



# Technological Advances in Medical Profession and its Impact on Nobilities and Values of Medical Profession

Prof. Dr. D. M. Jadhav<sup>1</sup>, Prof. Swapnil Jadhav<sup>2</sup>

<sup>1</sup>Maharashtra National Law University, Aurangabad.

<sup>2</sup>Ph.D. Scholar, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

Medical Profession is considered to be one of the noble professions of the society. This profession is most respectful profession since the doctors are providing their services towards the life of human being. Ethics and principles of morality are deeply rooted especially in all services towards the human mankind. The medical ethics and moral values of the medical profession kept intact its sanctity and nobility in the society. No doubt being a profession it is controlled and supervised by the Medical Council. The regulating authorities play a key role in maintaining the standard of medical profession and healthcare sector. These authorities also ensure that the medical professionals should follow the standards of professional ethics and if necessary in case of any deviance on behalf of the medical professional, if required, take necessary action against them. As a role of professional doctor facilitate and provide medical care and facilities to the patient which is termed as “service”. The word service is a comprehensive term which includes services available to the potential users. In a way ethical considerations are considered to be paramount consideration for the medical professionals and it has great relevance in maintaining noble values of the medical profession. More specifically when they deals with life of the patient and his welfare and well-being. Like any other profession medical profession has also undergone through a paradigm shift in terms of its nature, process and facilities due to intervention of technology.

In the era of competition there are many forces operating in the field of medical profession which inconsequentially determine the value of profession in the society. The doctors are supposed to be very skillful and should possess updated knowledge of the field. Healthcare sector is also a prime concern of the government and the government also tries to provide healthcare facilities and necessary emergency services to meet the objectives of welfare state. Medical ethics and guidelines are followed due to moral & legal obligation for the protection of rights of the patients. It shows that, around in 18<sup>th</sup> century the code of conduct for the medical professionals started developing to gear up for maintaining the standard of medical profession and to keep intact code of common conduct. As referred earlier technology is meant for making our life more comfortable and dignified. The use of medical technology in medical profession has really changed the shape and dimensions of the medical profession. The technology has also impacted on noble values of the profession. Technological intervention to facilitate healthcare sector has made the life of patient more comfortable and healthy. Right to Health is guaranteed within the ambit of ‘Article 21 of the Constitution of India’. The dignified life guaranteed under Article 21 of the

Constitution of India includes: “right to health and healthcare condition without which life is unhappy”.<sup>1</sup> A meaningful life contains right to health which is inseparable from a human being.<sup>2</sup> The social order as contemplated under Article 38 of the Constitution of India is meaningless without there being public health. Similar responsibility is shouldered on the State under Article 39 (e) to protect health and strength of the worker. The Constitution mandates under Article 41 and 42 also ensure State assistance to the sick and disabled people and just human conditions to the workers. In a way the Constitution of India provides a meaningful life which includes health, strength required for quality life guaranteed under Article 21 of the Constitution of India. Even though the directive principles of the State policy are not justiciable through the Court of Law, however, they are necessary to provide the guidance to the State for welfare and well-being of the people. The Supreme Court of India in *Parmananda Katra Case* upheld the responsibility of medical professionals in safeguarding the public health.<sup>3</sup>

### **Impact of Technology in Healthcare Sector:**

The intervention of the technology in medical science has radically changed the scope, ambit and dimension of medical profession. The technology also affects the decision making of the medical professionals and diagnosing the disease and moreover, IT tools also indirectly controls the doctors and their discretion. In India the healthcare sector especially government hospitals are not much equipped with infrastructures and resources, hence use of such technology may be a big challenge for the government hospitals. As a digitalization of healthcare also need IT infrastructure, special training, technical soundness to use the same.<sup>4</sup> The impact of technology in diagnostic and therapeutic equipment has also changed the practice, pattern and profession. The practice of medicine nowadays depends upon new technology used for diagnosis and treatment. This technology is used for all kind of medical investigations to telemedicine. The unwarranted and excessive use of this technology, however, increased the cost of health services and makes health facilities inaccessible. The increased demand of new technology in every spare of health and its advancement has made medical profession expensive and unaffordable for the common man.<sup>5</sup>

### **Pros and Cons of Technology:**

Undoubtedly the digital technology is being used for maintaining the medical records, summary of patients, lab reports, medical prescriptions, diagnostics etc. This also helps for better communication and accuracy to know the history of the patient and it simultaneously reduces the error. The ICT tools also help both medical professionals and patients and that develop a bond between both of them. This digitalization helps in coordination for updates and to avoid medicational errors. During Covid Pandemic various health apps were developed for quick information, track the record of the patients to access him and to customize health services. The medical facilities through telemedicine or through various apps and video calls reduce the unnecessary time consumption in delivery of services.<sup>6</sup> The use of advance technology has both positive and negative impact, it provides scope for errors in case of inadequate and inaccurate data and in certain cases life threat to the patients. The relationship in between the doctors and patients is fiduciary relationship where the confidentiality and privacy is a great concern for both

---

<sup>1</sup> *Shanta v. State of Andhra Pradesh* AIR SC 922

<sup>2</sup> *Consumer Education and Research Centre v. Union of India*, (1995) 3 SCC 42.

<sup>3</sup> 1989 (3) SCC 233

<sup>4</sup> Sabur Safi, Thomas, Thiessen, Kurt Schmailjal, Dr. Made, Acceptance and Resistance of New Digital technologies in Medicine: qualitative study, *GMIR, Res Proctoc* 2018, December, 7 (12)

<sup>5</sup> LTH Tan and KL, ONG, the impact of medical technology and healthcare, *Hongkong Journal of Emergency Medicine*, Volume 9 (4) October 2002

<sup>6</sup> Mobile Technology, Tool for healthcare and a Boon in pandemic, *journal of family medicine and primary care*, 2022, January, 11 (1) P 37-40.

hospital and patients. In digitalization risk of data privacy and security concerns because of cyber-attacks may compromise the privacy and confidentiality. As stated earlier, more dependency on digitalization reduces necessary clinical skills, critical evaluation of case and apt analysis and diagnosis of the same. The doctor-patient relationship is more or less depends upon human relationship and the very digitalization and excessive use of technology disturb the natural communication and human interaction and this inconsequentially affect effective healthcare.<sup>7</sup> In India to deal with epidemic we faced lot challenges of resources as well as modern infrastructure even at private and government hospitals for controlling digital solutions for pandemic situation. This resolves and provides solutions immediately but maintaining the privacy of such data is a big challenge in thickly populated country like India. In the backdrop of infrastructural crisis and facilities for going ahead with digitalization in healthcare sector is a big challenge because of accessibility, affordable care and financial burden.<sup>8</sup> The ICT tools in healthcare sector surely provides safe and quality services, however, there are many challenge of effective implementation due to infrastructure and resources and professional expertise required for the same.<sup>9</sup>

**Diluting Spirit, Nobility and Values of Medical Profession in India:** In India due to quality healthcare services, special care and expensive medication and hospital expenses contribute high cost medication. In the era of competition many practices are rampant in the form of unnecessary testing for the labs as a routine general practice. In many cases, such lab testing is not necessary, however, such consultative practices and referrals of patient from one lab to another lab is a routine practice which affect cost effective healthcare facilities. It has been observed in many cases as a precautionary measure the patients are admitted in ICU for monitoring the sensitive and critical cases. However, this is followed as a routine practice in most of the hospitals as a safety measure. Digitalization provides platform for routine referral for labs as a practice. We need to have a control and supervisory mechanism especially for such referral through digitalization.

**The technological intervention also provides scope for misuse the technology for commercialization and profit making:**

Indian is popular destination for clinical trials basically in bio-medical research of new drugs. It has been observed that such clinical trials are conducted without any safety measures, control and supervision at the cost of health. In many cases, the requisite permissions of Drug Controller General of India is not taken, the guidelines laid down by Indian Council of Research are also not followed, resulting adverse effects of such trials. In the backdrop of misuse of clinical trials, it is suggested that, to maintain the record of such clinical trials through digitalization is required to control and supervise the same by various regulating authorities. This will maintain the standards of clinical trials, its scientific accuracy, control and supervision and avoid side-effects of drugs and procedural deviance.

**Female Foeticide:**

In view of typical patriarchal psyche along with traditional religious belief that male child continues the name of family. The female foeticide and illegal abortions are rampant in India which has disturbed the male-

<sup>7</sup> Is the effect of technology positive or negative, by HM Team, March 29, 2023

<sup>8</sup> Angayarkanni S Annamalai and others, impact of health information technology tools on patient safety in the Indian Healthcare Industry, the open Bio-Medical Engineering Journal, 2023 Volume 17 P- 1.

<sup>9</sup> Oluwamayowa Ogumdaini and others, unintended consequences of technology – enabled work activities experienced by healthcare professionals in tertrai hospitals of Sub Saharan Africa, African Journal fo Science, Technology, Innovation and Development, 2022 Volume 14 (4) 876

female sex ratio. The doctors are involved in sex-determination and illegal abortions by misusing this technology which is meant for diagnosing anomalies in the child. The rampant increase in misuse of techniques shows a bad track record deteriorating values of medical profession. Despite of special legislation, Medical Termination of Pregnancy Act and Preconception and Prenatal Diagnostic Technique Act, 1994, termination of pregnancies, illegal abortions reveals misuse of technique for profit making intensifying diluting the spirit of medical profession.

#### **Cost Effective Health Services – A Big Challenge:**

The unexpected and exorbitant bills are recovered from the patients in mega hospitals in metro cities and this was observed during the pandemic. In order to have a reasonability of medical services towards the patient as a consumer such overcharging of the bills and financial exploitation of the patients can be very much supervised and controlled through digitalization of financial record. This will surely reduce overcharging and unwarranted expenses levied against the patients. The cut throat competitions and privatization of healthcare services has really made healthcare sector more expensive. As a routine experience private clinics and hospitals are much more expensive than the government hospitals. Hence the private healthcare sector needs to be regularized properly to have access to health for the common man. The quality healthcare facilities are required to be controlled by the Government to seek balance between rich and poor people. The initiatives to have public private partnership in healthcare sector may improve the quality of healthcare services to some extent. But as a constitutional guarantee we need to rule out inequality in access to healthcare. During Covid Pandemic access to quality healthcare services were found much difficult for the middleclass and lower middleclass patients and as a result they were compelled to avail the facility from the much crowded government hospitals putting life at risk. In a way commercialization of medical profession due to workload on healthcare sector, availability of resources, infrastructural crises and challenges in government hospitals and financial forces operating in the field has made effective and affordable healthcare services a big challenge. Right to health and medical care even if guaranteed as a fundamental right but the implementation of the same due to unequal parameters and policies have disturbed the effective implementation of it. After Covid pandemic the Central Government is promoting Ayurvedic Medicines to encourage ayurvedic medicines in India. In recent past the Ayurvedic Pharmaceutical Companies are promoting the drugs and medicines, deviating existing regulatory mechanism and legislative framework.

The digitalization and promotion of such medicines through misleading advertisement on digital platform with magic remedies has been prohibited under the Drugs and Magic Remedies (Objectionable) Act, 1954. Recently the Supreme Court of India passed an order warning Uttarakhand Government for not taking any actions against Baba Ramdev's 'Divya Pharmacy'. In an affidavit filed before the Supreme Court Patanjali Ayurveda's Managing Director, Acharya Balkrishnan tendered apology for misleading advertisement of certain pharmaceutical products. Such advertisements deviates the policy parameters and legislation such as Drug and Magic Remedies (Objectionable) Act, 1954. Since, the advertisement, and overestimation of the claim about the pharmaceutical products were based on unscientific data and advances were made without any scientific enquiry.

#### **Deceptive Medical Advertisements:**

These cases bring into sharp focus a troubling reality: a worrying shift within the medical profession towards prioritizing financial gains over the fundamental duty of care. Laws such as the Drugs & Magic Remedies Act, designed to protect consumers from false claims, become the sword in this legal combat.

Baba Ramdev and Acharya Balkrishna apologized before the Supreme Court for misleading advertisements of Patanjali's medicinal products, averting contempt proceedings. The apology came ahead of their scheduled

appearance in court. Uttarakhand government assured strict action against Patanjali Ayurved, and the Ministry of Ayush requested withdrawal of misleading advertisements. The court had earlier warned of a Rs 1 crore fine for continued misleading ads, prompted by a petition from the Indian Medical Association.<sup>10</sup> In the case of Vini Cosmetics Pvt. Ltd. v. State of Maharashtra (2020)<sup>11</sup> Issues involved allegations of false advertising by a cosmetics company. The Supreme Court reaffirmed the importance of upholding advertising standards and penalizing companies that engage in deceptive practices.

Such misuse of technology through digital platform in promoting medicines with overestimated claims has greater audio visual impact on viewers.

#### **Telemedicine and Remote Monitoring:**

Technological innovations like telemedicine and remote monitoring allow healthcare professionals to provide medical care and consultations remotely. Application of these advancement improve accessibility and efficiency, however, use of these technologies is not free from many challenges, since use of it dilute traditional values and personalize care. Such technology in the form of telemedicine remote monitoring assists in monitoring the patient to provide prompt care. This also helps in improvement of patient self-care, efficient communication, increased patient confidence, visualization of health trends, and greater patient education. Challenges comprised increased workload, higher patient anxiety, data inaccuracy, disorienting technology, financial issues, and privacy concerns.<sup>12</sup> Telemedicine and remote monitoring utilize technology to provide healthcare services and monitor patients remotely. Beyond traditional consultations, telemedicine enables virtual visits, real-time health monitoring, and remote diagnosis, improving access to healthcare, especially in remote or underserved areas. Additionally, it facilitates continuous monitoring of chronic conditions, early detection of health issues, and timely intervention, enhancing patient outcomes and reducing healthcare costs. Moreover, telemedicine has shown promise in improving patient engagement and adherence to treatment plans through convenient and accessible healthcare delivery models.

#### **Artificial Intelligence (AI) in Diagnostics:**

The risk of AI in diagnostics lies in the potential erosion of traditional values such as clinical judgment and human intuition. While AI-powered tools offer superior accuracy and speed in analyzing medical data, over-reliance on these technologies may diminish the role of human expertise and intuition in medical decision-making, potentially compromising patient care.

For instance, if doctors solely rely on AI algorithms for diagnosing medical conditions without incorporating their clinical judgment and intuition, they may overlook nuanced patient factors that could impact the diagnosis and treatment plan. This over-reliance on AI could lead to missed diagnoses or inappropriate treatment decisions, ultimately putting patient outcomes at risk. Despite AI's promise, inherent biases in algorithms raise concerns of inaccurate diagnoses, posing risks to patient well-being. Additionally, privacy risks heighten with

<sup>10</sup> India Today, Kanu Sarda, New Delhi, UPDATED: Apr 9, 2024 23:07 IST, Written By: Vivek Kumar, <https://www.indiatoday.in/law/story/baba-ramdev-apology-before-supreme-court-in-misleading-ad-case-2525308-2024-04-09>, Accessed on 8th May, 2024, at, 4:30pm

<sup>11</sup> (2020) 3 SCC 177.

<sup>12</sup> Pubmed Central, Benefits and Challenges of Remote Patient Monitoring as Perceived by Health Care Practitioners: A Systematic Review, Perm J. 2023; 27(4): 100–111.

Published online 2023 Sep 22. doi: 10.7812/TPP/23.022, PMCID: PMC10730976, PMID: 37735970, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10730976/#:~:text=Recurring%20themes%20emerged%20for%20both,strategies%20will%20become%20increasingly%20relevant>. Accessed on 25<sup>th</sup> April, 2024 at 3:00pm



healthcare data, even when anonymized, demanding robust protection measures. Healthcare professionals must navigate these challenges, ensuring AI's responsible use while upholding patient trust and confidentiality.<sup>13</sup>

### **Robotic Surgery:**

The risks associated with robotic surgery stem from the potential loss of the human touch and empathy in the operating room. While robotic systems offer precision and minimize invasiveness, concerns emerge about the diminished patient-provider connection and the potential for reduced emotional support during procedures. This can impact patient satisfaction and outcomes, highlighting the importance of maintaining a balance between technological advancements and the human element in surgical care.

Robotic-assisted surgery (RAS) entails similar risks as open and laparoscopic procedures, such as infection, bleeding, and anesthesia-related complications. However, unique to RAS are additional risks stemming from potential human error in operating the robotic technology and the increased likelihood of mechanical failures. Malfunctions in various components, including the camera, robotic tower, and instruments, can occur, posing risks of unintended internal burn injuries due to electric arcing from the cautery device. These concerns highlight the importance of thorough training and vigilant monitoring during robotic surgeries to mitigate potential risks and ensure patient safety.<sup>14</sup>

### **Genomic Medicine:**

Genomic medicine involves using an individual's genetic information to personalize medical treatment and disease prevention strategies, aiming to improve healthcare outcomes and tailor interventions to each patient's unique genetic makeup. It encompasses the analysis of an individual's genome to identify genetic variations associated with diseases, drug responses, and other health-related factors, guiding personalized treatment decisions and preventive measures.

Genomic medicine's promise of personalized treatments based on genetic makeup brings hope for improved healthcare outcomes. However, it also raises critical concerns, including patient privacy and equitable access to cutting-edge therapies. Patients fear genetic data breaches, which could lead to discrimination or misuse of sensitive information. Additionally, socioeconomic factors often limit access to genetic testing and specialized treatments, deepening healthcare disparities. Ethical dilemmas abound, from informed consent to the disclosure of genetic risk information. Patients grapple with the implications of genetic testing results, facing potential psychological distress and uncertainty. Thus, while genomic medicine offers groundbreaking possibilities, its implementation must navigate complex ethical and social challenges to ensure patient well-being and equitable healthcare access for all.

### **Health Information Technology:**

Health Information Technology (HIT), encompassing Electronic Health Records (EHRs) and Health Information Exchange (HIE) systems, revolutionizes patient data management and communication in healthcare. EHRs centralize patient records, enabling healthcare providers to access comprehensive medical histories, streamline documentation, and coordinate care efficiently. Similarly, HIE systems facilitate secure sharing of patient

<sup>13</sup> by Jacob Bedi, Healthcare Lead, Opportunities and risks of AI in healthcare, lockton news website, ARTICLES / FEBRUARY 15, 2024, <https://global.lockton.com/gb/en/news-insights/opportunities-and-risks-of-ai-in-healthcare>, Accessed on 1<sup>st</sup> May, 2024 at 05:34am

<sup>14</sup> Tara Kirkpatrick, MD, and Chad LaGrange, MD, Robotic Surgery: Risks vs. Rewards, February 1, 2016, Patient safety network, AHRQ, <https://psnet.ahrq.gov/web-mm/robotic-surgery-risks-vs-rewards#:~:text=Risks%20of%20Robotic%20Assisted%20Surgery,%2C%20robotic%20arms%2C%20and%20instruments>. Accessed on 9<sup>th</sup> May, 2024 at 5:03am

information among healthcare entities, enhancing care coordination and continuity across different providers and settings. However, the widespread adoption of HIT also introduces significant risks, including data security breaches that compromise patient confidentiality and trust. Moreover, the increased documentation burden associated with EHRs contributes to physician burnout, affecting provider well-being and potentially undermining the quality of patient care. Balancing the benefits of HIT in improving care coordination and efficiency with the imperative to address associated risks remains a critical challenge in modern healthcare delivery.

Health Information Technology (HIT) entails risks including data breaches compromising patient privacy, interoperability challenges hindering seamless data exchange, and technical glitches leading to medical errors. Additionally, the documentation burden of electronic health records (EHRs) contributes to physician burnout, while information overload hampers clinical decision-making. Legal and regulatory compliance issues, such as HIPAA violations, pose further risks, with non-compliance carrying legal penalties and reputational damage. Moreover, overreliance on HIT systems may result in disruptions in care delivery and patient management during system failures. Balancing the benefits of HIT with these risks is essential for ensuring patient safety and quality care delivery.

### **Conclusion:**

The intervention of advance medical technology has radically changed the dimension of medical profession. Undoubtedly, the technological innovations are meant for prompt, accurate and advanced clinical services to the patients. However, there are many challenges in implementation of advance technology at rural masses. Right to health is guaranteed as fundamental right by way of interpretation by the Supreme Court of India and Right to Health also includes, accessible health facilities to the common man. Increased demand of new technology is indispensable for healthcare sector, however, these advancements of technology in medical profession has really made the profession expensive and unaffordable for the common man.

Digitalization of medical profession has also posed many challenges of privacy, data protection and security concerns and confidentiality of the patients. The misuse of technological intervention also provides a platform for misusing the same for commercialization of medical profession compromising values and nobility. We need to have a control mechanism to regulate misuse of such technology either through regulating authorities or legislation. The existing infrastructure especially in government hospitals is not sufficient enough to facilitate digitalization and use of technology for rural masses. Hence, check and balance of technology in medical profession would probably help in seeking balance of affordable healthcare services are required in a populated country like India.