International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675
Frequency: Bi-Monthly
Available online on: https://ijmpr.in/

Original Article

Evaluating the Impact of Electronic Medical Records on Healthcare Delivery System

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Received: 05-11-2025
Accepted: 01-12-2025
Available online: 12-12-2025

ABSTRACT

This review examines the impact of electronic medical records on healthcare delivery, highlighting the benefits and challenges associated with their use.

Keywords*:EMR (Electronic Medical Records), EHR (Electronic Health Record), IRB (Institutional Research Board)*

INTRODUCTION

Electronic Medical Records (EMRs) play a crucial role in modern healthcare by streamlining the organization, storage, and retrieval of patient data, reducing manual workload, and enhancing the accuracy and accessibility of medical information. They enable quick access to complete patient histories, improve visualization of health trends, and support collaborative, evidence-based care. Unlike traditional paper-based records, which are prone to errors, misplacement, and limited sharing, EMRs offer secure, easily shareable, and integrated digital solutions that connect healthcare providers, administrative staff, patients, researchers, and public health officials. EMRs bring several advantages, including improved data accuracy, reduced duplication of tests, and real-time access to medical information, though challenges such as high implementation costs, training needs, and data security risks remain. Looking ahead, EMRs aim to achieve greater interoperability, integrate AI-driven predictive healthcare, empower patients through secure digital access, and connect with wearable devices and Iot technologies, ultimately fostering a more patient-centered and efficient healthcare ecosystem.

THESIS REVIEWS

1. Title: A study of evaluating the impact of electronic medical records on healthcare delivery system
    a. This study examines the effect of electronic health record (EHR) digitalization on healthcare facility operational efficiency in india, focusing on the SmartCare system. It reveals that EHRs improve access to patient information, streamline workflows, reduce documentation errors, and enhance communication among healthcare providers. However, challenges such as limited resources, staff resistance, privacy concerns, and integration difficulties hinder full adoption. The research recommends improved funding, staff training, and robust change management to maximize the benefits of EHRs in low-resource settings.

2. Nurses' perceptions about and confidence in using an electronic medical record system
    a. This thesis focuses on nurses' perceptions and confidence in using Electronic Medical Record (EMR) systems within a hospital setting in Muscat, Oman. It explores how factors such as experience, training, and feedback influence nurses' confidence and usability of EMRs. The study found that while most nurses acknowledged the importance of EMRs in improving patient care and integrating into their daily routines, many lacked prior experience and sufficient training. Confidence was higher among nurses with longer exposure to EMRs, whose suggestions for improvements were considered, and when system data were updated and relevant. The research emphasizes the need for ongoing training, system customization, and active nurse involvement to enhance EMR adoption and improve healthcare delivery.

3. Assessment of factors influencing nurses acceptance of electronic medical record in a large hospital
a. This thesis investigates factors influencing nurses' acceptance of Electronic Medical Records (EMRs) in hospital using the Technology Acceptance Model (TAM). It highlights how perceived usefulness, ease of use, system quality, IT support, and management engagement affect nurses' willingness to adopt EMRs. The study surveyed nursing staff and found a strong positive correlation between system quality, top management support, and nurses' perceptions, leading to better acceptance of EMRs. Demographics such as education level, experience, and computer literacy also influenced acceptance. The findings emphasize the importance of user-friendly systems, adequate training, and supportive organizational culture to enhance EMR adoption, ultimately improving patient care quality.

4. Examining the implementation challenges and benefits of electronic health records (EHR) systems in large hospital settings
a. This thesis examines the implementation challenges and benefits of Electronic Health Records (EHR) systems in large Indian hospital settings. It highlights how EHRs improve patient care, clinical decision-making, workflow efficiency, and healthcare coordination while reducing errors and redundant tests through tools like Clinical Decision Support (CDS), Computerized Physician Order Entry (CPOE), and Health Information Exchange (HIE). However, it also identifies major challenges, including high initial costs, technical complexities, staff resistance, inadequate training, and security and privacy concerns. Using quantitative research with structured surveys and structural equation modeling, the study reveals that staff training, organizational support, and robust data protection measures are crucial for maximizing the perceived benefits and minimizing risks. It concludes that while EHR implementation faces cultural, technological, and organizational hurdles, addressing these proactively can lead to sustainable improvements in healthcare delivery and patient outcomes in India.

METHODOLOGY

Aim:

a. To Present the EMR [Electronic Medical Records] In healthcare system. it also depicts the errors and limitations.

Objectives:

a. To evaluate EMR patients, whether EMR reduce time.
b. Improve quality of care that access how EMRs enhance patient outcomes reduce medical errors, and promote evidence –based medicine.
c. Enhance patient safety by evaluate the impact of EMRs on reducing adverse events, medication errors and improving patient safety.
d. Increase efficiency by analyze how EMRs streamline clinical workflows reduce paperwork, and improve productivity.
e. Improve accessibility and coordination that examine how EMRs facilitate sharing of patient information among healthcare providers ,improving continuity of care
f. Reduce costs by investigate the financial impact of EMRs on healthcare delivery ,including reduced administrative costs and improved resource allocation

Research Method:

a. The study population comprises healthcare professionals, including doctors, nurses, and administrative staff, working in large hospital settings where EHR systems are implemented. Participants with prior knowledge of EHR systems will be recruited using a purposive sampling strategy. The sample size is determined to be 350 participants to ensure adequate representation and statistical power.

Data collection:

a. Data will be collected using a structured questionnaire designed to capture information on both the challenges and benefits associated with EHR system implementation. Demographics, EHR system utilisation, perceived obstacles, and perceived advantages are all included in the questionnaire. Depending on participant choices and

accessibility, both online and paper-based questionnaires will be used for data collection. Participants will get guarantees about the privacy and anonymity of their answers Survey overview:

ETHICAL CONSIDERATION

a. Ethical approval from the relevant Ethics Committee, institutional research board (IRB) Will be obtained before data collection begins.
b. Prior to their Involvement In the research each subject will provide their Informed Permission.
c. The freedom to withdraw from the study at any time will be communicated to participants.
d. Throughout the study procedure, precautions will be taken to guarantee participant data privacy and confidentiality.

RESULT ANALYSIS

1. Analysis- doctors

Table:1.1 Frequency distribution of variables among the doctors

Question	Option	Frequency	Percentage
Easy to use	Very easy	49	51.0
	Somewhat easy	33	34.4
	Neutral	9	9.4
	Somewhat difficult	4	4.2
	Very difficult	1	1.0
Frequency of using	Multiple times per hour	4	4.2
	Several times a day	33	34.4
	Once or twice a day	33	34.4
	A few times a week	26	27.1
Usability	Very user-friendly	36	37.5
	Somewhat user-friendly	44	45.8
	Neutral	7	7.3
	Somewhat difficult to use	9	9.4
Primary Challenges	Lack of training	50	52.1
	Technical issues (e.g., slow system, bugs)	23	24.0
	Resistance from staff	18	18.8
	Difficulty in data entry or retrieval	5	5.2
Productivity	Significantly increased productivity	52	54.2
	Somewhat increased productivity	34	35.4
	No change in productivity	8	8.3
	Somewhat decreased productivity	2	2.1
Technical Support	Very adequate	26	27.1
	Somewhat adequate	48	50.0
	Neutral	18	18.8
	Somewhat inadequate	3	3.1
	Very inadequate	1	1.0
Data security	Very confident in data security	35	36.5
	Somewhat confident in data security	48	50.0
	Neutral	8	8.3
	somewhat concerned in data security	4	4.2
	Very concerned about data security	1	1.0
ROI	Very high return on investment	32	33.3
	Somewhat high return on investment	24	25.0
	Neutral	32	33.3
	Somewhat low return on investment	7	7.3
	Very low return on investment	1	1.0
Interaction with patients	Significantly improved interactions	49	51.0
	Somewhat improved interactions	40	41.7
	No change in interactions	5	5.2
	Somewhat hindered interactions	2	2.1
Quality of care	Significantly improved quality of care	52	54.2
	Somewhat improved quality of care	38	39.6
	No change in quality of care	2	2.1
	Somewhat decreased quality of care	2	2.1
	Significantly decreased quality of care	2	2.1

The above table shows that the Majority (85.4%) of the participants rated EMRs as very easy or somewhat easy.Only 5.2% found them difficult. It indicates EMRs are broadly accessible and easy to use, which supports adoption.

Then Most of the respondents were use EMRs daily (68.8%), with 27.1% using them a few times a week. It represents that EMRs are integrated into routine clinical workflows, showing strong reliance.

Majority of the participants (83.3%)were responded EMRs as very or somewhat user-friendly. It implicates that Usability is high, however ~9% still felt difficult, indicating room for improvement.

More than half of the participantsratedthe Lack of training (52.1%) is the top barrier, followed by technical issues (24%).

89.6% of the doctors reported productivity gains (significant or somewhat). Most of the participants were respond (77.1%) technical support as adequate or very adequate , but ~22% remain neutral or dissatisfied.

Majority of the doctors (86.5%)expressed confidence in data security.It shows that High data security in EMRs for safeguarding patient information, reinforcing transparency and accountability.

33.3% of the doctors reported very high ROI, but another 33.3% were neutral.Itrepresents Financial benefits are recognized by many of the doctors.

92.7% reported improved interactions (significant or somewhat) in the patients.EMRs enhance patient engagement and communication.93.8% reported improved quality of care.Itreveals that EMRs contribute to better healthcare outcomes.

2.Analysis-Nurses

Table2.1:Frequency distribution of variables

Question	Option	Frequency	Percentage
Easy to use	Very easy	29	29.0
	Somewhat easy	54	54.0
	Neutral	9	9.0
	Somewhat difficult	8	8.0
Frequency of using	Multiple times per hour	5	5.0
	Several times a day	26	26.0
	Once or twice a day	19	19.0
	A few times a week	46	46.0
	Rarely or never	4	4.0
Usability	Very user-friendly	39	39.0
	Somewhat user-friendly	29	29.0
	Neutral	16	16.0
	Somewhat difficult to use	15	15.0
	Very difficult to use	1	1.0
Integration of EMR	Very well integrated	28	28.0
	Somewhat integrated	48	48.0
	Neutral	9	9.0
	Somewhat unintegrated	13	13.0
	Not integrated at all	2	2.0
Patients care	Significantly supports patient care	36	36.0
	Somewhat supports patient care	51	51.0
	Neutral	7	7.0
	Somewhat hinders patient care	6	6.0
Reliability	Very reliable	35	35.0
	Somewhat reliable	48	48.0
	Neutral	8	8.0
	Somewhat unreliable	8	8.0
	Very unreliable	1	1.0
Reducing documentation errors	Very effective	31	31.0
	Somewhat effective	55	55.0
	Neutral	8	8.0
	Somewhat ineffective	6	6.0
Reducing Misidentification error	Significant reduction	38	38.0
	Somewhat reduced	52	52.0

	No change	1	1.0
	Significant increase	9	9.0
Reduced paper	Strongly agree	12	12.0
	Agree	74	74.0
	Neutral	7	7.0
	Disagree	5	5.0
	Strongly disagree	2	2.0
Overall satisfaction	Very satisfied	25	25.0
	Somewhat satisfied	55	55.0
	Neutral	16	16.0
	Somewhat dissatisfied	3	3.0
	Very dissatisfied	1	1.0

From the table 2.1 ,Most participants found the system easy to use, with 83% rating ease of use as very or somewhat easy, and nearly half reported using the EMR a few times a week or more frequently.

Usability was generally well-rated, with 68% describing the system as very or somewhat user-friendly, though a small portion (16%) reported some difficulty.

EMR integration into existing workflows was also viewed favorably, with 76% indicating very or somewhat integrated, while only 15% felt it was unintegrated.

Perceptions of clinical impact were highly positive: 87% stated the EMR significantly or somewhat supports patient care, and reliability was similarly rated well, with 83% describing the system as very or somewhat reliable.

Respondents reported strong effectiveness in reducing documentation errors (86% effective) and misidentification errors (90% showing reduction).

Additionally, 86% agreed that EMR reduces paper use, reflecting acceptance of digital transition. Overall satisfaction was high, with 80% being very or somewhat satisfied with the EMR system.

These findings collectively indicate that users perceive the EMR as usable, helpful, reliable, and beneficial to both clinical workflow and patient safety

3.Analysis -Technician

Table 3.1:Frequency Distribution of Variables

Question	Option	Frequency	Percentage
Easy to use	Very easy	13	33.3
	Somewhat easy	15	38.5
	Neutral	7	17.9
	Somewhat difficult	3	7.7
	Very difficult	1	2.6
Frequency of using	Multiple times per hour	12	30.8
	Several times a day	10	25.6
	Once or twice a day	10	25.6
	A few times a week	5	12.8
	Rarely or never	2	5.1
Usability	Very user-friendly	18	46.2
	Somewhat user-friendly	16	41.0
	Neutral	1	2.6
	Somewhat difficult to use	4	10.3
Primary Challenge	Lack of training	19	48.7
	Technical issues	8	20.5
	Resistance from staff	6	15.4
	Lack of infrastructure or support	3	7.7
	Difficulty in integrating EHR with existing systems	3	7.7
Productivity	Significantly increased productivity	17	43.6
	Somewhat increased productivity	18	46.2
	No change in productivity	1	2.6
	Somewhat decreased productivity	2	5.1

Technical support	Very adequate	18	46.2
	Somewhat adequate	7	17.9
	Neutral	10	25.6
	Somewhat inadequate	4	10.3
Reducing documentation errors	Very effective	14	35.9
	Somewhat effective	19	48.7
	Neutral	3	7.7
	Somewhat ineffective	3	7.7
Reducing Misidentification error	Significant reduction	22	56.4
	Somewhat reduced	13	33.3
	Somewhat increased	1	2.6
	Significant increase	3	7.7
Reduced paper	Strongly agree	6	15.4
	Agree	25	64.1
	Neutral	5	12.8
	Disagree	2	5.1
	Strongly disagree	1	2.6
Overall satisfaction	Very satisfied	16	41.0
	Somewhat satisfied	16	41.0
	Neutral	4	10.3
	Somewhat dissatisfied	3	7.7

The above table shows that the most respondents found the EMR system easy to use, with over 70% rating it as very or somewhat easy, and nearly half using it multiple times per hour or per day.

Usability perceptions were highly positive, with 87% describing the system as very or somewhat user-friendly.

The most common primary challenge was lack of training, followed by technical issues and staff resistance.

Productivity improved for the majority, with nearly 90% reporting significant or moderate increases. Technical support was viewed as adequate by most users.

EMR use was also seen as effective in reducing documentation errors and misidentification, with over 80% reporting improvements.

A majority of the participants strongly agreed that EMR use reduces paper, and overall satisfaction was high, with 82% being very or somewhat satisfied.

4. Analysis-Management

Table4.1 Frequency distribution of variables

Variable	Option	Frequency	Percentage
Easy to learn	Very easy; I had no trouble learning how to use the system	3	15.0
	Somewhat easy; I needed a little time to get used to the system	14	70.0
	Neutral; neither difficult nor easy to learn	2	10.0
	Somewhat difficult; I required extensive training and support	1	5.0
Frequency of use	I use it every day, multiple times a day	6	30.0
	I use it at least once a day	11	55.0
	I use it occasionally, depending on the tasks	3	15.0
Usability	Highly usable; the system is intuitive and easy to navigate	10	50.0
	Mostly usable; I can complete tasks with minimal difficulty	6	30.0
	Neutral; the system has some helpful features, but it can be challenging at times	2	10.0
	Not very usable; I often struggle with the system	2	10.0
Satisfied	Very satisfied; the system has greatly improved operational efficiency	14	70.0

	Mostly satisfied; there have been improvements, but there are still areas for optimization	5	25.0
	Neutral; I do not notice significant changes in operational efficiency	1	5.0
Improved patient access	Significantly improved; patient information is readily accessible when needed	6	30.0
	Moderately improved; access is better but still has some delays	8	40.0
	Slightly improved; there are still frequent issues with accessing information	4	20.0
	No improvement; access to patient information remains the same	2	10.0
Documentation accuracy	Greatly improved accuracy; digitization has significantly reduced errors	6	30.0
	Moderately improved accuracy; there are fewer errors but still some inconsistencies	10	50.0
	No change; the accuracy of documentation is about the same as before digitization	2	10.0
	Somewhat worsened accuracy; there are occasional errors due to system limitations	2	10.0
Communication and collaboration	Excellent; the system has greatly improved communication and collaboration	8	40.0
	Good; the system has helped, but there are still some challenges	8	40.0
	Neutral; communication and collaboration are unaffected by the system	3	15.0
	Poor; the system has caused some issues with communication and collaboration	1	5.0
Adoption	Lack of proper training and education on the system	5	25.0
	Technical issues, such as system crashes or slow performance	10	50.0
	Resistance to change from staff or colleagues	4	20.0
	Concerns about data security and patient privacy	1	5.0
Data security	Very positive; I believe the system is highly secure and trustworthy	6	30.0
	Mostly positive; I have some concerns, but I trust the system overall	10	50.0
	Neutral; I am not sure about the security of the system	1	5.0
	Somewhat negative; I have concerns about potential security breaches	2	10.0
	Very negative; I do not trust the system to secure patient data adequately	1	5.0
ROI	Very positive; the long-term benefits far outweigh the initial investment	12	60.0
	Mostly positive; there are clear long-term benefits, but the ROI is slower than expected	5	25.0
	Neutral; the ROI seems to be mixed or uncertain at this point	3	15.0

The above table shows that most participants found the EMR system easy to learn, with 85% reporting it was very or somewhat easy, and the majority (55%) using it at least once a day. Half rated the system as highly usable, and 70% were very satisfied with improvements in operational efficiency.

Patient access improved for most users, with 70% reporting moderate to significant improvement. Documentation accuracy also improved, with 80% indicating better accuracy after digitization.

Communication and collaboration were rated excellent or good by 80% of participants. Adoption challenges were mainly related to technical issues (50%) and inadequate training (25%). Perceptions of data security were generally positive, with 80% expressing confidence in system security.

Finally, long-term ROI was viewed favorably by most respondents, with 60% rating it very positive and 25% mostly positive

5.Analysis-Patient

Table 5.1 Frequency distribution of variables

Variables	Options	Frequency	Percent
Age Group	Below 18 yrs	3	3.3
	18 yrs–30 yrs	38	42.2
	31 yrs–45 yrs	31	34.4
	46 yrs–60 yrs	16	17.8
	Above 60yrs	2	2.2
Old or new health seeker	I am a new healthcare seeker	22	24.4
	I have been visiting the healthcare facility for less than 1 year	38	42.2
	I have been visiting the healthcare facility for 1-3 year	20	22.2
	I have been visiting the healthcare facility for 4-5 years	8	8.9
	I have been visiting the healthcare facility for more than 5 years	2	2.2
Education	High School or below	31	34.4
	Some College or Associate Degree	22	24.4
	Bachelor's Degree	34	37.8
	Master's Degree	3	3.3
concern regarding digital medical records	Privacy and security of my personal information	18	20.0
	Data accuracy or the risk of errors in records	51	56.7
	Lack of human interaction in decision-making	3	3.3
	System reliability (downtime or technical issues)	15	16.7
	Difficulty in accessing or retrieving my health data	2	2.2
digital records helps you participate more actively in your care	Yes, it significantly enhances my involvement in my care	46	51.1
	Yes, but only to a small extent	30	33.3
	Neutral; I don't see a major difference	12	13.3
	No, it has not impacted my involvement	2	2.2
Often visit	Multiple times a week	3	3.3
	Once a week	31	34.4
	Once a month	36	40.0
	Very few months	17	18.9
	Rarely or never	1	1.1
Waiting time	Less than 15 minutes	28	31.1
	15–30 minutes	25	27.8
	31–60 minutes	29	32.2
	More than 60 minutes	7	7.8
	I did not noticed	1	1.1
Usefulness	Extremely useful; it has greatly improved the quality of my care	21	23.3
	Somewhat useful; it has improved care to some extent	37	41.1
	Neutral; I haven't noticed a significant difference	25	27.8
	Not very useful; it hasn't had much of an impact on my care	5	5.6
	Not useful at all; it seems irrelevant to my care	2	2.2
Address your concerns	Very well; all my concerns were addressed promptly and clearly	18	20.0
	Well; most of my concerns were addressed adequately	44	48.9
	Neutral; some concerns were addressed, but not all	22	24.4
	Poorly; I had to repeat myself or felt my concerns were ignored	3	3.3
	Very poorly; my concerns were never addressed or answered	1	1.1
Satisfaction	Very satisfied; I had an excellent experience	4	4.4
	Satisfied; my experience was generally positive	59	65.6
	Neutral; neither satisfied nor dissatisfied	22	24.4
	Dissatisfied; there were some areas that need improvement	4	4.4
	Very dissatisfied; my experience was poor	1	1.1

The table consisted mostly of adults aged 18–30 years (42.2%) and 31–45 years (34.4%), with very few below 18 (3.3%) or above 60 (2.2%).

Most participants were relatively new to the healthcare facility, with 42.2% attending for less than one year and 24.4% being first-time seekers.

Education levels were mainly high school or below (34.4%) and bachelor's degree holders (37.8%).

The most common concern regarding digital medical records was data accuracy (56.7%), followed by privacy and security (20%). Over half (51.1%) felt digital records significantly enhanced care participation, while 33.3% reported slight improvement.

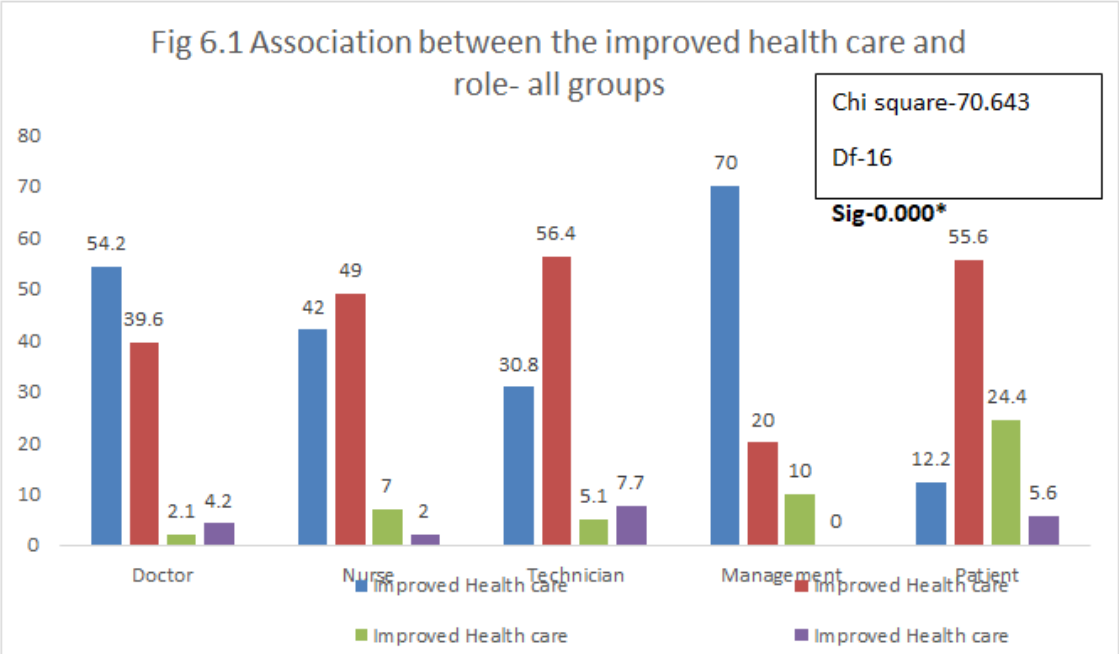
Most visitors came once a month (40%) or once a week (34.4%). Waiting times were usually between 15–60 minutes. Digital records were viewed as extremely or somewhat useful by 64.4% of participants, and 68.9% felt their concerns were addressed well.

Overall satisfaction was high, with 70% reporting a positive experience and very few expressing dissatisfaction.

6.Analysis - Comparison between groups

Table 6.1 Association between the improved health care and role

Role	Improved Health care				Value	df	Asymp. Sig. (2-sided)
	Excellent(%)	Good(%)	Moderate(%)	Poor(%)			
Doctor	52(54.2)	38(39.6)	2(2.1)	4(4.2)	70.643	16	**.000***
Nurse	42(42.0)	49(49.0)	7(7.0)	2(2.0)			
Technician	12(30.8)	22(56.44)	2(5.1)	3(7.7)			
Management	14(70)	4(20)	2(10)	0			
Patient	11(12.2)	50(55.6)	22(24.4)	5(5.6)			



The chi-square analysis shows a significant association between participants r role and perceived improvement in healthcare outcomes ($\chi^2 = 70.643$, df = 16, $p < .001$).

Doctors and nurses reported the highest levels of perceived improvement, with the majority rating outcomes as "excellent" or "good."

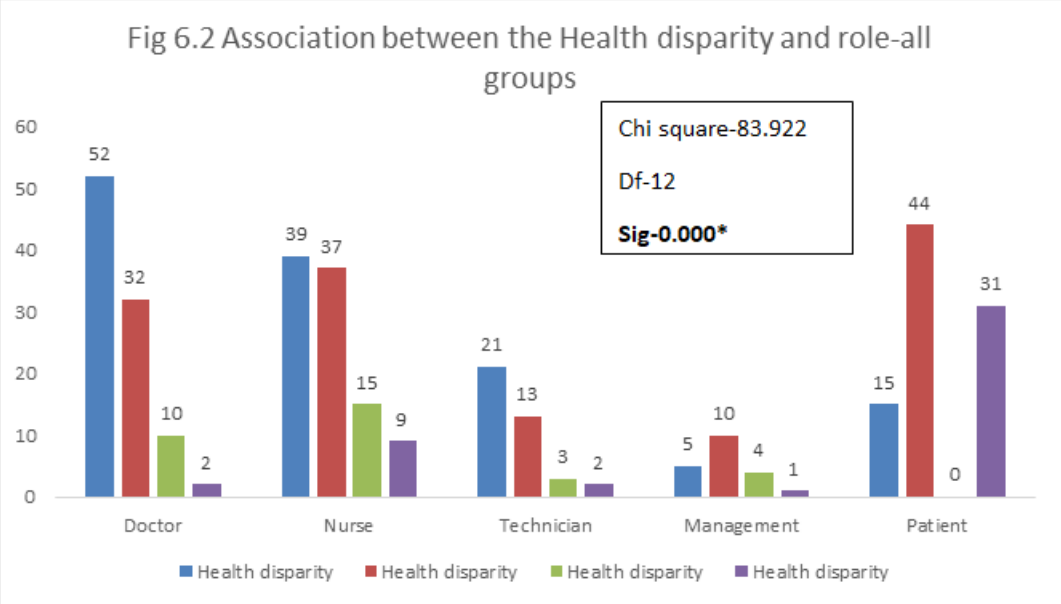
Technicians and management staff also showed predominantly positive ratings, although management responses were more polarized, with most selecting "excellent."

In contrast, patients showed more varied responses, with fewer "excellent" ratings and a higher proportion of "moderate" and "poor" evaluations compared to healthcare providers.

Overall, these results suggest that healthcare professionals perceive stronger improvements in healthcare outcomes than patients

Table 6.2 Association between the Health disparity and role

Role	Health disparity				Value	df	Asymp. Sig. (2-sided)
	Excellent(%)	Good(%)	Moderate(%)	Poor(%)			
Doctor	52(54.2)	32(33.3)	10(10.4)	2(2.1)	83.922	12	**.000***
Nurse	39(39.0)	37(37.0)	15(15.0)	9(9.0)			
Technician	21(53.8)	13(33.3)	3(7.7)	2(5.1)			
Management	5(25)	10(50)	4(20)	1(5)			
Patient	15(16.7)	44(48.9)	0	31(34.4)			



The above table shows that significant association between role and perceptions of health disparity ($\chi^2 = 83.922$, df = 12, $p < .001$). Doctors, nurses, technicians, and management staff generally rated health disparity more favorably, with most selecting "excellent" or "good,"

In contrast, patient responses were markedly different: nearly one-third (34.4%) rated health disparity as "poor," and none rated it as "moderate," suggesting strong concerns about unequal healthcare experiences.

Table 6.3 Mean distribution between job role and improved healthcare

Improved health care	Mean(SD)	F	df	Sig.	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Doctor	3.43(0.73)	17.065	4	.000	3.2881	3.5869
Nurse	4.14(0.63)				4.0130	4.2670
Technician	4.094(0.78)				3.8390	4.3492
Management	4.325(0.59)				4.0484	4.6016
Patient	3.757(0.65)				3.6180	3.8972

The results indicate a significant difference in perceptions of improved healthcare across participants roles ($F = 17.065$, $df = 4$, $p < .001$). Management reported the highest mean rating ($M = 4.33$, $SD = 0.59$), followed closely by nurses ($M = 4.14$, $SD = 0.63$) and technicians ($M = 4.09$, $SD = 0.78$), suggesting these groups perceive substantial improvements in healthcare. Doctors and patients reported lower mean scores ($M = 3.43$ and 3.76, respectively), indicating comparatively more moderate perceptions. These findings suggest that healthcare providers, particularly those in management and frontline roles, perceive greater improvements in care quality than patients and doctors do, highlighting differences in perspectives across roles.

Table 6.4 Mean distribution between job role and improved health population

Improved health population	Mean(SD)	F	df	Sig.	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound

Doctor	3.43(0.73)				3.2881	3.5869
Nurse	4.13(0.80)				3.9749	4.2951
Technician	4.20(0.93)	12.986		.000	3.9014	4.5089
Management	3.95(0.72)				3.6113	4.2887
Patient	3.75(0.65)		4		3.6180	3.8972

The table results indicate a significant difference in perceptions of improved population health across stakeholder roles ($F = 12.986$, $df = 4$, $p < .001$). Technicians ($M = 4.20$, $SD = 0.93$) and nurses ($M = 4.13$, $SD = 0.80$) reported the highest mean scores, reflecting strong perceptions that population health has improved. Management ($M = 3.95$, $SD = 0.72$) and patients ($M = 3.75$, $SD = 0.65$) reported moderately high scores, while doctors had the lowest mean rating ($M = 3.43$, $SD = 0.73$), suggesting comparatively lower perceptions of population health improvements.

CONCLUSION

The study aimed to evaluate perceptions of digital healthcare systems across different participants, with objectives to assess improvements in healthcare quality, population health, patient engagement, cost reduction, and transparency. Analysis revealed significant differences across roles: management, nurses, and technicians reported the highest perceived improvements, while doctors and patients generally rated outcomes more moderately. Patient engagement was positively viewed across all roles, though doctors perceived slightly lower levels, and patients expressed greater concern regarding health disparities. Overall, the findings indicate that the expected outcomes—enhanced healthcare quality, population health, engagement, cost-efficiency, and transparency—were largely achieved from the perspective of healthcare providers, while patient feedback highlights the need to address equity and perceived care gaps to fully realize these outcomes.

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