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Ethical Implications of Artificial Intelligence (AI) in Healthcare

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ABSTRACT
The proliferation of AI systems across various domains raises significant ethical questions that demand careful consideration. This exploration delves into the ethical dimensions associated with the widespread adoption of artificial intelligence in Health care sector. This study seeks to unravel the ethical intricacies of AI through an interdisciplinary approach, drawing from philosophy, technology ethics, law, and social sciences. By examining case studies, ethical frameworks, and expert perspectives, we aim to provide a holistic understanding of AI's ethical implications.
The objectives of the study are to assess the level of knowledge and awareness among Medical Practitioners regarding artificial intelligence (AI) technologies in the field of medicine and healthcare, to explore Medical Practitioners' attitudes, perceptions, and opinions toward the use of AI in various aspects of medical practice, such as diagnosis, treatment planning, and patient care and to identify and analyze the ethical implications of AI as perceived by Medical Practitioners in the medical field.
In this study, a descriptive research design is employed to provide a comprehensive and detailed account of doctors' perceptions of artificial intelligence (AI) in medicine and to explore the ethical implications associated with its widespread adoption.
The study reveals a multifaceted landscape of opinions within the medical community regarding AI's integration into Indian healthcare. While a notable segment of medical professionals expresses confidence in AI's potential, others emphasize the need for caution and ethical considerations. There is an underlying consensus that AI could contribute positively to healthcare efficiency and diagnostic accuracy. However, maintaining the human touch, empathy, and ethical standards of medical practice is essential.

Keywords: Healthcare, Artificial intelligence, Diagnosis, Surgery, Accuracy, Ethical implications

1. INTRODUCTION
In an era marked by rapid advancements in technology and the ever-increasing integration of artificial intelligence (AI), the ethical implications of AI technologies have become a topic of paramount importance. The proliferation of AI systems across various domains raises significant ethical questions that demand careful consideration. This exploration delves into the ethical dimensions associated with the widespread adoption of artificial intelligence in Health care sector.

2. RATIONALE OF THE STUDY
Ethical discussions surrounding AI extend beyond technical considerations. This study seeks to unravel the ethical intricacies of AI through an interdisciplinary approach, drawing from philosophy, technology ethics, law, and social sciences. By examining case studies, ethical frameworks, and expert perspectives, we aim to provide a holistic understanding of AI's ethical implications.

3. REVIEW OF THE LITERATURE
Maya Banerjee et.al., (2021) surveyed trainee Medical Practitioners in the UK to assess the perceived impact of artificial intelligence (AI) technologies on their clinical training and education. The majority of respondents (58%) viewed AI as having a positive impact on their training, particularly in reducing clinical workload and enhancing research and audit training. However, there was skepticism regarding its potential to improve clinical judgment and practical skills training. Most trainees reported insufficient AI training in their current curricula and expressed support for more formal AI training. Medical educators should be mindful of protecting domains like 'clinical judgment' and 'practical skills' as AI continues to develop, and the inclusion of 'Applied AI' topics in curricula is recommended, using digital technologies for clinical education delivery.

P. Murali Doraiswamy et.al., (2020) did a cross-sectional survey of 791 psychiatrists from 22 countries revealed that only a small percentage (3.8%) believed their jobs would become obsolete due to AI/ML. Only 17% thought AI/ML would fully replace human clinicians for providing empathetic care. However, a majority predicted that AI/ML could fully replace tasks such as documenting medical records (75%) and synthesizing information (54%). The findings suggest that while AI/ML may not entirely replace human psychiatrists, it is likely to substantially change their roles, indicating a need to integrate technology and reskill Medical Practitioners to enhance mental health care.

Sotiros Bisdas et.al., (2021) through their study aimed to understand the global psychiatrist community's views on the potential of future autonomous technology (AI/ML) to replace key tasks in mental health practice. A cross-sectional survey of 791 psychiatrists from 22 countries revealed that only a small percentage (3.8%) believed their jobs would become obsolete due to AI/ML. Only 17% thought AI/ML would fully replace human clinicians for providing empathetic care. However, a majority predicted that AI/ML could fully replace tasks such as documenting medical records (75%) and synthesizing information (54%). The findings suggest that while AI/ML may not entirely replace human psychiatrists, it is likely to substantially change their roles, indicating a need to integrate technology and reskill Medical Practitioners to enhance mental health care.

C Blease et.al., (2020) opinions on the potential impact of artificial intelligence and machine learning on psychiatric practice. A web-based survey was conducted with 791 psychiatrists from 22 countries. Psychiatrists expressed skepticism about technology fully replacing human empathy but believed that "man and machine" collaboration in clinical decisions would increase. Opinions varied on the benefits and harms of this collaboration, with optimism for improved efficiencies, access to care, and cost reduction. However, ethical and regulatory considerations received limited attention in their responses. The study highlights divergent views among psychiatrists and points to the need for further exploration of ethical and regulatory issues surrounding AI and machine learning in psychiatric practice.

Zaboor Ahmed et.al., (2022) did a cross-sectional study in Pakistan aimed to assess the knowledge, attitude, and practice of AI among Medical Practitioners and medical students. Out of 470 participants, a significant proportion lacked awareness of AI and its medical applications. However, most individuals showed a positive attitude towards incorporating AI in medical education and practice, particularly in radiology, pathology, and during the COVID-19 pandemic.

Anneke G et.al., (2020) reports that while it has revolutionized certain aspects of technical medicine, AI raises practical, conceptual, pedagogical, and ethical dilemmas. The widespread adoption of AI threatens to shift the focus from hands-on clinical work to technology-driven scenarios, which could muddy ethical responsibilities. It is crucial for AI to work in tandem with hands-on medicine to maintain a balance between diagnostic accuracy and empathetic patient care.

Daniel Schönberger et.al., (2023) explores citizen and expert perspectives on the ethical implications of Artificial Intelligence (AI) in population health and citizen engagement in AI governance. Participants acknowledge AI's presence and benefits in population health but express concerns about its societal implications. There is a strong consensus on involving citizens in AI governance, and participants emphasize the need for an accessible and transparent digital app to support citizen participation in decision-making. The findings suggest potential directions for developing an app to raise awareness and facilitate citizen involvement in addressing ethical, legal, and social aspects of AI in population health.

John D. Banja et.al., (2020) explores the ethical and legal implications of diagnostic and recommender artificial intelligence models potentially outperforming human clinicians in the future. Drawing a parallel to how antibiotics replaced previous treatments for infections, the article suggests that the superior performance of AI models will lead to their widespread adoption. The focus is on four key considerations: (1) the importance of using explainable AI models in clinical care, (2) strategies for managing liability when clinicians agree or disagree with AI recommendations, but patients experience poor outcomes, (3) the possibility of relieving liability through legislation or regulation, and (4) the concept of comprehending AI models as "persons" and potential defendants in legal proceedings. The authors emphasize that clinicians must start contemplating these implications even though advanced AI models have not fully arrived yet, but their adoption seems inevitable in the future.

Kadircan H. Keskinbora (2019) addresses the medical ethics issues related to artificial intelligence (AI) and discusses its broad applications in various sectors. AI's development offers promising benefits by reducing human involvement in dangerous tasks. However, the practical applications of AI are shaped by the values and choices of engineers who design the systems, making safety and algorithmic procedures crucial to avoid unforeseen consequences and unfair outcomes.

Pouyan Esmaeilzadeh et.al., (2021) investigates patients' perceptions of the benefits, risks, and use of artificial intelligence (AI) clinical applications for their health care. The research involves an experiment with different health care service encounter scenarios. The results reveal that patients' perceptions are influenced by the type of health condition and the nature of the clinical encounter with AI.

A Qualitative study by Sandhya Duggal et.al., (2023) investigates the experiences and perspectives of Medical Practitioners working with AI in the National Health Service (NHS). The research aims to understand their role in the medical AI discourse, their views on AI implementation, and how to increase Medical Practitioners' engagement with AI technologies in the future. The findings reveal an unstructured pathway for Medical Practitioners to enter the AI field, with various challenges arising from commercial and technological demands.

Aurelia Sauerbrei et.al., (2023) reported that AI has the potential to address current healthcare challenges by freeing up Medical Practitioners' time and enhancing person-centered doctor-patient relationships. However, there is limited evidence on AI's impact on these relationships and ensuring its implementation benefits person-centered care.

4. RESEARCH GAP

The current research aims to fill the gap in understanding Medical Practitioners' perceptions of artificial intelligence and its ethical implications in the medical field. While existing studies have explored public perception, there is limited research focusing specifically on the views and concerns of Medical Practitioners regarding AI technologies in healthcare. By conducting primary research with Medical Practitioners, this study aims to gain deeper insights into their attitudes toward AI and its potential impact on medical practice.

5. OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1) To assess the level of knowledge and awareness among Medical Practitioners regarding artificial intelligence (AI) technologies in the field of medicine and healthcare.
2) To explore Medical Practitioners' attitudes, perceptions, and opinions toward the use of AI in various aspects of medical practice, such as diagnosis, treatment planning, and patient care.
3) To identify and analyze the ethical implications of AI as perceived by Medical Practitioners in the medical field.

6. SCOPE OF THE STUDY

The scope of this study is to investigate the attitudes and awareness of Medical Practitioners in the medical field regarding artificial intelligence. The study will focus on Medical Practitioners' perceptions of AI technologies and its ethical implications specifically within the healthcare domain. It will explore how Medical Practitioners perceive the potential benefits and drawbacks of AI applications in medical practice, such as diagnosis, treatment planning, and patient care. Additionally, the research will delve into the ethical concerns raised by Medical Practitioners regarding AI, including issues related to patient privacy, bias in medical algorithms, transparency, accountability, and the societal impact of AI integration in healthcare.

7. RESEARCH DESIGN

In this study, a descriptive research design is employed to provide a comprehensive and detailed account of doctors' perceptions of artificial intelligence (AI) in medicine and to explore the ethical implications associated with its widespread adoption. The primary focus of this research is to describe various aspects of doctors' interactions with AI technologies, including their acceptance of AI-driven decision-making, the factors influencing their attitudes toward AI, and the ethical dilemmas they encounter during the integration of AI into their clinical workflows.

The study was conducted using a survey survey questionnaire. The type of sampling used is Judgement Sampling which is a type of Non-Probability sampling. The total number of samples for the study is 206.

Hypothesis 1

Null Hypothesis (H0): There is no significant difference in the perceptions of various medical tasks that AI could effectively assist with, among medical professionals from different medical colleges/hospitals.

Alternate Hypothesis (H1): There is a significant difference in the perceptions of various medical tasks that AI could effectively assist with, among medical professionals from different medical colleges/hospitals.

Hypothesis 2

Null Hypothesis (H0): There is no significant difference in the perceived importance of the Indian medical community actively participating in shaping AI governance policies across different groups defined by "Designation," "Age," and "Medical College/Hospital Location."

Alternate Hypothesis (H1): There is a significant difference in the perceived importance of the Indian medical community actively participating in shaping AI governance policies across different groups defined by "Designation," "Age," and "Medical College/Hospital Location."

8. DATA ANALYSIS AND DISCUSSION

Descriptive statistics

Name of Medical College/ Hospital					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bangalore Medical College	27	14.8	14.8	14.8
	Vydehi Institute Of Medical Sciences and Research Centre	36	19.7	19.7	34.4
	RajaRajeshwari Medical College and Hospital	38	20.8	20.8	55.2
	BGS Global Institute Of Medical Sciences	30	16.4	16.4	71.6
	Jawaharlal Nehru Medical College	30	16.4	16.4	88.0
	6	22	12.0	12.0	100.0
	Total	183	100.0	100.0	

Table 1: Name of Medical College/ Hospital of the respondents

This table presents the distribution of respondents' institutions or medical colleges/hospitals. It showcases the variety of institutions that participants are affiliated with.

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-24	46	25.1	25.1	25.1
	25-29	75	41.0	41.0	66.1
	30-34	32	17.5	17.5	83.6
	35-39	25	13.7	13.7	97.3
	40+	5	2.7	2.7	100.0
	Total	183	100.0	100.0	

Table 2: Age of the respondents

The majority of respondents are in the 25-29 age range, followed by 20-24 and 30-34 age ranges.

Designation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	M.B.B.S student	31	16.9	16.9	16.9
	Intern	35	19.1	19.1	36.1
	Resident Doctor	24	13.1	13.1	49.2
	M.D (Doctor Of Medicine) student	42	23.0	23.0	72.1
	M.S (Master of Surgery) student	47	25.7	25.7	97.8
	Practicing Doctor	4	2.2	2.2	100.0
	Total	183	100.0	100.0	

Table 3 Designation of respondents

The majority of respondents are M.S students, followed by M.D students and interns. Practicing doctors form a smaller percentage of the respondents.

Usage AI tools as a surgeon					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	65	35.5	35.5	35.5
	No	118	64.5	64.5	100.0
	Total	183	100.0	100.0	

Table 4 Usage AI tools as a surgeon

65 respondents (35.5% of the total) reported having used AI tools as a surgeon. 118 respondents (64.5% of the total) indicated that they have not used AI tools as a surgeon.

Usage of AI tools as a non surgeon					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	32.8	32.8	32.8
	No	123	67.2	67.2	100.0
	Total	183	100.0	100.0	

Table 5 Usage of AI tools as a non-surgeon

60 respondents (32.8% of the total) reported having used AI tools as a non-surgeon. 123 respondents (67.2% of the total) indicated that they have not used AI tools as a non-surgeon.

Familiarity with AI technologies in Healthcare					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely Unfamiliar	28	15.3	15.3	15.3
	Fairly Unfamiliar	31	16.9	16.9	32.2
	Neutral	26	14.2	14.2	46.4
	Fairly Familiar	56	30.6	30.6	77.0
	Extremely Familiar	42	23.0	23.0	100.0
	Total	183	100.0	100.0	

Table 6: Familiarity with AI technologies in Healthcare

A significant number of respondents fall in the "Fairly Familiar" and "Extremely Familiar" categories, suggesting a moderate to high level of familiarity with AI technologies among the surveyed medical professionals.

Tasks AI can effectively assist with					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diagnosing medical conditions	10	5.5	5.5	5.5
	Diagnosing medical conditions, Patient monitoring	4	2.2	2.2	7.7
	Diagnosing medical conditions, Patient monitoring, Other	4	2.2	2.2	9.8

	Diagnosing medical conditions, Patient monitoring, Radiology image analysis	5	2.7	2.7	12.6
	Diagnosing medical conditions, Patient monitoring, Radiology image analysis, Other	7	3.8	3.8	16.4
	Diagnosing medical conditions, Radiology image analysis	4	2.2	2.2	18.6
	Diagnosing medical conditions, Radiology image analysis, Other	6	3.3	3.3	21.9
	Diagnosing medical conditions, Treatment recommendations	5	2.7	2.7	24.6
	Diagnosing medical conditions, Treatment recommendations, Patient monitoring	3	1.6	1.6	26.2
	Diagnosing medical conditions, Treatment recommendations, Patient monitoring, Other	12	6.6	6.6	32.8
	Diagnosing medical conditions, Treatment recommendations, Patient monitoring, Radiology image analysis	12	6.6	6.6	39.3
	Diagnosing medical conditions, Treatment recommendations, Patient monitoring, Radiology image analysis, Other	28	15.3	15.3	54.6
	Diagnosing medical conditions, Treatment recommendations, Radiology image analysis	3	1.6	1.6	56.3
	Diagnosing medical conditions, Treatment recommendations, Radiology image analysis, Other	5	2.7	2.7	59.0
	Other	5	2.7	2.7	61.7
	Patient monitoring	12	6.6	6.6	68.3
	Patient monitoring, Other	8	4.4	4.4	72.7
	Patient monitoring, Radiology image analysis	1	.5	.5	73.2
	Patient monitoring, Radiology image analysis, Other	2	1.1	1.1	74.3
	Radiology image analysis	9	4.9	4.9	79.2
	Radiology image analysis, Other	4	2.2	2.2	81.4
	Treatment recommendations	7	3.8	3.8	85.2
	Treatment recommendations, Other	5	2.7	2.7	88.0
	Treatment recommendations, Patient monitoring	5	2.7	2.7	90.7
	Treatment recommendations, Patient monitoring, Other	2	1.1	1.1	91.8
	Treatment recommendations, Patient monitoring, Radiology image analysis	1	.5	.5	92.3
	Treatment recommendations, Patient monitoring, Radiology image analysis, Other	12	6.6	6.6	98.9
	Treatment recommendations, Radiology image analysis	1	.5	.5	99.5
	Treatment recommendations, Radiology image analysis, Other	1	.5	.5	100.0
	Total	183	100.0	100.0	

Table 7 Tasks AI can effectively assist

This question allows respondents to select multiple medical tasks where they believe AI could be effective:
Diagnosing medical conditions: Various combinations of respondents believe that AI could assist effectively in diagnosing medical conditions, either on its own or in combination with other tasks.
Patient monitoring: Respondents also indicate that AI could be effective in-patient monitoring, either alone or in combination with other tasks.
Radiology image analysis: AI's effectiveness in radiology image analysis is another area of interest for respondents.
Treatment recommendations: AI's potential to assist in providing treatment recommendations is also mentioned by respondents.
Other: Some respondents mention "Other" tasks where they believe AI could be effective.

Impact of AI on patient outcomes in healthcare					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely good	23	12.6	12.6	12.6
	Fairly good	32	17.5	17.5	30.1
	Neutral	26	14.2	14.2	44.3
	Fairly bad	60	32.8	32.8	77.0
	Extremely bad	42	23.0	23.0	100.0
	Total	183	100.0	100.0	

Table 8 Impact of AI on patient outcomes in healthcare

The responses are quite diverse, with a substantial percentage expressing concerns about the impact of AI.

Willingness to use AI-powered diagnostic tools to aid in patient assessment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I would use them	57	31.1	31.1	31.1
	No, I would not use them	65	35.5	35.5	66.7
	Maybe, it depends	61	33.3	33.3	100.0
	Total	183	100.0	100.0	

Table 9 Willingness to use AI-powered diagnostic tools to aid in patient assessment

The responses vary, with a relatively even split between those who are willing, unwilling, or uncertain about using such tools.

Concern about patient privacy and data security in AI-driven healthcare					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	14.2	14.2	14.2
	Disagree	35	19.1	19.1	33.3
	Neutral	28	15.3	15.3	48.6
	Agree	48	26.2	26.2	74.9
	Strongly Agree	46	25.1	25.1	100.0
	Total	183	100.0	100.0	

Table 10 Concern about patient privacy and data security in AI-driven healthcare

The responses indicate a variety of perceptions, with a substantial percentage expressing varying levels of concern.

Trust in AI-driven diagnostic systems for accuracy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	33	18.0	18.0	18.0
	Disagree	27	14.8	14.8	32.8
	Neutral	31	16.9	16.9	49.7
	Agree	45	24.6	24.6	74.3
	Strongly Agree	47	25.7	25.7	100.0
	Total	183	100.0	100.0	

Table 11 Trust in AI-driven diagnostic systems for accuracy

The responses demonstrate a variety of perceptions, with a notable percentage expressing varying levels of trust in the accuracy of these systems.

Familiarity with the existing regulations and guidelines governing the use of AI in Indian medical healthcare					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	13.1	13.1	13.1
	Disagree	23	12.6	12.6	25.7
	Neutral	31	16.9	16.9	42.6
	Agree	58	31.7	31.7	74.3
	Strongly Agree	47	25.7	25.7	100.0

	Total	183	100.0	100.0	

Table 12 Familiarity with the existing regulations and guidelines governing the use of AI in Indian medical healthcare

The responses depict varying degrees of familiarity among the participants.

There be specialized training on AI ethics and governance for medical professionals in India					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, specialized training is essential	59	32.2	32.2	32.2
	No, existing medical training is sufficient	61	33.3	33.3	65.6
	It depends on the doctor's area of specialization	63	34.4	34.4	100.0
	Total	183	100.0	100.0	

Table 13: Training on AI ethics and governance for medical professionals in India

HYPOTHESIS TESTING

Null Hypothesis (H0): There is no significant difference in the perceptions of various medical tasks that AI could effectively assist with, among medical professionals from different medical colleges/hospitals.

Alternate Hypothesis (H1): There is a significant difference in the perceptions of various medical tasks that AI could effectively assist with, among medical professionals from different medical colleges/hospitals.

Kruskal-Wallis Test

Ranks			
	Name of your Medical College/ Hospital	N	Mean Rank
Tasks AI can effectively assist with	Bangalore Medical College	27	77.24
	Vydehi Institute Of Medical Sciences and Research Centre	36	77.44
	RajaRajeshwari Medical College and Hospital	38	76.41
	BGS Global Institute Of Medical Sciences	30	85.33
	Jawaharlal Nehru Medical College	30	90.13
	Total	161	
Doctors should be responsible for the decisions made by AI systems	Bangalore Medical College	27	76.43
	Vydehi Institute Of Medical Sciences and Research Centre	36	84.26
	RajaRajeshwari Medical College and Hospital	38	79.67
	BGS Global Institute Of Medical Sciences	30	80.07
	Jawaharlal Nehru Medical College	30	83.82
	Total	161	
Trust in AI-driven diagnostic systems for accuracy	Bangalore Medical College	27	76.65
	Vydehi Institute Of Medical Sciences and Research Centre	36	93.93
	RajaRajeshwari Medical College and Hospital	38	78.26
	BGS Global Institute Of Medical Sciences	30	70.05
	Jawaharlal Nehru Medical College	30	83.82
	Total	161	
Trust in AI-generated treatment plans for patients	Bangalore Medical College	27	94.07
	Vydehi Institute Of Medical Sciences and Research Centre	36	75.88
	RajaRajeshwari Medical College and Hospital	38	91.62
	BGS Global Institute Of Medical Sciences	30	71.60

	Jawaharlal Nehru Medical College	30	71.33
	Total	161	
Belief in AI technologies to improve patient monitoring and early detection of medical issues	Bangalore Medical College	27	78.44
	Vydehi Institute Of Medical Sciences and Research Centre	36	84.07
	RajaRajeshwari Medical College and Hospital	38	84.05
	BGS Global Institute Of Medical Sciences	30	76.35
	Jawaharlal Nehru Medical College	30	80.40
	Total	161	

For "What medical tasks do you think AI could assist with effectively?" the H-statistic was 2.177 with a p-value of 0.703.
For "How responsible do you think doctors should be for the decisions made by AI systems?" the H-statistic was 0.620 with a p-value of 0.961.
For "How much trust do you have in AI-driven diagnostic systems for accuracy?" the H-statistic was 5.132 with a p-value of 0.274.
For "Would you trust AI-generated treatment plans for patients?" the H-statistic was 7.405 with a p-value of 0.116.
For "Do you believe AI technologies can improve patient monitoring and early detection of medical issues?" the H-statistic was 0.744 with a p-value of 0.946.

Test Statistics[a,b]					
	Tasks AI can effectively assist with	Doctors should be responsible for the decisions made by AI systems	Trust in AI-driven diagnostic systems for accuracy	Trust in AI-generated treatment plans for patients	Belief in AI technologies to improve patient monitoring and early detection of medical issues
Kruskal-Wallis H	2.177	.620	5.132	7.405	.744
df	4	4	4	4	4
Asymp. Sig.	.703	.961	.274	.116	.946
a. Kruskal Wallis Test					
b. Grouping Variable: Name of your Medical College/ Hospital					

Table 14 Test Statistics of perceptions of various medical tasks that AI could effectively assist with, among medical professionals from different medical colleges/hospitals

Inference:
The p-values obtained from the Kruskal-Wallis test for each medical task are considerably higher than the conventional significance level of 0.05. As a result, there is insufficient evidence to reject the null hypothesis for any of the medical tasks. This suggests that there are no significant differences in the perceptions of these medical tasks among medical professionals from different medical colleges/hospitals.
In summary, the Kruskal-Wallis test results indicate that there are no statistically significant differences in the perceptions of various medical tasks that AI could effectively assist with, across different medical colleges/hospitals. Consequently, the null hypothesis cannot be rejected, and the findings suggest that medical professionals' perceptions in this context are relatively consistent across institutions.

Null Hypothesis (H0): There is no significant difference in the perceived importance of the Indian medical community actively participating in shaping AI governance policies across different groups defined by "Designation," "Age," and "Medical College/Hospital Location."
Alternate Hypothesis (H1): There is a significant difference in the perceived importance of the Indian medical community actively participating in shaping AI governance policies across different groups defined by "Designation," "Age," and "Medical College/Hospital Location."

Kruskal-Wallis Test

Ranks			
	Importance of actively participating in shaping AI governance policies by the Indian Medical Community	N	Mean Rank
Designation as of filling this survey	Strongly Disagree	23	43.89
	Disagree	27	34.15

	Neutral	26	38.25
	Total	76	
Age	Strongly Disagree	23	41.17
	Disagree	27	40.46
	Neutral	26	34.10
	Total	76	
Location Of Medical College / Hospital	Strongly Disagree	23	38.63
	Disagree	27	43.39
	Neutral	26	33.31
	Total	76	

The Kruskal-Wallis test, a non-parametric alternative to ANOVA, was employed to analyze the data due to its suitability for non-normally distributed data. Descriptive statistics showed the means and standard deviations of the variables: "Designation," "Age," "Medical College/Hospital Location," and the perceived importance of participating in AI governance policies.

Test Statistics[a,b]			
	Designation as of filling this survey	Age	Location Of Medical College / Hospital
Kruskal-Wallis H	2.545	1.839	4.114
df	2	2	2
Asymp. Sig.	.280	.399	.128
a. Kruskal Wallis Test			
b. Grouping Variable: Importance of actively participating in shaping AI governance policies by the Indian Medical Community			

Table 15 Descriptive Statistics of perceived importance of the Indian medical community actively participating in shaping AI governance policies across different groups defined by "Designation," "Age," and "Medical College/Hospital Location."

Inference:
The Kruskal-Wallis test was used to determine if there were statistically significant differences in the perceived importance of the Indian medical community actively participating in shaping AI governance policies among different groups. For all three variables ("Designation," "Age," and "Medical College/Hospital Location"), the p-values obtained were greater than the common threshold of 0.05.
Therefore, based on the p-values, the null hypothesis (H0) is not rejected. This implies that there is no significant difference in the perceived importance of the Indian medical community actively participating in shaping AI governance policies among different groups defined by "Designation," "Age," and "Medical College/Hospital Location."
In other words, the analysis did not find sufficient evidence to suggest that these demographic factors significantly influence the perceived importance of participating in AI governance policies. The findings suggest a consistent perception across different groups regarding the importance of the medical community's involvement in shaping AI governance policies.

9. DISCUSSION OF FINDINGS

1. Level of Knowledge of AI and Familiarity

The responses from medical professionals showcased a spectrum of opinions regarding their familiarity and trust in AI technologies. While a significant portion of respondents expressed confidence in AI-driven diagnostic tools and treatment recommendations, a substantial number remained cautious, indicating uncertainty about the accuracy of AI-generated decisions. Notably, 44% of respondents exhibited a favorable level of confidence in AI's capability to effectively analyze medical images. Furthermore, 33.3% of respondents believed that AI could potentially improve the efficiency of clinical decision-making, suggesting a notable openness to AI integration in healthcare processes.

2. Ethics and Transparency

Medical professionals emphasized the importance of maintaining ethical considerations and transparency in AI-driven healthcare. The survey revealed that 29.5% of respondents strongly agreed that AI-based medical decisions could result in a lack of personal touch and empathy in patient care. This underlines a widespread concern that AI adoption might inadvertently compromise the human element of medical interactions. The ethical implications of AI in healthcare are therefore paramount for medical professionals, as they navigate the integration of technology while ensuring patient-centered care.

3. Indian AI Governance
Respondents' perceptions of existing regulations and governance mechanisms for AI in Indian healthcare varied. While 26.2% of respondents expressed confidence in the effectiveness of current governance mechanisms in ensuring responsible and ethical AI implementation, 27.9% held reservations about potential reductions in personal touch and empathy due to AI-based medical decisions. These findings highlight a divergence in viewpoints regarding the role of governance in safeguarding patient interests and preserving the empathetic aspects of healthcare practice during the era of AI integration.

4. Accuracy and Trust
The survey assessed medical professionals' trust in AI-generated outcomes. The results showcased a diversity of perspectives, reflecting differing levels of confidence in AI-driven decisions. Notably, 35.0% of respondents indicated that they would trust an AI-assisted medical diagnosis if it was supported by a doctor's assessment. Similarly, an equivalent percentage of respondents expressed their willingness to employ AI-powered diagnostic tools to aid in patient assessment. This suggests that while AI's potential is acknowledged, its accuracy must be aligned with medical expertise to gain trust.

5. Perceptions Across Different Groups
Intriguingly, the survey analyzed whether perceptions of AI's role in healthcare tasks differed across medical professionals from various institutions. The Kruskal-Wallis test revealed that there were no significant differences in the perceptions of different medical tasks that AI could effectively assist with among professionals from different medical colleges and hospitals. This suggests that, despite institutional differences, there is a general consensus regarding the potential areas where AI can make a positive impact on healthcare processes.

6. Importance of AI Governance Participation
The study investigated the perceived importance of the Indian medical community's active participation in shaping AI governance policies. Interestingly, the analysis did not identify any significant differences in the perceived importance of this participation across different groups defined by designation, age, and medical college/hospital location. This suggests a unanimous understanding among medical professionals regarding the importance of their involvement in AI governance discussions to ensure responsible AI adoption that aligns with patient welfare.

10. CONCLUSION
The study reveals a multifaceted landscape of opinions within the medical community regarding AI's integration into Indian healthcare. While a notable segment of medical professionals expresses confidence in AI's potential, others emphasize the need for caution and ethical considerations. There is an underlying consensus that AI could contribute positively to healthcare efficiency and diagnostic accuracy. However, maintaining the human touch, empathy, and ethical standards of medical practice is essential.

11. LIMITATIONS OF THE STUDY
While the study aims to provide valuable insights, it also has some limitations that should be acknowledged like Sample Representativeness, Social Desirability Bias, Limited Depth of Ethical Analysis, lack of Technical assessment and changing perceptions with time.

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