

AWARENESS, PERCEPTION AND ATTITUDE ON THE FUTURE OF HEALTHCARE AMONG STUDENTS OF HEALTHCARE PROFESSION – A MIXED METHOD APPROACH

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ABSTRACT

Clinical interactions mostly consist of health care providers' knowledge, attitudes, and behavior around health and illness. A patient's lifestyle, symptom presentation, access to care, doctor-patient interactions, follow-through on medical advice and reaction to therapy are all influenced by these factors.¹ This study was conducted using concurrent triangulation mixed method design to gather qualitative and quantitative data concurrently in order to obtain the awareness, perspectives and attitude of students of health profession regarding key trends in the future of healthcare among students of health profession at selected institutions. 880 students were selected using purposive sampling technique. Data was collected from the students who had participated in the Kalaignar Centenary International Medical Conference - Future of Medicine organized by Department of Health & Family Welfare, Government of Tamilnadu & The Tamilnadu Dr. MGR Medical University, Chennai. After obtaining consent data was collected using pretested, predetermined and validated tools which were found to be reliable. Data was coded and analyzed using appropriate descriptive and Inferential Statistics through SPSS- 20. The study findings reveal that, overall majority of participants (71.2%) had average level of awareness on trends in the future of healthcare. Among the different health care professions medicine (83.39%), dentistry (83.8%), nursing (60.5%), pharmacy (81.5%), physiotherapy (71.4%) and allied health sciences (58.9%). Regarding attitude overall majority of participants (67.7%) had positive attitude. In the areas of medicine (29.6%), (100%) in physiotherapy and nursing, (36.1%) pharmacy in allied health sciences (94.1%) had positive attitude. The percentage of the total mean scores of awareness was 54% with mean value of 5.40 +1.54. attitude score was 91 %with mean value of 54.60 +10.02. Significant correlation was found between awareness and attitude scores of students of health profession on future healthcare trends at $p < 0.001$. Awareness of future trends in healthcare will encourage students to engage in research and education initiatives that address emerging challenges and opportunities. Overall, fostering awareness, perception, and positive attitudes towards the future of healthcare among students of healthcare professions is essential for driving innovation, improving patient outcomes, and addressing the complex challenges facing healthcare sector..

Introduction

Background of the Study

Technology advancements have a significant impact on healthcare, affecting everything from treatment and prognosis. Healthcare will continue to change as a result of future technology innovation, but even when new equipment, medications, and social media platforms are developed, human aspects will always be a limiting role in new developments. Rapid technological progress, changing patient demands, and revolutionary innovations will define the dynamic landscape of healthcare in the future. Due to the rapid growth of technology, the healthcare sector is undergoing a substantial transformation such as the fusion of genetics, telemedicine, artificial intelligence, and patient empowerment.²

The High-level Political Forum on Sustainable Development is the central UN platform adopted at the United Nations on September 2015 as a plan of action for people, the planet as a whole and

prosperity. It is expected that their goals and targets will stimulate action up to 2030.³ Along with increasing accessibility and efficiency, these advances are also putting the patient at the centre of healthcare delivery. Negative attitudes can exacerbate situations, whilst positive attitudes can result in better care and better results. In order to give patients a happy and compassionate atmosphere, collaboration between nurses and healthcare facilities is essential. Therefore, this study is undertaken by the researchers to assess the awareness, perceptions and attitude among students of health care profession on future of health care.

Objectives

1. To assess the awareness among students of health profession regarding key trends in the future of healthcare.
2. To explore the perceptions of students of health profession on the impact of technological advancements on healthcare delivery.
3. To assess the attitude of students of health profession on future health care
4. To correlate the awareness and attitude of students of health profession.
5. To associate the awareness regarding key trends in the future of healthcare of students of health profession with their selected background variables.
6. To associate the attitudes of students of health profession on future health care with their selected background variables.

Research Hypotheses

H1: There is a significant correlation between the awareness and attitude scores of students of health profession.

H2: There is a significant association between the awareness, attitude scores regarding key trends in the future of healthcare of students of health profession with their selected background variables.

Materials and Methods

This study was conducted using concurrent triangulation mixed method design to gather qualitative and quantitative data concurrently in order to obtain the awareness, perspectives and attitude of students of health profession regarding key trends in the future of healthcare among students of health profession at selected institutions. 880 students were selected using purposive sampling technique. Data was collected from the students who had participated in the Kalaignar Centenary International Medical Conference -Future of Medicine organized by Department of Health & Family Welfare, Government of Tamilnadu & The Tamilnadu Dr. MGR Medical University, Chennai. After obtaining consent, data was collected using pretested, predetermined and validated tools such as Proforma to collect the background characteristics of the students (This was used to measure the baseline characteristics such as age, gender, level of study, year of study, type of institution, domicile) and proforma to assess the awareness among students of health profession regarding key trends in the future of healthcare with 10 items, right answer was scored as 1 and wrong answer as 0, Hence the obtainable score was 0-10. A score of 8-10 was interpreted as good (complete awareness), 5-7 average (partial awareness), and < 5 needs improvement (lack of awareness).

An open-ended questionnaire was used to explore the perceptions of students of health profession on the impact of technological advancements on healthcare delivery and a rating scale to assess the attitude of students of health profession on future health care. It consisted of 15 items, 5-point rating scale with the 5 responses, ranged from 4 (strongly Agree) to (strongly disagree) 0, (0-4) with total obtainable score- 0-60. Positive Statements (Positive Scoring Items) – Scoring 4- 0. Positive Statements (Items) - 1, 2, 3, 7, 9, 11, 15. Strongly Agree - 4, Agree – 3, Neutral- 2, Disagree-1 and

Strongly Disagree – 0. Negative Statements (Reverse Scoring Items) – Scoring ranged from 0- 4. Negative Statements (Items 4, 5, 6, 8, 10, 12, 13, 14). The scores were interpreted as 41-60- Positive attitude, 21-40 - Neutral attitude, < 40 - Negative attitude.

Validation of the instrument was done by experts, modifications and suggestions were incorporated in the final preparation of the tool. Tools were found to be reliable. Ethical clearance was obtained from the Institutional ethics committee of the Apollo College of Nursing. Informed consent was obtained from the study participants. Confidentiality was maintained throughout the study. The participants were requested to respond and submit their forms through google forms. Data collected from students of healthcare professionals, was coded and analyzed using appropriate descriptive and inferential statistics through SPSS- 20.

Results and Discussion

Table 1: Frequency and Percentage Distribution of Background Variables Among Students of Healthcare Profession (N=880)

Healthcare Profession (N= 889)														
Backgr ound Variabl es	Medicine		Dental		Nursing		Pharmacy		Physio- Therap y		Allied Health Science s		Total	
	(n=283)		(n=37)		(n=423)		(n=113)		(n=7)		(n=17)			
	(32.10%)		(4.10%)		(48%)		(13%)		(0.80%)		(2%)			
	f	%	f	%	F	%	f	%	F	%	f	%	f	%
Gender														
Male	139	49.1	12	32.4	68	16.1	58	51.3	5	71.4	10	58.8	292	33.2
Female	144	50.9	25	67.6	355	83.9	55	48.7	2	28.6	7	41.2	588	66.8
Age in Years														
<20	138	48.8	1	2.7	110	26	3	3	2	28.6	1	5.1	254	28.8
20-25	52	18.4	26	70.3	259	61	101	89	5	71.4	8	47.9	451	51.2
26-30	55	19.4	9	24.3	14	3	9	8	-	-	4	23.5	91	10.3
>30	38	13.4	1	2.7	40	10	-	-	-	-	4	23.5	83	9.4
Level of Study														
UG	182	64.3	16	43.2	363	85.8	27	23.9	7	100	8	47.1	603	68.5
PG	101	35.7	21	56.8	60	14.1	86	76.1	-	-	9	52.9	277	31.4
Year of Study														

I	-	-	-	-	-	-	-	-	-	-	-	-		
II	217	76.7	0	0	192	45.4	74	65.5	2	28.6	6	35.3	491	55.7
III	44	15.5	18	48.6	187	44.2	7	6.2	3	42.9	5	29.4	264	30
IV	12	4.2	19	51.4	40	9.5	32	28.3	2	28.6	6	35.3	111	12.61
V	10	3.5	-	-	4	0.9	-	-	-	-	-	-	14	1.59
Type of Institution														
Govt	182	64.3	7	18.9	44	10.4	33	29.2	3	42.9	14	82.4	283	32.15
Private	97	34.3	30	81.1	376	88.9	78	69	4	57.1	3	17.6	588	66.81
Mission	4	1.4	0	0	3	0.6	2	0.18	-	-	-	-	9	1.022
Domicile														
Urban	192	67.8	26	70.3	242	57.2	69	61.1	6	85.7	12	70.6	547	62.15
Semi urban	42	14.8	7	18.9	119	28.1	34	30.1	1	14.3	3	17.6	206	23.40
Rural	49	17.3	4	10.8	62	14.7	10	8.9	-	-	2	11.8	127	14.43

Tab 1 reveals that, majority of them were females overall (66.8%) and across all the fields Medicine (50.9%), Dentistry (67.6%), Nursing (83.9%), Pharmacy (51.3%), Physiotherapy (71.4%) and Allied Health Sciences (58.8%). Majority of them were aged 20-25 years in dentistry (70.3%), Nursing, (61%), Pharmacy (89%), Physiotherapy (71%) and Allied Health Sciences (47.9%). Whereas in medicine nearly fifty percentage (48.8%) of the participants were under the age of 20 years. Majority of them were pursuing undergraduate degree Medicine (64.3%), Nursing (85.8%), more than fifty percentage of them were pursuing postgraduate degree in Dentistry (56.8%), in Pharmacy (76.1%) and Allied Health Sciences (52.9%), in medicine (64.3%) were studying at government institutions and (82.4%) in allied health sciences. Students studying in private institutions (81.1%) dentistry (88.9%) nursing (69%) pharmacy, (57.1%) physiotherapy. Majority came from urban background medicine (67.8%), dentistry (70.3%), nursing (57.2%), pharmacy (61.1%), physiotherapy (85.7%) and allied health sciences (70.6%) respectively.

Fig. 2 shows that overall, all the participants 35.6% were very aware, and 38.6% were somewhat aware. Twenty-two percent were neutral 3.6% did not much awareness of new developments in healthcare.

Fig 3 reveals the students' familiarity with healthcare trends like using applications of artificial intelligence (66%), telemedicine (43%), medical precision (21.7%), technology for wearable health (21%), healthcare and blockchain (9.5%) medicine of the population (28.5%) others (12.3%).

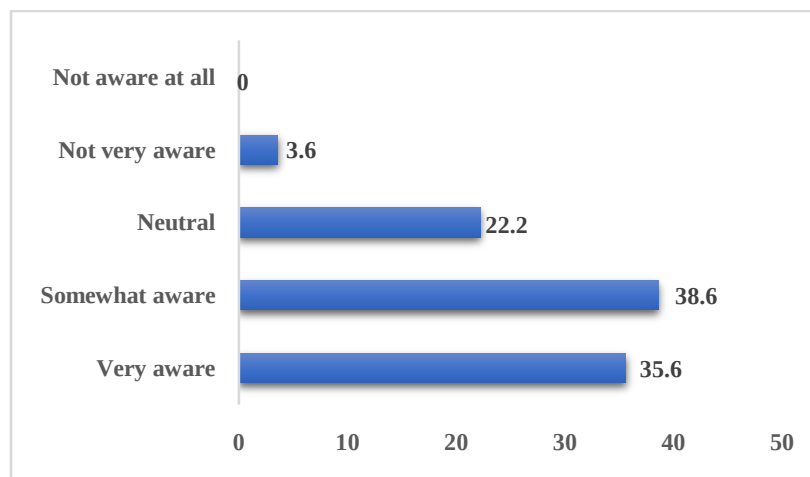


Fig 1: Percentage distribution of current level of awareness of emerging trends in healthcare

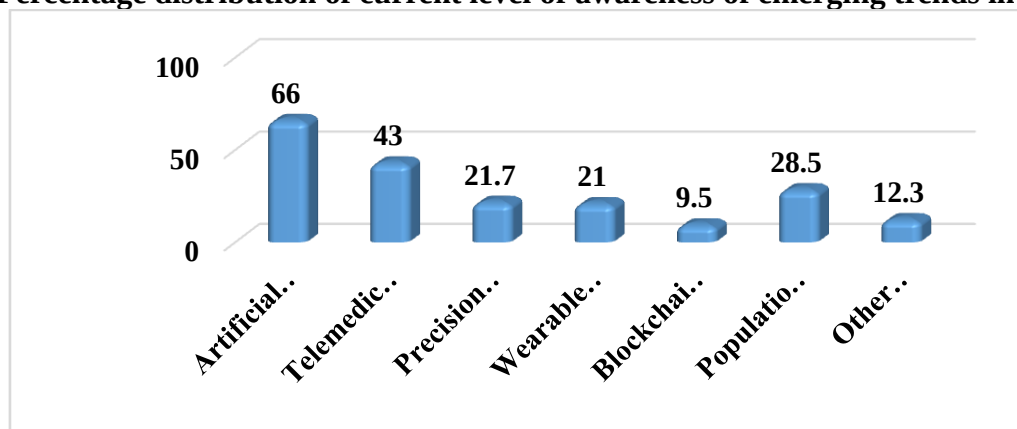


Fig 2: Percentage Distribution of Students' Acquaintance with Healthcare Trends

Table 2: Percentage Distribution of Levels of Awareness of Students of Health Profession on Future Healthcare Trends (N=880)

Levels of Awareness (Awareness scores)	Medicine		Dental		Nursing		Pharmacy		Physiotherapy		Allied Health Sciences		Total	
	f	%	f	%	f	%	f	%	F	%	f	%	f	%
Good (Complete awareness) 8-10	15	5.30	1	2.7	25	2.8	5	4.4	5	71.4	1	5.9	52	5.90
Average (Partial Awareness) 5-7	236	83.39	31	83.8	256	60.5	92	81.5	2	28.6	109	58.9	627	71.25
Needs Improvement (lack of awareness) <5	32	11.30	5	13.5	142	33.6	16	14.2	0	-	63	35.3	201	22.84

Tab 2 reveals that, overall majority of the participants (71.2%) had average level of awareness in the areas of medicine (83.39%), dentistry (83.8%), nursing (60.5%), pharmacy (81.5%), and allied health sciences (58.9%). Participants in physiotherapy had good level of awareness (71.4%). The findings are consistent with the findings of a cross sectional study done by Zayapragassarazan & Kumar (2016).⁴ among 120 teaching faculty members and practitioners from the preclinical, paraclinical, and clinical departments in the teaching hospitals of Puducherry Union Territory, India. The survey was done to gauge participants' awareness, knowledge, attitudes, and

skills regarding telemedicine. 41% of respondents had high understanding of telemedicine, 35% had fair knowledge, and 24% had insufficient information. The respondents' knowledge level was determined to be good. Regarding attitude regarding telemedicine, 39% of respondents had positive attitude, 31% had moderate attitude, and 30% have negative attitude. 56% of respondents are incompetent in using telemedicine and its associated equipment, while 19% of respondents were highly talented or experts. The remaining 25% of respondents were moderately skilled, which included learners or beginners. Therefore, it was concluded training and education in telemedicine and related concerns is vital for teaching professors, practicing physicians, residents, medical students, and other health professionals.

Table 3: Percentage Distribution of Levels of Attitude of Students of Health Profession on Future Healthcare Trends (N=880)

Level of Attitude (Scores)	Medicine		Dental		Nursing		Pharmacy		Physiotherapy		Allied Health Sciences		Total	
	f	%	f	%	F	%	f	%	F	%	F	%	f	%
Positive Attitude (> 40)	85	29.6	24	65	423	100	41	36.1	7	100	16	94.1	596	67.7
Neutral (21-40)	190	67.2	11	29.6	0	0	71	63	0	0	0	0	272	30.9
Negative attitude (< 40)	8	3.2	2	5.4	0	0	1	0.9	0	0	1	5.9	12	1.36

Tab 3 depicts that, majority of participants overall (67.7%) had positive attitude, in the areas of medicine (29.6%), all the participants (100%) in physiotherapy and nursing, pharmacy (36.1%) as well as those in allied health sciences (94.1%). In 2011 and 2012, a prospective study including 780 first-year students from six health professional programmes at Des Moines University was conducted. Phase I included pre-survey participation, faculty facilitator orientation, and research respondents' guided exploration of their potential area of practice. Phase II comprised a post-survey, a video viewing, small group discussions on a multi-problem clinical case, an Interprofessional Education (IPE) Day with presentations, and a goal of fostering interprofessional collaboration in a patient-centred care process. Following the educational intervention, there were notable advancements ($p < 0.05$) noted in the participants' comprehension of the concepts of IPE, the range of practices of various health care providers, and the function of IPE in enhancing patient communication, working relationships, and the final results of patient care.⁵

Table 4 Descriptive Statistics of Awareness and Attitude Scores of Students of Health Profession on Future Healthcare Trends (N=880)

Variables	Obtainable Score		Obtained Score		Mean	Mean %	SD
	Min	Max	Min	Max			

Awareness	0	10	1	8	5.40	54	1.54
Attitude	0	60	0	60	54.60	91	10.02

Tab 4 reveals the percentage of the total mean scores of awareness was 54% with mean value of 5.40 ± 1.54 . attitude score was 91 % with mean value of 54.60 ± 10.02 . Similar findings were found by Mousavi (2024)⁶, who carried out a systematic review that looked at the attitudes, knowledge, and artificial intelligence (AI) skills of healthcare students. Among the 38 studies that were included, 29 (76%) of the students studying healthcare had a favourable and promising attitude toward AI in the clinical setting and its potential usage in the future. Furthermore, 26 investigations evaluated the AI proficiency of healthcare students. Of these, 18 studies found that students had low knowledge of AI (50%) while six studies reported high knowledge of AI and two studies found average general knowledge of students (nearly 50%). Of the six studies, four (67%) reported having very low skills, meaning they had never worked with AI. The evidence from this review indicates that healthcare students had a positive and promising attitude toward AI in medicine.

Table 5: Correlation between Awareness and Attitude Scores of Students of Health Profession on Future Healthcare Trends (N=880)

Variables	Max Score	Mean	S. D	r value	p value
Awareness	10	5.40	1.54	0.205	P<0.001
Attitude	60	54.60	10.02		

Table 5 indicates that there is correlation between Awareness and Attitude Scores of Students of Health Profession on Future Healthcare Trends at $p < 0.001$. Hence the research hypothesis **H1**: There is a significant correlation between the awareness and attitude scores of students of health profession was accepted at $p < 0.001$.

The findings of the study are consistent with a study conducted by Thapa (2021)⁷ which involved a quantitative cross-sectional survey to determine the factors linked to health care professionals' and students' readiness to use digital health tools in patient care. In a Saudi Arabian university hospital located in Riyadh. An email-distributed self-completed electronic questionnaire was used to gather data. The willingness to employ digital technologies in patient care was expressed by 181 out of 218 health care professionals (83.0%; 75.6% [59/78] physicians; 87.1% [122/140] nurses) and 115 out of 154 students (74.7%; 80.0% [76/95] medical students and 66.1% [39/59] nursing students). For health care professionals, willingness to use digital tools was significantly correlated with attitude (Adjusted Odds Ratios (AOR) 1.96; 95% CI 1.14-3.36) and self-efficacy (AOR 1.64; 95% CI 1.17-2.30); for students, it was correlated with current year of study (AOR 2.08; 95% CI 1.18-3.68) and self-efficacy (AOR 1.77; 95% CI 1.17-2.69). Between medical and nursing students ($P = .079$) and between doctors and nurses ($P = .113$), there was no discernible difference in the readiness to use digital technologies.

Table 6: Association between the awareness scores regarding key trends in the future of healthcare of students of health profession and selected background variables. (N=880)

Background Variables	n	Awareness Scores				Attitude Scores			
		Mean	SD	F/ t value	P Value	Mean	SD	F/ t value	P Value

Profession									
Medicine	282	5.92	1.256	19.514	P <0.001 .000	55.88	9.033	10.540	.000
Dental	38	5.66	1.457			55.68	10.127		
Nursing	422	4.91	1.642			52.34	10.447		
Pharmacy	113	5.88	1.266			59.04	9.073		
Physiotherapy	8	5.38	1.061			55.88	6.770		
Allied Health Sciences	17	5.00	1.500			17	57.18		
Gender									
Male	292	5.59	1.572	2.545	.011	56.51	9.932	3.988	.000
Female	586	5.30	1.522			53.67	9.954		
Age in years									
≥25 years	684	5.28	1.571	-4.05	.000	53.86	9.844	-4.159	.000
>25 years	196	5.79	1.372			57.20	10.240		
Level of study									
UG	603	5.23	1.546	-4.919	.000	53.75	10.104	-3.781	.000
PG	274	5.77	1.479			56.50	9.631		
Year of study									
I	-	-	-	-	-	-	-	9.737	.000
II	509	5.71	1.378	20.129	.000	55.35	9.514		
III	257	4.84	1.666			51.97	10.418		
IV	83	5.17	1.568			57.36	9.235		
V	31	5.39	1.626			56.84	12.557		
Type of Institution									
Government	283	5.88	1.268	21.880	.000	56.68	8.506	9.893	.000
Private	588	5.16	1.601			53.68	10.483		
Mission	9	5.22	2.048			49.56	13.575		
Domicile									
Urban	547	5.46	1.554	3.363	.035	55.10	9.841	2.163	.116
Rural	206	5.16	1.487			54.17	10.965		
Semi urban	127	5.52	1.553			53.17	9.076		

Table 6 depicts that there was a significant association between the awareness scores regarding key trends in the future of healthcare of students of health profession and selected background variables at $p < 0.001$. Where as significant association was found between the attitude scores regarding key trends in the future of healthcare of students of health profession and selected background variables at $p < 0.001$ with the exception of participants residence at $p > 0.001$. Hence the research hypothesis **H2**: There is a significant association between the awareness, attitude scores regarding key trends in the future of healthcare of students of health profession with their selected background variables was accepted at $p < 0.001$.

The study also aimed to explore the perspectives of healthcare professionals regarding the challenges, prospects, barriers, and insights related to adopting new technologies in healthcare. Qualitative data was collected to identify and analyse the key challenges faced by healthcare professionals in adopting new technologies. Secondly to understand the optimistic perspectives of healthcare professionals regarding the advancement of healthcare through technology, to examine the barriers perceived by healthcare professionals in adapting to the future of healthcare. Lastly, to gain insights from healthcare professionals on the future of healthcare and technology integration four questions were asked. The responses were then recorded and subjected to content analysis, resulting in the extraction and summarization of factors, as presented below

Key Challenges in Adopting New Technologies in Healthcare: Perspectives from Healthcare Professionals

The qualitative study conducted among healthcare professionals delved into the primary challenges faced in adopting new technologies within the healthcare sector. These challenges encompass a broad range of factors. First, there are significant cost implications, including the expense of equipment, high installation costs, and the economic constraints faced by healthcare providers. Interoperability emerged as a critical concern, with worries surrounding data security during sharing among care teams, compatibility issues with existing systems, and the overall complexity of integrating and sharing data across diverse healthcare platforms.

Another substantial challenge is the lack of awareness and knowledge among stakeholders regarding the benefits and functionalities of new technologies. This lack of understanding can hinder the effective adoption and utilization of these tools. Additionally, there are comfort and fear-related barriers, with healthcare professionals often exhibiting fear of new technologies and patients experiencing discomfort with technological advancements in their care.

Availability and access to new technologies pose significant hurdles as well. Limited availability in healthcare facilities and disparities in access across different regions contribute to a technological divide within the healthcare sector. Furthermore, inadequate training infrastructure and challenges in providing comprehensive training to healthcare professionals hinder the effective implementation of new technologies.

Feasibility issues, including the challenges of implementation, supply chain management, and financial constraints, add further complexity to the adoption process. Data security and privacy concerns are also paramount, with risks associated with cybersecurity, compliance regulations, and maintaining digital privacy.

Resistance to change remains a prominent theme, encompassing hesitancy among healthcare professionals, cultural barriers to adopting new technologies, and challenges in gaining public acceptance. Affordability and accessibility barriers, especially prevalent in developing countries, create cost barriers and impede widespread adoption.

Moreover, technology integration challenges persist, including compatibility issues with existing systems, data integration challenges, and interoperability concerns among different healthcare systems. The study also highlighted risks associated with machine errors, potential decreases in physician skills, bias in technology adoption, and preconceived notions about new technologies, all of which contribute to the complexity of adopting new technologies in healthcare.

Prospects of Healthcare Advancement: Optimistic Perspectives from healthcare professionals

An examination of healthcare professionals' perceptions regarding the future of healthcare revealed a myriad of factors. They foresee advancements in technology, such as sophisticated diagnostic tools, innovative treatments, and seamless AI integration, leading to enhanced efficiency and precision in healthcare delivery. There's an anticipation of improved accessibility through remote healthcare services and technology bridging gaps, which could streamline workflows, reduce treatment times, and elevate patient experiences. The emphasis on patient-centric care is

evident, with personalized healthcare approaches, interactive patient platforms, and better patient education.

Collaborative healthcare models, leveraging technology for team-based diagnostics and treatments, are expected to yield improved outcomes. Technological advancements are also seen as a boon for education and training, providing risk-free learning environments and upskilling opportunities for healthcare professionals. Cost-effectiveness is anticipated through time and resource savings, potentially making treatments more affordable. The focus on preventive medicine and personalized treatments based on individual factors is poised to promote wellness and early intervention.

Telemedicine and digital health solutions are perceived as avenues for increased accessibility and remote consultations, empowering patients with medical information while reducing errors. Data analytics and AI applications are seen as engines for data-driven insights, advanced diagnostics, and better research capabilities. The introduction of new technologies and innovative healthcare solutions is expected to improve treatment efficacy and reach, particularly in underserved areas. Automation is viewed favourably for its potential to enhance workflow efficiency and productivity.

Concern for family welfare and community health is evident, with a push for preventive care and early disease detection. Integrative care approaches combining various treatments are anticipated to enhance patient well-being. AI-driven diagnostics are seen as a promising tool for accurate disease identification and predictive analytics. Lifestyle modifications, stress management, and dietary interventions are emphasized for improved health outcomes. Lastly, there's a strong focus on promoting positive mental attitudes and utilizing nutrition as therapy, highlighting holistic approaches to healthcare for comprehensive well-being and disease prevention.

Barriers to Adapting to the Future of Healthcare: Perspectives of Healthcare Professionals

A qualitative study investigated the barriers hindering the adaptation of future healthcare technologies, unveiling a diverse range of challenges. Financial hurdles, including high costs, lack of funds, and budget constraints, stand as primary obstacles, aggravated by economic crises impacting technology investment. Demonstrating cost-effectiveness becomes paramount amidst these challenges. Insufficient infrastructure and technical sophistication pose further difficulties, alongside issues with outdated technology and limited knowledge among healthcare professionals regarding new innovations. Interoperability challenges and reduced manpower add layers of complexity, exacerbated by resistance from professionals and cultural norms affecting technology adoption. Lack of awareness, training programs, regulatory complexity, ethical dilemmas, and legal frameworks all contribute to the intricate landscape of barriers. Data privacy and security concerns, accessibility issues, lack of connectivity, and affordability barriers compound the challenges, painting a nuanced picture of impediments to embracing the future of healthcare technologies.

Insights from the Health care Professionals on Healthcare's Future and Technology

The qualitative analysis highlighted key factors shaping healthcare's technological future. It emphasized the positive impact of technology on accuracy, patient satisfaction, and access to healthcare. Continuous training for healthcare professionals and equitable access to advanced technologies were deemed crucial. Integrating traditional and modern practices, along with ethical tech use, was underscored. The study also addressed challenges like privacy concerns and cost issues while acknowledging the potential of AI and robotics in healthcare. Patient-centred care, collaboration, and innovation were central themes, pointing toward a promising future with improved tools, preventive care, and ongoing education in healthcare technology.

Conclusion

Healthcare professionals' express optimism about the future of healthcare and technology integration, foreseeing benefits such as improved accessibility, efficiency, and patient outcomes. However, they also acknowledge significant challenges, including financial constraints, regulatory

complexities, and technical barriers. Overcoming these obstacles requires collaborative efforts, continuous education, and ethical governance. Despite facing hurdles, the healthcare sector is poised to embrace innovation by leveraging AI and digital health solutions while prioritizing patient-centric care. This strategic approach is expected to drive transformative advancements in healthcare delivery, ultimately enhancing societal well-being.⁸

The results of this study ought to motivate to conduct programs for digital health education for optimal implementation, enabling both present and future medical professionals to acquire the necessary positive attitudes in addition to practical skills and abilities. In addition, it will raise the level of awareness among healthcare students, pave way for more advanced healthcare delivery to patients, community members, and clinical settings, and act as a valuable resource for much-needed future research.

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