chi-square Goodness of Fit Comparing Western attitudes to Non-Western attitudes (null hypothesis = Western attitudes should be the same as Non-Western attitudes)					
	Observed (Western)	Expected (Non-Western)	Difference	Difference Squared	Difference Squared/Expected Frequency
Positive attitude	17	0.72 (30.4)	-13.4	180	5.92
Non-positive attitude	25	0.28 (11.6)	13.4	180	15.5

The Chi² value is 21.4. The *p*-value is < 0.00001 . The result is significant at $p < 0.05$.

4. Discussion

The attitudes of the healthcare community toward AI and its role are evolving.

While it may be difficult to figure out the exact attitudes of these populations, we can look at trends in the data taken from this systematic literature review.

Overall, we see a growing interest in the field of AI, with each subsequent year putting out more publications on AI attitudes compared to the year before. We see that most articles view AI to be an overall positive in the healthcare field, even amongst radiographers and radiologists. However, most of those studies that viewed AI positively also had concerns, namely that of job security, privacy, and lack of personalization or empathy in AI programs. Job security was largely the biggest point of discussion, but even in the context of radiology, AI was not seen as a direct threat to job security as much as it was seen as an entity not well-understood by those in the health industry.

Based on the results of the data, COVID-19 played a role in affecting healthcare attitudes toward AI. While people stayed home in isolation, the tech industry grew and advancements in AI led to the technology in advanced learning models we have today. There was not only an increase in AI investment, but also an increase in the AI job industry [7]. The rapid pace of AI after COVID led to an exposure of imperfections in utilizing AI. This may explain the drop in the percentage of articles that viewed AI positively from COVID to post-COVID era.

Healthcare professionals were also found to have a more positive attitude toward AI than students. This could be explained by the professionals' experience in the workforce, their confidence in their abilities, and their overall perspective on the world outside of healthcare. Students of healthcare could be seen as more inquisitive, with an interest in interprofessional education [8]. They are more likely to challenge establishments in technological advancements or question their purpose.

While these findings presented a descriptive interpretation of the data, there may be speculative considerations regarding its impact. There are sociocultural differences between demographics regarding AI in healthcare, and the comparison between the Western and Non-Western world highlight that. Some of these differences can be attributed to socioeconomic climates, while a large component may be due to the underlying philosophies within the Western world compared to the Non-Western world. Anthropologist Giles Crouch puts forth the viewpoint that the Western world tends to care more about privacy and data usage, while Eastern cultures in Asia focus more on "social harmony" and well-being [9]. Different regions of the world have different priorities, and these differences can affect how one views the impact of AI in healthcare.

There were limitations to this study. The study was restricted to English-only articles. This review was limited to a single database being searched for purposes of clarity, simplicity, and repetition of themes across articles across databases. The stringent criteria for qualified articles and rigorous exclusion process, together with the single-database search, led to a limited number of articles.

5. Conclusion

The healthcare community remains largely positive about AI, but not all sectors

of the healthcare community share a unilateral sentiment. Concerns regarding job security, privacy, or the practicality of implementation remain questions even as we are half a decade into the world's introduction of the COVID pandemic. Socioeconomic and cultural differences play a role in attitudes toward AI, and these nuances should be considered when evaluating healthcare attitudes toward AI as well. To determine what direction AI is going in the healthcare field, it is important to ascertain an impression from the healthcare community on whether it is an acceptable or favorable tool.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix A

The Boolean search strings utilized in this study were the following:

“Artificial Intelligence”

AND (healthcare)

AND (“job security”)

/

“Artificial Intelligence”

AND (healthcare)

AND (attitudes OR perception)

Appendix B

See below for the PRISMA 2020 Checklist [5]:

- 1) Title: Identified as a systematic review
- 2) Abstract: Present and addresses the criteria presented
- 3) Rationale: There is a need to evaluate healthcare perceptions on AI.
- 4) Objective: To determine the overall attitudes and trends of healthcare perceptions on AI.
- 5) Eligibility: See Methodology.
- 6) Information sources: PubMed (and briefly Scopus, which was ultimately deferred).
- 7) Search strategy: See Boolean Strings in Methodology.
- 8) Selection process: Individual review of attitudes in each article, followed by colloquium.
- 9) Data collection process: Independent review of data on Excel, followed by colloquium.
- 10) Data items: See Methodology.
- 11) Bias assessment: Independently reviewed and assessed by two additional doctorates.
- 12) Effect measures: Positive, positive with concern, negative, or mixed.
- 13) Synthesis methods: See Methodology.
- 14) Reporting bias: Results were reviewed independently with verification by a third party.
- 15) Certainty assessment: Chi-square analysis was utilized.
- 16) Study selection: See PRISMA flow chart.
- 17) Study characteristics: See Methodology.
- 18) Risk of bias in studies: See Items 11 and 14.
- 19) Results of individual studies: See Results.
- 20) Results of Synthesis: See Results.
- 21) Reporting biases: See Discussion.
- 22) Certainty of evidence: See Results.
- 23) Discussion: Results demonstrated overall positive attitudes with concern.
- 24) Registration and protocol: Reviewed and accessible by Seton Hall University.

- 25) Support: No financial support was received.
- 26) Competing interests: None
- 27) Availability of data: Available upon request by authors and/or Seton Hall University.

Appendix C

See below for the JBI checklist regarding risk-of-bias assessment [6]:

- 1) The review question was clearly and explicitly stated.
- 2) The inclusion criteria were appropriate for the review question.
- 3) The search strategy was appropriate.
- 4) There were adequate sources and resources to search for studies.
- 5) The criteria for appraising studies were appropriate.
- 6) Critical appraisal was conducted by two or more reviewers independently.
- 7) See methodology regarding minimizing errors in data extraction.
- 8) The methods used to combine studies were appropriate.
- 9) The likelihood of publication bias was assessed.
- 10) Recommendations for policy or practice were supported by the reported data.
- 11) The specific directives for new research were appropriate.