

Woman Healthcare With The New Digital Innovation & Technology: A Socio-Legal Analysis

Dr. Anjali Dixit^{*1}, Dr.P.Salomi², Rakhee Chaudhary³, Dr. Kavita Shukla⁴, Dr Nidhi Nalwaya⁵, Jyoti Ramola⁶, Dr.Sukriti Priyadarshini⁷, Priyanka Gupta⁸

¹Sr. Associate Professor of Law, SOL, Lingaya's Vidyapeeth (Deemed to be University), Faridabad, Haryana and Visiting Professor, Department of Law, KAAF University College, Gomoa Fetteh, Kakraba-Kasoa, Ghana (West Africa)

²Professor and Head, P. Ramireddy memorial College of Pharmacy, Utukur, Kadapa. Andhra Pradesh

³Professor, Department of Physics, School of Basic and Applied Sciences, Career Point University, Kota, Rajasthan, India

⁴Professor & Principal, Hitkarini College of Pharmacy, Dumna Road, Jabalpur (MP)

⁵Post Doctoral Research, Associate Professor, Faculty of Commerce, Parul University Vadodara (Gujarat)

⁶Assistant Professor ECE department, Graphic Era Hill University, Dehradun (UK)

⁷Associate Professor of Psychology, Career Point University, Kota (Rajasthan)

⁸Assistant Professor, Rajiv Gandhi Institute of Pharmacy, Faculty of Pharmaceutical Science & Technology, AKS University, Sherganj Panna Road, Satna M.P

*anjaldixitlexamicus@gmail.com

How to cite this article: Anjali Dixit, P.Salomi, Rakhee Chaudhary, Kavita Shukla, Nidhi Nalwaya, Jyoti Ramola, Sukriti Priyadarshini, Priyanka Gupta (2024) Woman Healthcare With The New Digital Innovation & Technology: A Socio-Legal Analysis. *Library Progress International*, 44(3), 76397647.

Abstract

In the era of Artificial Intelligence, digital healthcare system specially for woman in India is taking its path with the new challenges and achievements too. In the digital age still in the various part of the India gap in digital access is found. It's need of time that digital health care must be reached out in the next corner of India. Drawing on critical reviews from multiple field participants this articulation piece of literature argues the role of digital and technology in the field of healthcare system specially for woman. It is also tried to highlight the risk of misinformation in the prospect of healthcare, political polarization and digital surveillance system of India in the field of digital healthcare system for women. Fem-tech digital system through the use of various technologies to track the periods and fertility are empowers woman somehow. Their procreative health can be tracked digitally by 'woman-oriented health apps'. 'Value-based healthcare System' is the need of the modern techno friendly digital healthcare system. This paper focused on the health-related challenges faced by the females in India especially menstrual related issues with the Caesarean section of pregnant females, e-health, telemedicine and security related issues.

Keywords: Artificial Intelligence, Digital Healthcare system, Digital surveillances system, Value based healthcare system, E-Healthcare, Telemedicine

Introduction

Covid-19 pandemic and healthcare crises had an impact on the everyone's life including the economy of the nations. Factually, children and females are prone to mentally, psychologically, sexually and biologically by medical syndromes. In the techno-scientific era technologies also touched the medical and healthcare sectors. The mental well-being & physical health of women became an essential component of any nation. Indian medical and healthcare sectors are mainly focuses on children's & women's health with the health & financial planning. This paper examines the advancements in digitization in the medical and health field, with a focus on children's & women's health. This study primarily focuses on women's health because women are at the center of all family activities and chores and later play a significant role in the growth of the national economy. In the paper, the developing scenario of various rural and urban cultures takes women as its central character as a hypothesis. The

motivation behind this paper is to survey the huge effect that digitalization has had on India's medical services industry and on women's' strengthening. women's' improvement is emotionally assessed in view of various standards, including capability, enterprising undertakings, monetary freedom, abilities to think, influential place, etc. in their homes and working environments.

Drawing on critical reviews from multiple field participants this articulation piece of literature argues the role of digital and technology in the field of healthcare system specially for woman. It is also tried to highlight the risk of misinformation in the prospect of healthcare, political polarization and digital surveillance system of India in the field of digital healthcare system for women. Fem-tech digital system through the use of various technologies to track the periods and fertility are empowers woman somehow. Their procreative health can be tracked digitally by 'woman-oriented health apps'. 'Value-based healthcare System' is the need of the modern techno friendly digital healthcare system. This paper focused on the health-related challenges faced by the females in India especially menstrual related issues with the Caesarean section of pregnant females, e-health, telemedicine and security related issues.

Paper Design

This paper is structured to explain the role of tecno- scientific healthcare system in the development of woman empowerment. Critical analysis of medical healthcare policies, schemes and digital healthcare framework in India in the perspectives of the legal and Constitution of India.

Objectives

- To survey the extraordinary commitment of digitalization in the medical and healthcare services in India, which further ended up being a shelter and a stage toward females strengthening
- The submitted report contains a few eye-opening outcomes that serve as the basis for this study in order to gauge the outcome of the survey of the various participants.

Methodology

The research methodology for a 'socio-legal analysis of women's healthcare in the context of new digital innovations and technologies' involves a multi-faceted approach. Begin with a comprehensive literature review to understand existing healthcare digital systems and technological advancements.

With the help of literature review, a questionnaire was put together to gather insights on the practical implications and legal concerns. Legal analysis was integrated to assess regulatory frameworks and privacy concerns. Finally, case studies were used to illustrate real-world applications and challenges, providing a holistic view of the intersection between technology, law, and women's health. The participant's confidentiality was maintained throughout the process.

Limitations of the Study

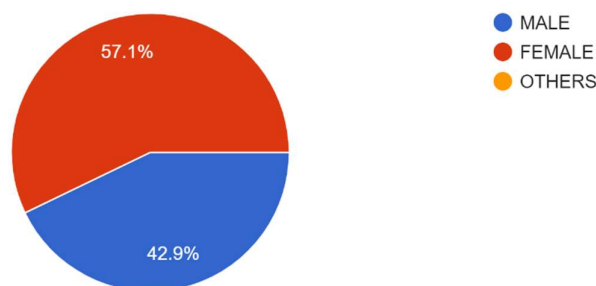
Current study on, 'Woman Healthcare with the new Digital Innovation & Technology: A Socio-Legal Analysis' is essentially seen a progressive effect. Overall study is based on the various measurements like government policies and schemes and digital healthcare systems in the India.

Study group

In this study 57.1% male and 42.9% females participated.

Gender

14 responses

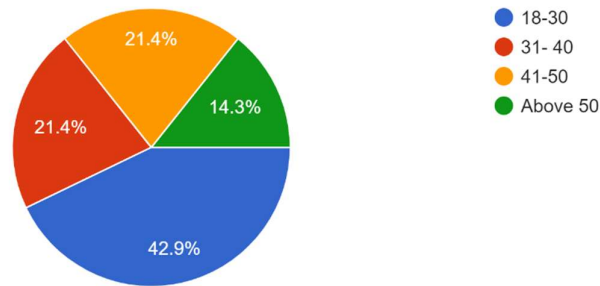


The stakeholders under this study are between the four group of ages.

42.9% are between the age group of 18 years to 33 years age group, 21.4% are between the age of 31 year to 40 years, 21.4% are the 41 years to 50 years age group and 14.3% are between the age group of above 50 year of age group.

Age

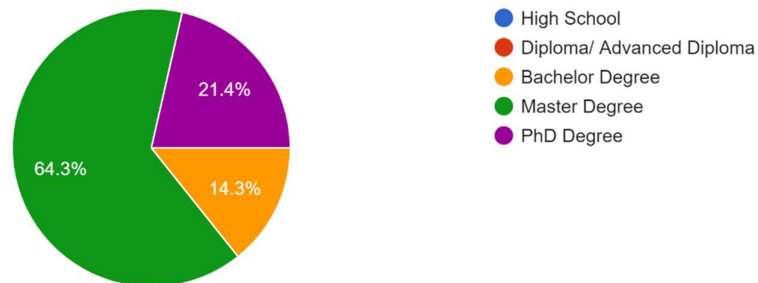
14 responses



Stakeholder are from different educational groups. 64.3% had masters' degrees in different disciplines; 21.4 % had Doctorates degree in different subjects ; and 14.3% had bachelor's degrees in multiple subjects.

Education level

14 responses



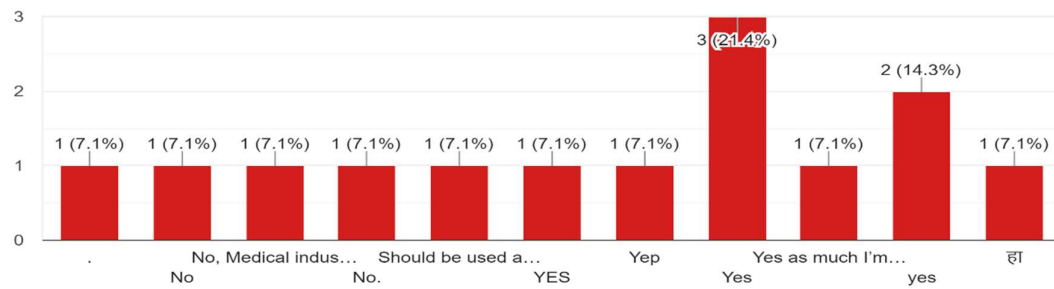
Study & results

Above mention group of peoples answers the questions with his/her free consent.

On its first question what kind of health issues faced by the females in India most of answered some common physiological based health problems like, knee and joint pain problem, Menstrual cycles related issues like, hygiene issues, still Periods, sexual disease, pregnancy related complications are taboo at some extent & there is no open talking for solution. Some discussed on the breast cancer, gynecology related problems, OBCT, PCOD, Early menopause, Miscarriages, UTIs etc., nutritional, diseases related to poor hygiene, hypertension and diabetes.

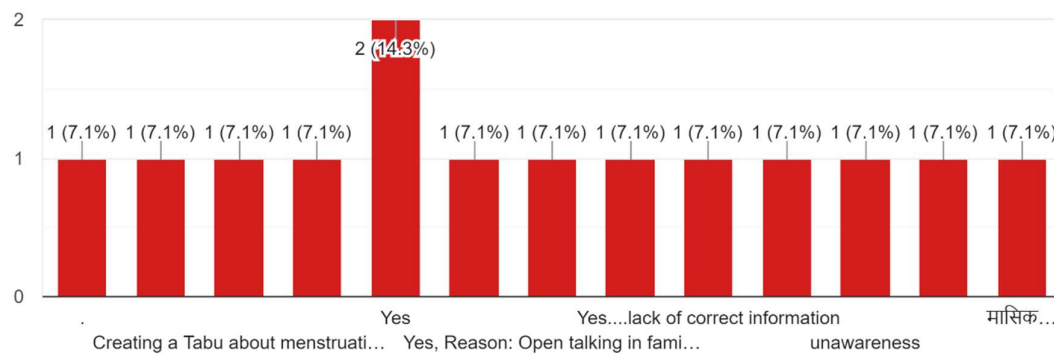
On the second question that the Caesarean section in females only be used in complicated pregnancies, most of answered affirmative.

Are you agree that Caesarean section in females only be used in complicated pregnancies?
14 responses



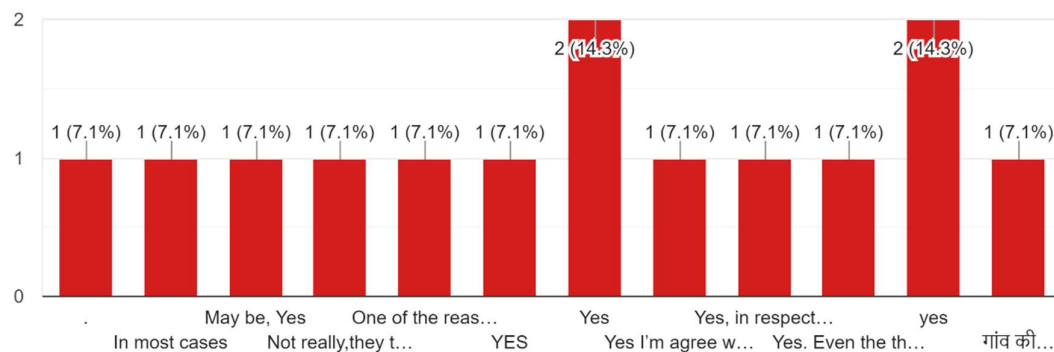
Third question of the study based on the female menstrual care, get mixed answers.

Do you agree most of females in India are not aware about the menstrual care? Reason for that
14 responses



On the fourth question that females in India not caring about her health issues, due to the expensive medical care, we get affirmative answers.

Are you agree on that females in India not caring about her health issues, due to the expensive medical care?
14 responses



Fifth question basically deal with the digital technologies do women use regularly for health-related issues, both for themselves and for any others (family members or friends). Most of the females answered that they use mobile calls and what's app facilities to call Doctors or medical staff. Very few are aware about the Medi-buddy kind of digital source of Doctors advice that maintain privacy with good advice. Very few agree that they use

online Consultation, Period tracking apps, Pregnancy related apps portable Vital monitor device steps counting on digital watch. Few said that in nowadays they have seen many women's are using digital hot bags and hot pads for the cramps during menstruation. Surprisingly, in this digital era we get negative answers. Still villages are still using Indian traditional methods they are not aware about the digital health care system of India.

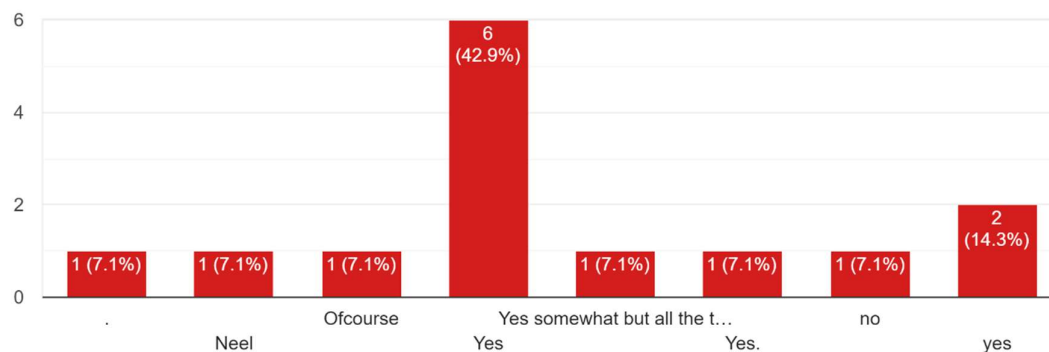
One of participant said that from his/her point of view in digital health care most helpful thing is that they receive medical advice and prescription instantly, some girls hesitate to convey their message to doctors directly but by this digitalisation they feel comfortable to tell their problems.

On the next question that What kinds of digital health technologies would they like to see developed in the future? They answered that they prefer easily accessible digital healthcare system, painless treatment & fast recovery, Helicopter Ambulance service availability for common people, they demand various digital Apps on their healthcare, home visit with sophisticated diagnostics, digital facility related to proper care during menstrual cycle, home automation and mostly cooking area and menstrual care, period tracker app develop by government, regarding C section delivery or breast cancer technologies and there are many more.

On the next question whether that Indian Government should take strict action against the 'Digital Medical Negligence'? Get affirmative answers.

Are you agree that Indian Government should take strict action against the 'Digital Medical Negligence'?

14 responses



On the part of their opinion on the digital health care system & laws in India, they answered that –

- Laws Need to be revamped and technology should be made accessible to all women
- Currently very poor laws & it's implementation
- Yet to evolve in a better sense
- Still weak
- Information dissemination and modification of Law
- there are good laws but needs effective implementation is required and need to explore the science behind traditional Indian medicinal knowledge
- government should strict provisions for use health care app
- it should take more to steps to impose.
- Digital health is the use of digital technologies for health care purposes. The field encompasses a wide variety of digital health technologies and subfields, including health information technology (IT) And Healthcare law is intended to protect patients' rights and well-being.

Discussion of this paper is based on the above study.

Digital health

'Digital health' terminology used for such medical and healthcare facilities which delivered by the use of digital technologies². WHO includes 'a broad umbrella term like e-health', in which 'Artificial Intelligence'

² Nishith Desai Associates, *Digital Health in India: Legal, Regulatory and Tax Overview* (2020), available at http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Digital_Health_in_India.pdf (accessed July 20, 2024).

and ‘Genomics’ and ‘Big data’ includes³.

In simple word Digital Health includes various kinds of technologies base tools and digital services to connect human being to healthcare system and facilities⁴.

In the modern scientific and Artificial Intelligence era ‘Robotic Doctors’, ‘Robotic Assistance in surgery’ is very common. To maintain the digital records of the patient is now become very easy.

Digital healthcare system basically based on the concept of the ‘reinvent—and reinvigorate’.⁵

Digitalization of Medical/Healthcare system in India

With the help of WHO (World Health Organisation), internationally many digital healthcare policies and guidelines are found in the many countries⁶. Object of digitalization of healthcare system is to strengthen the medical and healthcare system worldwide by using the Artificial intelligence-based technologies for every stakeholder⁷. Across the world, all these policies running effectively⁸.

In the year 2018, General Data Protection Regulation (GDPR) came in light and adopted by India and southeast Asian countries. In the year 2011 Singapore introduce the National Electronic Health Record (NEHR) system to strengthen the digital healthcare system.

Constitutional Shield for Digital Healthcare

Constitution of India is the guarantor of the right to life and personal liberty. Healthcare also the part of this fundamental right⁹. It also ensure that every citizen of India get opportunities without any kind of discrimination on the name of religion, caste, race or gender¹⁰.

Digital Health & Technologies

³ WHO World Health Organization, *WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening* (2019), available at <https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf> (accessed July 20, 2024).

⁴ Nishith Desai Associates, *Digital Health in India: Legal, Regulatory and Tax Overview* (2020), available at http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Digital_Health_in_India.pdf (accessed July 20, 2024).

⁵ S. Daley, *32 Examples of AI in Healthcare That Will Make You Feel Better about the Future*, BuiltIn (2020), available at <https://builtin.com/artificial-intelligence/artificial-intelligence-healthcare> (accessed July 20, 2024).

⁶ World Health Organization, *Global Strategy on Digital Health 2020–2025* (2021), available at <https://www.who.int/docs/default-source/documents/g4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf> (accessed July 20, 2024).

⁷ consumers, health professionals, healthcare providers

⁸ C.E. George et al., *Health Issues in a Bangalore Slum: Findings from a Household Survey Using a Mobile Screening Toolkit in Devarajeevanahalli*, 19 BMC Public Health 456 (2019), available at <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-019-6860-4> (accessed July 20, 2024).

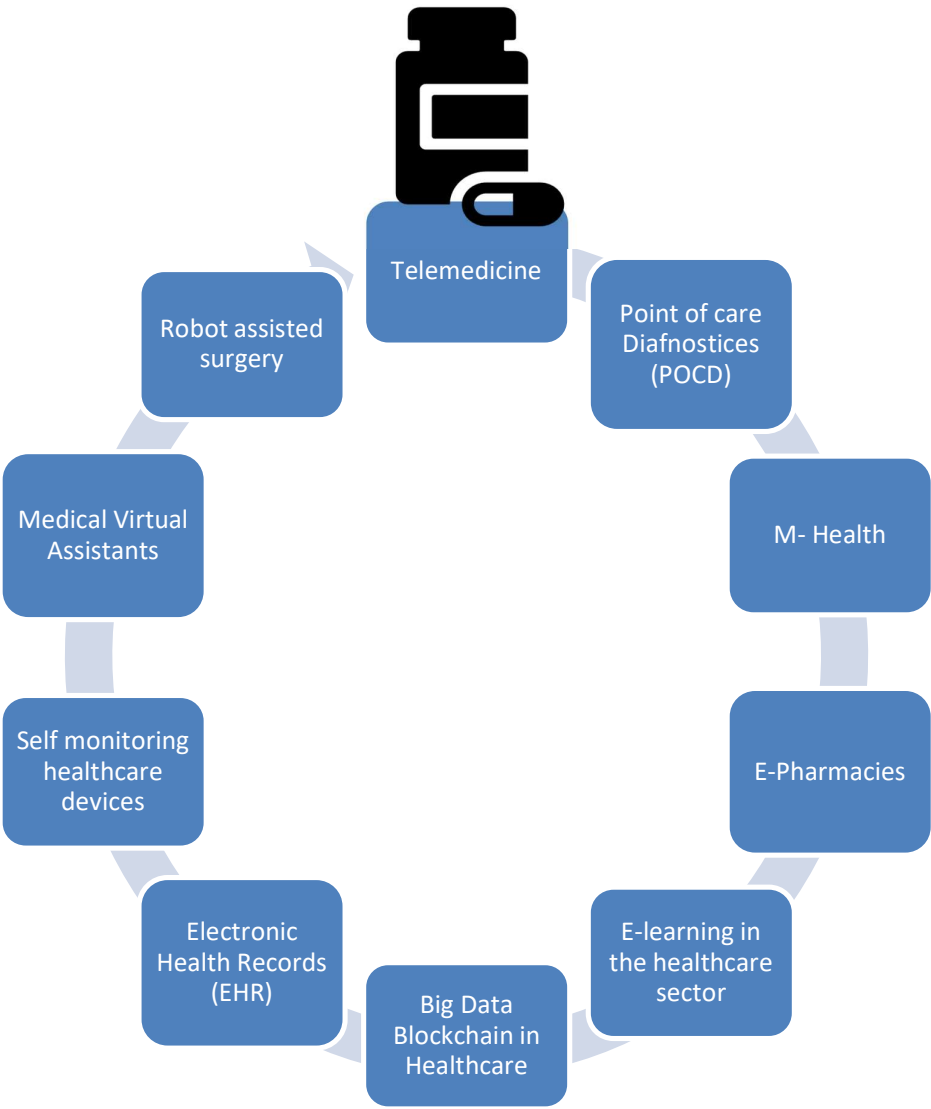
⁹ Constitution of India, 1950, Article 21

¹⁰ Constitution of India, 1950, Article 14 & Article 15

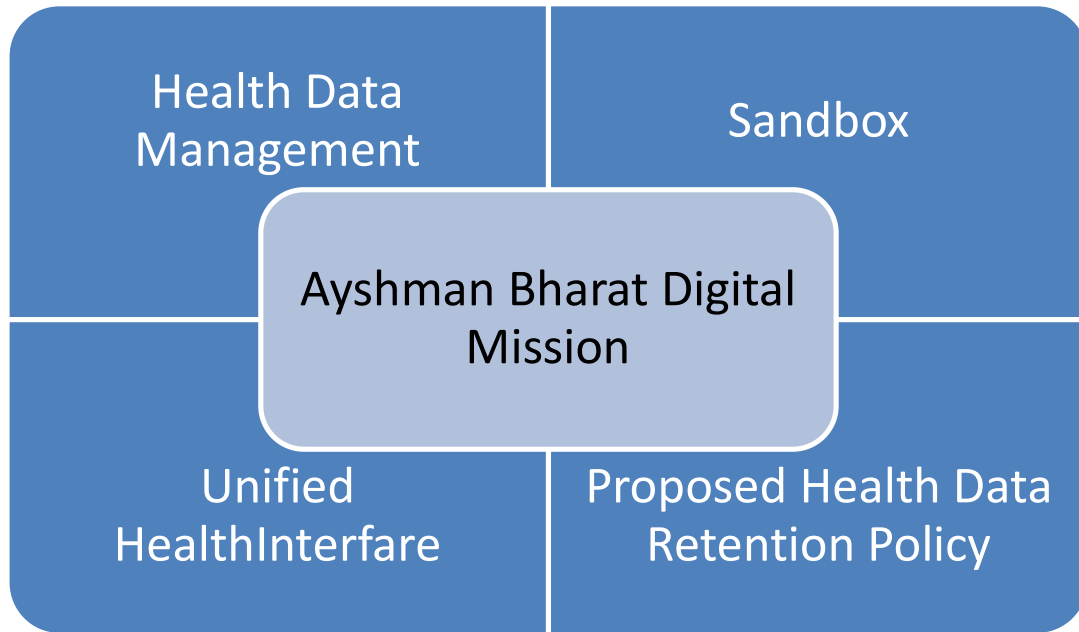
Under the digitalization of medical and healthcare system mention below applications are in use¹¹-

Digital Missions in India

Under the Ayushman Bharat Digital Mission mention below are included-



¹¹ S. Reddy, *Use of Artificial Intelligence in Healthcare Delivery* (2018), available at <https://www.intechopen.com/books/ehealth-making-health-care-smarter/use-of-artificial-intelligence-in-healthcare-delivery> (accessed July 21, 2024)



Law & Regulatory framework in India

In India mention below laws and regulatory framework are functions-

- ❖ **Drugs and Cosmetics Act, 1940 read with Drugs and Cosmetics Rules, 1945 and Draft E-Pharmacy Rules, 2018:** - In India for manufacturing the drugs to sale and distribution all are under the one regulatory framework as framed under the Drugs and Cosmetics Act, 1940 read with Drugs and Cosmetics Rules, 1945 and Draft E-Pharmacy Rules, 2018.

Central Drugs Standards Control Organization (CDSCO) is the main authority functioning under the supervision of Government of India with the name as National Regulatory Authority.¹² Which also govern the Digital healthcare system¹³ including the E-pharmacies¹⁴.

High Court of Madras¹⁵ said to Central Government that only prescription medicine is sold online pharmacies. High Court of Delhi¹⁶ passed an interim order regarding the online licensing on E-pharmacy.

- ❖ **The National Medical Commission Act, 2019 and The Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002:-** Medical education and medical profession are regulated by the National Medical Commission¹⁷. Each and all registered medical practitioners have to follow the ethical rules as framed by MCI for them while writing the medicines¹⁸ it also includes the digitalization of the medical records.

- ❖ **Telemedicine Practice Guidelines, 2020:-** With the partnership of NITI Aayog, MCI set the guidelines for Telemedicine Practices in India¹⁹. This guideline provide the proper setup with the proper communication through the audio/video/text.

¹² Central Drugs Standard Control Organization, *Home Page*, available at [https://cdsco.gov.in/opencms/opencms/en/Home/#:~:text=The%20Central%20Drugs%20Standard%20Control,Authority%20\(NRA\)%20of%20India](https://cdsco.gov.in/opencms/opencms/en/Home/#:~:text=The%20Central%20Drugs%20Standard%20Control,Authority%20(NRA)%20of%20India) (accessed July 22, 2024).

¹³ Central Drugs Standard Control Organization, *Functions*, available at <https://cdsco.gov.in/opencms/opencms/en/About-us/Functions/> (accessed July 22, 2024).

¹⁴ Drugs and Cosmetics Act, 1940, Section 26 B

¹⁵ *The Tamil Nadu Chemists and Druggists Association v. Union of India & Ors*, W.P. No. 28716 of 2018

¹⁶ *Dr. Zaheer Ahmed v. The Union of India & Ors.*, W.P.(C) No. 11711 of 2018.

¹⁷ The National Medical Commission Act, 2019

¹⁸ Indian Medical Council (Professional conduct, Etiquette and Ethics) Regulations, 2002

¹⁹ Telemedicine Practice Guidelines, 2020

- ❖ **Drugs and Magic Remedies (Objectionable Advertisements) Act of 1954 and The Drugs and Magic Remedies (Objectionable Advertisements) Rules of 1955:-** To regulate the advertisements of the medicines in India a offline and online framework is set under the Drugs and Magic Remedies (Objectionable Advertisements) Act of 1954 & Rules, 2020.
- ❖ **Drugs and Magic Remedies (Objectionable Advertisements) Act of 1954:-** All establishments related to clinical practices are set under the Drugs and Magic Remedies (Objectionable Advertisements) Act of 1954.
- ❖ **The Telecom Commercial Communication Customer Preference Regulation (TCCCPR), 2018:-** This TCCP Regulation regularize the unsolicited commercial communications.
- ❖ **Consumer Protection Act, 2019 and Consumer Protection (E-commerce) Rules, 2020:-** Patient and their attendants are also treated as consumer under the Consumer Laws and are liable for the remedies if their rights violated.

Protection of Digital Healthcare Data

Although digitalization helps human being to easily and quickly access the Medical and healthcare facilities on their door steps, but it also very dangerous on the part of their privacy. To protect the rights of the patients Indian Government enacted mention below laws and regulations.

- ❖ Information Technology Act 2000,
- ❖ Information Technology (reasonable Security Practices and Procedures and Sensitive Personal Data Or Information) Rules, 2011
- ❖ Information Technology (Intermediary Guidelines and Digital Media Ethics Code). Rules, 2021
- ❖ The Clinical Establishments (Registration and Regulation) Act, 2010
- ❖ The Clinical Establishments Rules, 2012
- ❖ Electronic Health Record (EHR) Standards – 2016
- ❖ Digital Personal Data Protection Act, 2023
- ❖ Draft Health Data Management Policy, 2022
- ❖ Data Security Council of India Privacy Guide for Healthcare, 2021

Women and Digital healthcare system

Due to the cultural and economical barriers still in the year 2024 most of the women are faces hindrance to avail the medical facilities. Although, Indian medical and healthcare system digitalized and equipped with the Artificial Intelligence. From telemedicine app to digital shops still women are not aware or familiar to access the healthcare facilities.

In the rural areas and few urban areas women face challenges in access to digital healthcare platforms to consult with doctors or order for medicines.

Although, Digi-world empowering the women by mobile apps to trac their menstrual cycles, track their pregnancy and other health related information they can easily accessed. Various E-learning platform are built to educates females on the part of proper hygiene practices and family planning.

Conclusion

Last couple of decades, with the use of Artificial Intelligence and other technologies, healthcare system in India touches the many high skies. Now, in the infotech era every male or female equally access the healthcare facilities and medicines with out any delay or hurdles. All are now under the legal and ethical framework as set by the Government of India time to time by enacting legislations, policies and schemes for citizens including females. Everything is now on the door steps. They can track their menstrual cycle to reproductive system²⁰. Although there is a need of watch dog-based vigil surveillance system to control the misinformation and misuse of this healthcare system. It needs more research on this part with government fund and support.

Conclusively, Digitalization of medical and healthcare facilities now big achievement for healthy and prosperous India.

²⁰ *AI in IVF: A Fertile Field*, available at <https://www.pharmaceutical-technology.com/comment/ai-in-ivf/> (accessed July 23, 2024).