

# Artificial Intelligence in Public Healthcare: Examining Its Influence on Doctor–Patient Relationships, Clinical Workflows, and Professional Retention in India’s Digital Health Ecosystem

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## Abstract

Artificial Intelligence (AI) is increasingly transforming healthcare systems worldwide, offering innovative solutions to challenges related to accessibility, efficiency, and quality of care. This study aims to examine the role of AI in India’s public healthcare system, with a specific focus on its influence on doctor–patient relationships, clinical workflows, and professional retention. The research adopts a qualitative approach based on a comprehensive review of existing literature from credible academic sources, including peer-reviewed journals, reports, and policy documents. The findings indicate that AI has significant potential to enhance healthcare delivery by improving diagnostic accuracy, enabling predictive analytics, and automating administrative tasks. In the Indian context, AI-driven technologies contribute to addressing critical issues such as resource shortages, high patient loads, and disparities in healthcare access. However, the integration of AI also presents challenges. The study highlights concerns regarding the potential depersonalization of doctor–patient relationships, disruptions in clinical workflows due to technological integration, and uncertainties among healthcare professionals related to job roles and security. Furthermore, the study emphasizes that while AI can reduce workload and improve efficiency, its impact on professional retention is complex and depends on factors such as training, adaptability, and organizational support. Ethical issues, including data privacy, algorithmic bias, and accountability, also play a crucial role in shaping the acceptance and effectiveness of AI in healthcare. In conclusion, the study suggests that AI holds great promise for strengthening India’s public healthcare system, but its successful implementation requires a balanced, human-centered approach. Policymakers and healthcare institutions must focus on infrastructure development, skill enhancement, and ethical governance to ensure that AI complements human expertise and promotes sustainable healthcare outcomes.

**Keywords:** Artificial Intelligence, Public Healthcare, Doctor–Patient Relationship, Clinical Workflows, Professional Retention, Digital Health, India, Healthcare Workforce

## Introduction

Innovations in artificial intelligence (AI) are changing healthcare systems worldwide by addressing long-standing problems with accessibility, efficiency, and quality of treatment. As part of its digital transformation efforts, India is incorporating AI into public healthcare systems. One such program is the Ayushman Bharat Digital Mission (ABDM), which seeks to establish a nationwide network of

connected healthcare systems. According to Narayan et al. (2024), this ever-changing digital ecosystem is using data-driven technologies, electronic health records, and artificial intelligence to improve healthcare delivery and accessibility.

Support for diagnosis, analytics for treatment planning, administrative automation, and predictive analytics are all examples of AI's usefulness in healthcare. Clinical precision, operational efficiency, and the reduction of human error may all be enhanced using these technologies, according to Oh et al. (2025). One example is how AI-powered solutions might free up healthcare workers to focus more on patient care by automating mundane administrative duties like paperwork and appointment scheduling. Given the huge patient numbers and limited resources in India's public healthcare system, these gains are especially crucial (Zhang et al., 2024).

The doctor-patient connection is essential to good healthcare delivery, but the growing use of AI also has significant consequences for this interaction. The foundation of this connection has always been open dialogue, empathy, and trust. The use of AI has the potential to improve decision-making via the provision of timely and correct information; yet, there is a concern that it might diminish human connections and lead to a depersonalization of care (Blease et al., 2019). The incorporation of AI into healthcare interactions brings up concerns around responsibility, trust, and accountability while also introducing a "third agent" that has the power to change the dynamics between patients and clinicians (Oh et al., 2025).

Clinical processes are also profoundly affected by AI, in addition to changes in relationships. Healthcare facilities may benefit from AI's ability to optimize patient flow, streamline diagnostic procedures, and promote evidence-based decision-making. According to Narayan et al. (2024), these innovations have the potential to alleviate congestion and enhance service delivery in settings with limited resources, like public hospitals in India. However, healthcare workers' digital literacy, data quality, and technical infrastructure are all crucial to AI's effective deployment.

The effect on healthcare worker retention rates of AI adoption is another important factor. Problems with physician burnout, excessive workloads, and a lack of available workers are long-standing issues in India's healthcare sector. According to Sharma and Gupta (2023), artificial intelligence (AI) might help ease some of these constraints by assisting with clinical decision-making and lowering administrative tasks, which would lead to an improvement in work satisfaction. However, healthcare providers may be hesitant to embrace AI due to worries about losing their jobs, being too dependent on technology, and facing ethical consequences.

## **1.2 Background of the study**

The delivery, management, and experience of medical services are being transformed by artificial intelligence (AI), which has already emerged as a revolutionary force in healthcare systems throughout the world. Artificial intelligence (AI), more generally understood as computers' capacity to mimic human intellect and decision-making, is finding more and more applications in healthcare, particularly in the areas of diagnosis, treatment planning, and administration (Oh et al., 2025). Healthcare systems in developing nations like India have ongoing problems such a lack of qualified medical professionals, unequal access to healthcare funding, and long wait times for patients. This is why the fast development of AI is so important for these countries. We are seeing AI here as a strategic instrument to make healthcare more accessible and efficient.

Stress and burnout among healthcare workers have been issues in India's healthcare system due to infrastructure constraints and high patient loads. This is particularly true in the public sector. The use

of artificial intelligence (AI) to automate mundane processes including patient data management, clinical decision support, and medical documentation has recently gained popularity as a solution to these problems. By streamlining processes and relieving physicians of administrative duties, these advances hope to free up healthcare providers to devote more time and energy to patient care (Reuters, 2025). In addition, applications driven by AI have the ability to enhance diagnostic precision and forecast patient outcomes, leading to better and faster healthcare delivery (Frontiers in Medicine, 2023) overall.

The doctor-patient connection is one of the most important parts of healthcare that is changing because of AI. Trust, open dialogue, and shared decision-making have traditionally marked this relationship's transition from a paternalistic paradigm to a patient-centered, collaborative one (Zhang et al., 2024). But new dynamics have emerged with the incorporation of AI into clinical interactions, essentially turning the old dyadic connection into a more intricate interaction combining smart systems, patients, and clinicians. Some worry that AI will replace humans in healthcare interactions, reducing human connection, empathy, and trust, even while it might improve decision-making and provide suggestions based on evidence (Oh et al., 2025).

Patients and doctors alike see AI more as an auxiliary tool than a substitute for human knowledge, according to the available research. Clinical judgment and interpersonal care should continue to play a fundamental role in healthcare delivery, and studies show that AI works best when combined with medical supervision (Narrative Review, 2025). On the other hand, people may have reservations about healthcare providers and technology due to worries about data privacy, ethical responsibility, and the dependability of AI systems. Because of the wide regional variation in India's technology infrastructure and digital literacy, these problems are especially pressing there.

Artificial intelligence (AI) has far-reaching effects on healthcare operations, changing relationship dynamics and improving efficiency in areas like patient triage, hospital administration, and diagnosis. Better operational efficiency is achieved via the use of AI-driven clinical decision support systems (CDSS) and electronic health records (EHRs), which allow for quicker and more accurate decision-making. Technological constraints, a lack of uniformity, and healthcare providers' reluctance stemming from worries about usability and trust are some of the obstacles that research has shown to be associated with AI incorporation into current workflows (Wang et al., 2021). When it comes to healthcare systems in underdeveloped countries, these obstacles are particularly noticeable because of the potential limitations in resources that can prevent the efficient use of cutting-edge technology.

Impact on healthcare worker retention is another important factor to consider when using AI. High rates of burnout and turnover among India's medical professionals are attributable, in large part, to the emotionally taxing and physically taxing nature of healthcare job. By automating routine jobs and increasing productivity, AI might help alleviate these problems. Automated documentation and clinical decision-making systems, for instance, may save healthcare workers a lot of time and effort, which might lead to higher levels of job satisfaction and retention (Reuters, 2025). However, healthcare personnel may feel apprehensive and resistant due to worries about job security, changing professional duties, and the need for new skill sets. Artificial intelligence (AI) is becoming more prevalent in India's public healthcare system, which is indicative of a larger trend toward EHRs. Despite the many potential benefits of AI in healthcare, the technology also raises serious concerns about trust, ethics, worker dynamics, and the integration of workflows. To create AI-driven healthcare systems in India that are both sustainable and oriented on people, it is crucial to understand these complex effects.

### 1.3 Problem Statement

The use of AI in public healthcare systems is moving forward at a fast pace, especially in India's developing digital health environment. Despite the many potential benefits of artificial intelligence (AI) in healthcare, such as increased productivity, better diagnosis, and better treatment delivery, the many complicated issues that have arisen as a result of AI's broad use are still little understood, particularly in the Indian public healthcare system.

A major worry is the possible evolution of the relationship between doctors and patients. With more and more clinical decision-making and patient contacts powered by AI, the traditional foundations of this relationship trust, empathy, and human communication may be shaken. Integrating AI into healthcare delivery begs the issues of how to maintain human connection, build trust with patients, and ensure ethical responsibility. There is a lack of data from India's public healthcare systems that looks at how these relationship dynamics are changing, even though there is more and more study on AI in healthcare worldwide.

The incorporation of AI to healthcare operations also brings new possibilities and new obstacles. Implementing AI might cause disruptions in current workflows, need new technical capabilities, and generate opposition from healthcare workers, despite its ability to expedite operations, decrease administrative burdens, and increase efficiency in contexts with limited resources. The efficacy and flexibility of AI-driven processes are still up in the air in India's public healthcare systems, which often encounter infrastructure constraints and varied degrees of digital literacy.

### 1.4 Artificial Intelligence in India's Public Healthcare System

The public healthcare sector in India is being revolutionized by artificial intelligence (AI), which is becoming more important as the nation moves towards a data-driven and digitally linked healthcare ecosystem. Problems with population density, few healthcare resources, a lack of qualified healthcare workers, and access gaps between rural and urban areas have plagued India's healthcare system for a long time. According to Sivasuramanian and Raval (2025), AI is being used strategically to close these gaps and enhance healthcare delivery on a large scale.

In an effort to establish a unified digital health infrastructure, the Ayushman Bharat Digital Mission (ABDM) is one of many programs that the Indian government has launched to encourage digital health transformation. Enabling AI-driven solutions to work efficiently across healthcare contexts, this ecosystem includes digital identities, electronic health records, and interoperable platforms. Ado (2026) states that AI enables large-scale health monitoring, illness tracking, and tailored healthcare treatments by using digital public infrastructure and data ecosystems. There are a wide variety of AI applications in India's burgeoning public healthcare system. The early identification and diagnosis of diseases is one of the most important applications of AI. Das et al. (2024) found that AI systems may improve treatment results and reduce death rates by analyzing massive amounts of medical data to detect illnesses including TB, cancer, and cardiovascular disorders at early stages. Furthermore, AI is finding use in population health management. Specifically, predictive analytics are being utilized in large-scale public health initiatives to identify groups that may be at risk and to direct preventative healthcare efforts (Sivasubramanian & Raval, 2025).

Integrating AI into healthcare systems may improve access, particularly in poor and rural areas. Reducing the requirement for physical access to specialist healthcare facilities, telemedicine platforms enabled by AI-powered technologies provide remote diagnosis and consulting. This is especially important in India, where rural residents often lack access to adequate medical treatment due to a shortage of doctors and other medical personnel. Healthcare services may be extended to more people

with the use of AI-supported systems that enable non-specialist healthcare personnel to conduct preliminary screenings and aid in clinical decision-making (Sivasubramanian & Raval, 2025). Improvements in public healthcare facilities' clinical processes and administration are also being aided by AI. Artificial intelligence (AI) helps healthcare organizations run more smoothly by automating mundane administrative duties like patient data input, appointment scheduling, and medical recording. Clinical decision support systems powered by AI also aid physicians in making evidence-based judgments, which in turn increases diagnostic precision and decreases medical mistakes (Raj et al., 2025). When it comes to public hospitals that treat a large number of patients every day, these innovations are lifesavers for the sake of efficiency and time management.

Despite these improvements, there are still obstacles to using AI in India's government-run healthcare system. Inadequate infrastructure, a lack of accessible, high-quality health data, incompatible technologies, and a lack of computer competence among medical staff are major obstacles. Furthermore, issues with data privacy, ethical AI use, and the opaqueness of AI decision-making processes bring up concerns about openness and responsibility in healthcare contexts (IndiaAI, 2024). In addition, healthcare providers must be trained to use AI technologies efficiently and these tools must be integrated into current healthcare systems for AI to be implemented successfully. This calls for substantial investments in capacity development. Especially in public healthcare systems with limited resources, the advantages of AI could not materialize without appropriate regulatory frameworks and established practices.

### **1.5 Impact of Artificial Intelligence on Doctor–Patient Relationships, Clinical Workflows, Healthcare Professionals, and Workforce Retention**

#### **AI and Doctor–Patient Relationship**

The conventional doctor-patient dynamic, based on mutual understanding, compassion, and open dialogue, is being transformed by the introduction of AI into healthcare. By offering precise, data-driven insights, AI-enabled solutions like diagnostic algorithms and clinical decision support systems may improve care quality and facilitate informed decision-making (Oh et al., 2025). By increasing openness and bettering patient outcomes, these technologies have the ability to bolster patients' faith in their healthcare providers' judgments. Nevertheless, worries over the depersonalization of care are heightened by the growing dependence on AI. Zhang et al. (2024) found that when AI is used as a "third agent" in clinical encounters, it has the potential to decrease the amount of direct contact between physicians and patients. This, in turn, might diminish emotional bonds and patient satisfaction. Patients may have doubts about the reliability of healthcare professionals and technological systems due to concerns about data privacy, algorithmic bias, and responsibility. Therefore, the proper integration of AI into healthcare systems without sacrificing patient-centeredness is crucial if it is to realize its promise of improving the doctor-patient interaction (Blease et al., 2019).

#### **AI and Clinical Workflows**

Artificial intelligence (AI) is revolutionizing healthcare operations by making them more efficient, accurate, and time-wise. Healthcare workers may devote more time to really caring for patients when mundane administrative duties like patient data administration, appointment scheduling, and medical recording are automated (Raj et al., 2025). More rapid and precise diagnoses are possible with the help of AI-powered diagnostic technologies and predictive analytics, which bolster clinical decision-making even further. These enhancements may maximize resource usage and assist manage large patient numbers in healthcare systems with limited resources, like public hospitals in India. The use of AI in healthcare processes, however, is not without its difficulties. Problems with infrastructure, digital system interoperability, and healthcare worker training may all impede successful adoption

(Sivasubramanian & Raval, 2025). There are a lot of obstacles to integrating workflows smoothly, such as people's resistance to change and worries about becoming too dependent on technology.

### **AI and Healthcare Professionals**

Artificial intelligence (AI) is bringing new kinds of human-technology cooperation, which is changing the way healthcare professionals do their jobs. When it comes to interpreting findings, making final choices, and delivering compassionate care, healthcare professionals will always be indispensable, even if AI systems can help with diagnostics, treatment planning, and administrative activities (Oh et al., 2025). As a result of this change, medical professionals will need to acquire new digital and technological skills to engage with AI systems. Professionals are able to devote more time and energy to difficult therapeutic tasks when AI is used to alleviate cognitive and administrative difficulties. But it might make healthcare personnel nervous about their futures in the industry, their roles evolving, and their reliance on technology (Sharma & Gupta, 2023). Thus, aspects like perceived utility, usability, and confidence in AI systems impact healthcare workers' adoption of AI.

### **Professional Retention in Healthcare**

In healthcare systems across the world, professional retention is an important issue. This is especially true in India, where shortages of healthcare workers are exacerbated by heavy workloads, stress, and burnout. Artificial intelligence (AI) has the ability to boost job satisfaction among healthcare workers by decreasing the need for repetitive activities, increasing work efficiency, and providing help for clinical decision-making (Raj et al., 2025). Artificial intelligence may make the office more manageable by reducing paperwork. Nevertheless, AI's effect on retention is intricate and varied. A decrease in burnout is possible, but long-term dedication to the field and morale might take a hit due to worries about job loss, shifting responsibilities, and ethical responsibility (Sharma & Gupta, 2023). The potential advantages of AI might be nullified if healthcare personnel experience an increase in stress due to insufficient training and a lack of institutional support for the implementation of AI. Thus, the effectiveness of AI in retaining professionals is contingent upon its human-centered and supporting integration into the healthcare system.

### **Literature review**

The goal of this study was to better understand how digitalization, EHR use, and medical data are influencing healthcare delivery and research within hospitals. To get insight into the present state of medical data digitization and repository creation, we administered a questionnaire survey to sixteen public hospitals and upper-primary health care institutions in the Bikaner area of Rajasthan, India. Computerized factor analysis (PCFA) and statistical tests, such as Cronbach's Alpha, the Kaiser-Meyer-Olkin (KMO) measure, and Bartlett's test of sample adequacy, have been applied to the survey data, and the findings show that the digitalization process is still in its early stages. Of the technical specialists surveyed, 35.6% were in agreement that digitalization had taken place, 12.3% were unsure, and 52.1% were in disagreement. Regarding the same, among non-technical professionals, 41.4% were in agreement, 13.0% were indifferent, and 45.6% were in disagreement. This indicates that digitization is still in its early stages, because almost half of the organizations acknowledge modest development in this area. Another important finding from this investigation is that structured as well as semi-structured medical datasets are not easily accessible, which is a major obstacle to using AI and ML in healthcare research in India. These technologies have the potential to greatly improve healthcare diagnostics, prediction of results, and clinical decision-making, leading to better healthcare services overall, especially in settings with limited resources (Maurya, 2026)

The integration of human and machine intelligence into a more streamlined and easily accessible health ecosystem is one way that artificial intelligence (AI) may revolutionize healthcare. Problems

like uneven service distribution and a lack of medical resources in India show how AI may be a game-changer. The COVID-19 pandemic hastened the use of AI in medical settings even further. This research delves into the literature from reputable sources such as PubMed and Google Scholar to explore the ways AI contributes to the advancements in precision medicine, efficient and cost-effective healthcare, service expansion, and patient satisfaction. Even though AI can automate a lot of work, humans are still needed for most activities. The use of artificial intelligence (AI) in digital health treatments presents both opportunities and challenges for public health practitioners in terms of policy and ethics (**Kumar, 2023**)

This research delves into the effects of AI on healthcare employment prospects, drawing attention to important obstacles that might restrict its advantages. Research identifies and evaluates essential elements impacting employability, including technological adaption, skills, and training, using methodologies such as Total Interpretive Structural Modelling (TISM) and MICMAC analysis. The results show that these elements are related in a hierarchical fashion and highlight the necessity of specific interventions, including training and a willingness to learn, to boost employability. Healthcare efficiency may be enhanced by coordinating human and technical resources, according to the research, which provides useful information for policymakers and workforce planners (**Jain, 2021**)

The rapid development of AI-assisted MedTech has caused a dramatic and exciting shift in the healthcare sector. This paper examines the fundamental elements and complex features of such an ecosystem, focusing on how it might improve healthcare accessibility, operational efficiency, and the quality of the doctor-patient relationship. I) Electronic health records are a part of the medical technology ecosystem that we are involved with. (II) Telp, a telemedicine platform that links healthcare stockholders and offers virtual healthcare services including remote consultations. (III) WHDs, or wearable health devices, track a person's vitals in real time. (IV) Health record portals (PPs) to make information like appointments, reminders, and health records more easily accessible. (V) Data analytics tools (DAT) that make use of massive amounts of data and artificial intelligence (AI). In this paper, we provide an easy-to-use model/application that analyzes the sensory aspects of telemedicine from the perspective of the patient within the context of current healthcare services powered by artificial intelligence (**Pandey, 2025**)

The integration of electronic health record (EHR) systems and increasing levels of artificial intelligence (AI) in healthcare has changed the way doctors and nurses collaborate, plan their work, and make clinical decisions. Examining how new technologies have affected interprofessional cooperation and the effectiveness of patient care, this research finds both positive and negative effects. This mixed-methods research combines quantitative workflow analysis with qualitative interviews conducted in interdisciplinary hospital units; it is based on human factors engineering principles, the technological acceptability model, and sociotechnical systems theory. Though automated documentation and AI-enhanced decision support can reduce administrative burden by as much as 28% and improve diagnostic accuracy, the study found that these technologies also cause communication breakdowns, alert fatigue, and unofficial dialogue between doctors and nurses. While electronic health record systems did make patients' records more accessible, they also increased the cognitive load of users and made them more dependent on electronic intermediaries. The available research suggests that clinical teams may reestablish workflow balance and trust via the implementation of suitable AI design, EHR modification, and especially targeted training of digital competence. According to the research, interoperability and social and ethical conformity with clinical practice standards are crucial for the effective use of AI and EHR technology. These findings provide a solid foundation for healthcare technology policy moving forward, with an emphasis on human-

centered design, equitable AI deployment, and the long-term digital transformation of healthcare institutions (**Alraddadi, 2024**)

Improved diagnosis, patient care, and medical research are just a few ways in which AI and ML have revolutionized contemporary healthcare. These advancements allow for more accurate and early illness identification via improved medical imaging analysis. Predictive analytics powered by artificial intelligence help with tailored treatment programs and early illness detection, which in turn improves patient outcomes while decreasing healthcare expenditures. Patient engagement and access to healthcare services are both enhanced by AI-powered solutions like chatbots and virtual assistants. The analysis of complicated biological data is another way in which AI and ML hasten the process of medication discovery and development, leading to more effective and quicker healthcare breakthroughs overall (**Mehta, 2026**)

The impact of digital health solutions on healthcare is discussed in this chapter, along with how they are improving patient outcomes and causing a sea shift in conventional wisdom. Telemedicine and other forms of remote patient monitoring are changing the face of healthcare by bringing about an environment that is patient-centric and places an emphasis on efficiency, customisation, and accessibility. Emerging as potent tools, digital health technologies provide creative ways to address current healthcare issues. Health care providers may link patients with doctors regardless of their location using telemedicine, which allows for remote medical exchanges and virtual consultations. People in underprivileged or far-flung areas, in particular, benefit from this enhanced accessibility since it improves patient outcomes while decreasing the need for in-person visits. Essential to this chapter is the discussion of remote patient monitoring, in which doctors may keep tabs on their patients' vitals from afar using data collected in real time via wearable sensors and fitness trackers. By taking a proactive stance, healthcare resources may be allocated more efficiently and interventions can be made more quickly, thus improving patient care. The profound influence of digital health technologies on the revolution of healthcare delivery is highlighted in this chapter. Healthcare systems throughout the globe may improve health outcomes by adopting these innovations, which will lead to higher-quality treatment, more efficient use of resources, and patient-centered settings (**Vij, 2024**)

Digital health records (DHR) are being implemented in India via programs like the National Digital Health Blueprint and the Ayushman Bharat Health Stack, which seek to provide a safe, effective, and easily accessible digital health environment. Standards for interoperability, data security, user permission, and a Health Information Exchange (HIE) to facilitate smooth data exchange are essential components. Low participation, insufficient data analytics, as well as implementation hurdles continue to be problems, despite the fact that programs like Ayushman Bharat and the National Health Policy 2017 have increased accessibility and affordability. The Indian government is working to improve the country's digital healthcare infrastructure by fostering stakeholder engagement, conducting pilot tests, and developing scalable frameworks (**Aggarwal, 2023**)

## **Methodology**

### **3.1 Research Design**

The present study adopts a qualitative research design, specifically based on a systematic and descriptive literature review approach. The purpose of this methodology is to develop a comprehensive understanding of the role of Artificial Intelligence (AI) in India's public healthcare system, particularly focusing on its influence on doctor-patient relationships, clinical workflows, and professional retention. Rather than conducting primary data collection or statistical analysis, this study relies on existing scholarly literature to synthesize insights and identify emerging patterns, themes, and gaps. A qualitative approach is appropriate for this study as it allows for an in-depth exploration of

complex, context-dependent issues such as technological integration, human interaction, and workforce dynamics in healthcare (Kumar, 2023; Alraddadi, 2024).

### 3.2 Research Approach

This research follows a narrative and thematic review approach, where selected literature is critically examined and interpreted to provide a holistic understanding of the topic. The study emphasizes conceptual analysis rather than empirical measurement, aiming to integrate findings from multiple studies into a coherent framework.

The approach includes:

- Identifying key themes across studies
- Comparing and contrasting different perspectives
- Interpreting findings in the context of India's healthcare system

### 3.3 Data Sources

The study is based entirely on secondary data, collected from credible and reliable academic and professional sources. These include:

- Peer-reviewed journal articles
- Research papers
- Government reports and policy documents
- Academic databases such as PubMed, Google Scholar, and ScienceDirect

The selected literature focuses on topics such as AI in healthcare, digital health systems, employability, clinical workflows, and healthcare digitization in India (Maurya, 2026; Aggarwal, 2023).

### 3.4 Selection Criteria

To ensure the relevance and quality of the literature, the following inclusion criteria were applied:

- Studies focusing on Artificial Intelligence in healthcare
- Research related to India or comparable healthcare systems
- Articles discussing doctor–patient relationships, workflows, or workforce issues
- Publications from recent years (primarily 2021–2026)
- Peer-reviewed and credible sources

#### Exclusion criteria included:

- Studies not directly related to healthcare
- Articles lacking academic credibility
- Outdated or irrelevant publications

### 3.5 Data Collection Procedure

The data collection process involved a structured search of academic databases using keywords such as:

- “Artificial Intelligence in healthcare India”
- “AI and doctor–patient relationship”
- “AI in clinical workflows”
- “Healthcare workforce and AI”
- “Digital health systems India”

Relevant articles were screened based on titles, abstracts, and full-text reviews. Selected studies were then organized thematically to align with the objectives of the research.

### 3.6 Data Analysis Method

The study employs thematic analysis to interpret the collected literature. This involves:

1. Familiarization with data – Reading and understanding selected studies
2. Identification of themes: Grouping findings into major themes such as:
  - AI and doctor–patient relationship
  - AI and clinical workflows
  - AI and healthcare professionals
  - Professional retention
3. Synthesis of findings: Integrating insights to develop a comprehensive understanding
4. Interpretation: Drawing conclusions based on patterns and relationships observed across studies

No statistical or quantitative analysis has been conducted, as the study focuses on conceptual understanding.

### Discussion

The purpose of this literature review was to fill gaps in our knowledge of AI's function in India's public healthcare system. Included in the debate are the primary subject areas of healthcare professionals, doctor-patient interactions, clinical processes, and professional retention, as well as the integration and interpretation of important results from the evaluated research. The results show how AI may change healthcare, but they also show how difficult it is to deploy in a developing country like India.

#### 4.1 AI as a Transformative Force in India's Public Healthcare

Public healthcare in India has long struggled with issues including resource shortage, high patient loads, and healthcare access inequality; nevertheless, recent research suggests that artificial intelligence (AI) might be a game-changer in these areas (Kumar, 2023; Mehta, 2026). Predictive analytics, diagnostic instruments, and digital health platforms—all powered by artificial intelligence—have greatly enhanced the precision and efficacy of healthcare delivery. Nevertheless, research indicates that AI adoption in India is still in its early stages, mainly because of the country's insufficient data availability and digital infrastructure (Maurya, 2026). There has to be a systematic change in digital health ecosystems since this shows that AI is not yet fully used, despite its promise.

#### 4.2 Impact of AI on Doctor–Patient Relationship

The changing dynamics of the doctor-patient interaction in the age of AI is one of the study's most important conclusions. Clinical decision-making has been improved by AI's data-driven insights, which may lead to more accurate treatments and better patient outcomes (Mehta, 2026). Telemedicine and virtual assistants are two other techniques that have made healthcare more accessible and engaged with patients (Vij, 2024). Notwithstanding these advantages, there are worries in the literature about the possible dehumanization of healthcare. According to Alraddadi (2024), the traditional connection, which is based on empathy and direct contact, might be undermined by a greater dependence on technology. The emotional connection between physicians and patients may be diminished as a result of the introduction of AI as a "third actor" in healthcare interactions, which alters the dynamics of communication and trust. So, even when AI makes things more efficient, it's still crucial to have a balance between tech support and care that is focused on people.

#### 4.3 Influence of AI on Clinical Workflows

Artificial intelligence has revolutionized healthcare operations by facilitating the automation of mundane administrative processes like scheduling, data management, and documentation. The result has been an increase in operational efficiency and a decrease in the administrative load on healthcare

personnel (Alraddadi, 2024). The use of evidence-based healthcare procedures and improved diagnosis accuracy have both been made possible by decision support systems driven by AI. The results, however, show that process integration isn't without its difficulties. According to Alraddadi (2024), there have been reports of issues including alert weariness, higher cognitive load, and interruptions in communication among healthcare teams. Also, AI can't do its job well in India since there isn't enough organized and easily available medical data (Maurya, 2026). These results indicate that AI might simplify processes, but that this is conditional on well-designed systems, interoperability, and sufficient training for healthcare workers.

#### **4.4 AI and Changing Roles of Healthcare Professionals**

The use of artificial intelligence (AI) in healthcare has altered the duties and obligations of medical practitioners. Mehta (2026) states that physicians are free to concentrate on more intricate clinical duties and patient care when AI technologies help with diagnoses, data analysis, and decision-making. A new paradigm is emerging, one that encourages "augmented intelligence"—a cooperative interaction between people and technology. But there is evidence in the literature that healthcare workers are worried about their jobs, their roles being replaced, and our growing reliance on technology (Jain, 2021). More and more, people need to be able to use technology effectively and have a basic understanding of digital literacy. A lack of knowledge and trust in AI systems might lead to resistance to their adoption. Consequently, a productive corporate climate, training programs, and ongoing skill development are essential for AI integration success.

#### **4.5 AI and Professional Retention in Healthcare**

Stress, burnout, and an excessive workload all play a role in the healthcare personnel shortages plaguing India, making professional retention an urgent matter. Artificial intelligence (AI) has the ability to boost retention by streamlining operations, boosting efficiency, and assisting with decision-making (Jain, 2021). Artificial intelligence (AI) has the potential to enhance healthcare workers' work-life balance and job satisfaction by reducing administrative tasks. On the other side, some worry that AI may cause people to lose their jobs or have their responsibilities altered in the workplace. Adaptability, proficiency with technology, and a willingness to learn are becoming more important in the healthcare industry, according to the literature (Jain, 2021). Therefore, AI has a two-pronged effect on retention: on the one hand, it may lead to better working conditions, but on the other, it will push businesses to adjust their workforces to accommodate new technologies.

#### **4.6 Challenges and Barriers to AI Implementation**

Several challenges hinder the effective implementation of AI in India's public healthcare system. Key barriers identified in the literature include:

- Limited digital infrastructure and connectivity
- Lack of standardized and accessible medical data
- Low levels of digital literacy among healthcare professionals
- Ethical concerns related to data privacy, bias, and accountability
- Resistance to change and lack of trust in AI systems

Ayushman Bharat and the National Digital Health Blueprint are two programs that are trying to solve these problems by integrating digital health systems, making data more secure, and encouraging interoperability (Aggarwal, 2023). But for that to happen, the government, healthcare institutions, and digital companies all need to work together.

#### **4.7 Opportunities and Future Implications**

In spite of the obstacles, artificial intelligence has great potential for enhancing healthcare delivery in India. The use of telemedicine might increase accessibility, the precision of diagnoses, the availability of individualized treatment plans, and the efficacy of preventative healthcare initiatives (Kumar, 2023). Building inclusive, human-centered, and ethical AI systems that work in tandem with healthcare providers rather than in lieu of them is the way to go for the field's potential in the future. To guarantee long-term acceptance, efforts should focus on education, legislation, and infrastructure development.

## Conclusion

The purpose of this research was to examine how AI is affecting doctor-patient interactions, clinical processes, and the retention of medical professionals in India's public healthcare system. The research, which is based on a qualitative analysis of previous research, explains in detail how AI is changing the healthcare system and draws attention to the problems and consequences that come with it.

Improved diagnostic accuracy, predictive analytics, and administrative process optimization are just a few ways in which AI is already making a big splash in the healthcare industry. High patient loads, a shortage of staff, and inequitable access to healthcare are some of the problems that AI may help solve in India's publicly funded healthcare system, which is notoriously underfunded. Efficiency, accessibility, and patient outcomes have all been enhanced by digital health efforts and the incorporation of AI-driven solutions. The research does show, however, that there are some complicated consequences for the doctor-patient interaction as a result of AI integration. Even while AI may help in making better decisions and providing better treatment, it might also make healthcare less personal and lead to less face-to-face connection. Emphasizing the need of a balanced strategy that incorporates technology without losing human connection, it is vital to maintain trust, empathy, and effective communication.

Artificial intelligence has already shown its worth in the healthcare industry by automating mundane processes and increasing operational efficiency. Still, there are obstacles that can make its execution less than ideal, such as insufficient infrastructure, little data, and problems with system integration. Correct training, well-designed systems, and prepared organizations are the three main factors that will determine how effective AI is in enhancing processes. In addition, the research shows that new skill needs and ways of human-technology cooperation are being introduced by AI, which is changing the way healthcare professionals are employed. Healthcare personnel may be hesitant to embrace AI due to worries about job security, role shifts, and technology reliance, despite the fact that AI may reduce burden and increase job satisfaction. That is why it is crucial to back workforce adaptation with capacity-building and regular training programs.

There are advantages and disadvantages to AI in terms of professional retention. As a result of better working conditions and less burnout, it may increase retention rates. Healthcare providers may be resistant to and anxious about technological change due to the unknowns that come with it. Thus, healthcare companies' implementation and management of AI will determine its influence on retention. The research shows that artificial intelligence (AI) has the potential to greatly enhance the public healthcare system in India by making services more accessible, efficient, and high-quality. Problems with infrastructure, technology, and the workforce must be addressed in an inclusive, human-centered, and ethical manner for its integration to be effective. To make sure AI augments human knowledge rather than supplants it, stakeholders, healthcare organizations, and policymakers must cooperate.

## Recommendations

**Strengthening Digital Infrastructure:** Secure data storage, interoperable technologies, and dependable internet access should be top priorities for healthcare organizations and the government as

they work to build a strong digital infrastructure. To effectively use AI technology, infrastructure must be strengthened. This is especially true in underprivileged and rural regions where healthcare services are scarce.

**Enhancing Data Quality and Accessibility:** Accessible, high-quality data is crucial for AI systems. For this reason, it is important to work toward healthcare data standardization, enhance data gathering methods, and guarantee interoperability among systems. In order to make AI-driven healthcare solutions more efficient, it is important to promote EHRs and HIE systems, which will allow for smooth data interchange.

**Promoting Training and Skill Development:** In order to improve their technical proficiency and digital literacy, healthcare workers should have access to capacity-building programs and ongoing training. Integrating technology into clinical practice, interpreting AI-generated outputs, and proficiently using AI tools should all be training priorities. This will boost healthcare personnel' confidence and decrease opposition to AI use.

**Maintaining Human-Centered Care:** The human elements of healthcare, including empathy, communication, and trust, must be preserved as AI is integrated. Instead of trying to replace human connection, healthcare professionals should make sure that AI is a helpful tool. Ensuring that technology improves rather than reduces the doctor-patient interaction is crucial, and policies and practices should prioritize patient-centered care.

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