



## Pratidhwani the Echo

A Peer-Reviewed International Journal of Humanities & Social Science

ISSN: 2278-5264 (Online) 2321-9319 (Print)

Impact Factor: 6.28 (Index Copernicus International)

Volume-XIV, Issue-II, January 2026, Page No. 266-272

Published by Dept. of Bengali, Karimganj College, Sribhumi, Assam, India

Website: <http://www.thecho.in>

DOI: 10.64031/pratidhwanitheecho.vol.14.issue.02W.073



## Digital health literacy: A Quest for improving India's Rural Health

**Joy Mukherjee**, *Research Scholar, Dept. of political science, The university of Burdwan, West Bengal, India*

Received: 07.01.2026; Accepted: 13.01.2026; Available online: 31.01.2026

©2026 The Author(s). Published by Dept. of Bengali, Karimganj College, Sribhumi. This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>)

### Abstract

While India tends to prioritize digital health services for the advancement of healthcare, this is a major impediment due to lack of awareness among the people about digital health education. Digital health is not just about knowing digital technology but also choosing the right digital information that is essential for human health. This will help in increasing awareness among the rural masses, promoting self-reliance and digital participation. Despite the presence of primary health centres in rural areas, they lack adequate doctors, staff and medical equipment. As a result, the rural health system has become paralyzed, so to come out from this situation digital health is a good option. Initiatives like Telemedicine are very effective in improving people's health, but in the absence of health literacy, it also becomes ineffective. Due to lack of literacy, the benefits of the government's digital health program do not reach the villages, which further exacerbates inequality.

**Keywords:** Digital health, public health, Telemedicine, Digital technology, Community health

### Introduction:

Public health is of utmost impotence in a country with such a large population as India. Therefore, the government is paying special attention to this. Although India is economically strong, but being a develop country, a part of its budget has to be spent on many other aspects beside health. As a result, the budget allocated for the health development sector is not enough. Even in that budget, due to various type of corruption, that little money is not being spent properly in the health sector. As an alternative the privet hospitals have grown largely but their treatment cost is skyrocketing beyond the reach of the ordinary rural poor people, for that reason, poor people are going to a Hakim or a local Ayurvedic so-called consultant who does not have experience and does not have the right information about disease instead of going to an experienced doctor.

One of the reasons people don't go to the doctor, especially the surgent, is wrong treatment. In India, 98,000 out of 5.2 million patients die every year due to wrong treatment and negligence of doctors and hospital staff (Manuputra Academy, n. d). And it is very difficult for the general public to prove the negligence of this treatment through the legal process, so the trust of the doctor has been eroded among the people a tendency is born in the human mind that a symptom will resolve on its own, because of which the diseases

become big for not getting treatment at the right time. Due to various reasons such as systemic negligence, legal complications, crisis of trust, etc., people fall prey to delayed treatment instead of early intervention.

### **Methodology:**

The study is conducted based on secondary data. Therefore, the researcher focuses facts and information that has been collected from book, newspapers, article and website available in public domain.

According to the Global Economy 2019 report, India has 0.9 doctors in every 1000 people, which is below the WHO's recommendation that 22 health workers need in every 10000 people. Under such deficiency of health workers including doctors, in the health sector and uneasy access to medical facility often result in minor illnesses becoming serious. [Press Information Bureau \(PIB\)](#) in its article of July 2022 states, India's doctor-population ratio is 1:834 including AYUSH. It indicates India's 80% availability of registered allopathic doctors, that is of course better than the WHO standard of 1:1000. Another PIB's disclosure, released in April 2025 states that the ratio is approximately 1:811, based on updated registration numbers for allopathic and AYUSH practitioners. (Press Information Bureau, 2025). Another finding reveals that various chronic diseases such as diabetes, high blood pressure, and cancer, etc are spreading rapidly in rural areas. It indicates that lack of timely and proper treatment for these diseases increase the risk to the public health (TheGlobalEconomy.com.2019). In the remote region, this data is much more alarming; there are only 3 doctors in every 10000 people, and rural hospitals have only 0.2 beds per thousand people. For this reason, the health services in the remote districts of the country become miserable. Men are not even getting the primary health services properly. Also, the majority of doctors in India are from urban areas; out of the total doctors, 74% provide healthcare services in big cities. On the other hand, rural hospitals have only 0.2 beds per 1000 people (Kishore, 2014).

In general terms, digital health literacy refers to the ability to effectively utilise technology within the healthcare sector for the betterment of public health. Health literacy means understanding health-related information, use of that information, and making decisions. However, many researchers define it differently. Nutbeam defines health literacy in a three-step model – functional health literacy, interactive health literacy, and critical health literacy (Urstad et al., 2022). On the other hand, the WHO describes health literacy as a type of power that enables a person to understand health-related information and services easily. Norman & Skinner, in their 'Lily model,' describe six fundamental principles of e-health literacy, which are: 1. Traditional literacy refers to normal reading, writing, and general understanding 2. Health literacy means grasping and using health-related issues according to needs 3. Information literacy means knowing from where data will be collected and how it will be used 4. Scientific literacy means to understand how the result of the research is found through the scientific process 5. Media literacy means analysing the information in TV, newspapers, and social media reports, and also criticising them. Computer literacy means using a computer, a mobile phone, and other digital platforms. These six literacies together seen as a lily flower, where the six literacies are seen as six petals, and the central e-health literacy remains (Norman & Skinner, 2006).

Before implementing digital health literacy in practice, it is necessary to understand the problems at the rural level in terms of public health. In India, approximately 70% of the total

population lives in rural areas, but there are only 30% doctors for them. (Hindustan Times. 2014, July 18). *Only 33% govt docs are in rural areas, where 70% India lives.* There are a lot of problems for implementing effective health services in rural India, but among them, one of the major problems is the shortage of human resources (HRH). That is a lack of sufficient numbers of doctors and other health workers. Apart from this, there are also other problems like medicines running out, equipment being bad, and many times, the quality of health care for everyone decreases due to the lack of skill among the hospital staff. Currently, the presence of private hospitals means there are more doctors and nurses in cities than in villages (Gupta et al., 2024).

Under this alarming situation of public health in rural India, one may recall a significant event in the development of digital health in the year of 2001 with the launch of India's first telemedicine service by ISRO's pilot project. Considering the rising developmental need it in an effort to execute the space technology For Health care and Education as a part of GRAMSAT programme, first launched this pilot plan for telemedicine. ISRO's telemedicine programme proves that it is not only famous for its achievements in satellite launch vehicles and space exploration but also significantly contributing to the quality of life and good health of everyday people. Rural doctors are also increasing their skills by getting in touch with super speciality hospitals. ISRO's satellites are providing health connectivity in remote areas like Lakshadweep, Himalayas, Andamans, etc. (Satyamurthy & Bhaskaranarayana, 2001).

If the patient can't go to the hospital, the Telemedicine plan comes from the idea of bringing the hospital to the patient. Telemedicine was first used in the Netherlands in the early 1900s. At that time, the patient's heartbeat was sent over the telephone. Thereafter, telemedicine began to be used in various places in Pennsylvania, USA. From 2012, the use of telemedicine led to a huge decline in patient hospitalization data around the world. The number of different patients decreases. It has reduced mental health hospitalizations by more than 40%, reduced the number of heart failure patients by 25%, and reduced the number of admissions for diabetes and COPD by nearly 20%, saving patients and health professionals from spending a lot of money around the world. (Mahar et al., 2018). It is also very effective in the treatment of skin diseases through which both diagnosis and follow-up can be done (Thomas, J., & Kumar. 2013). After that, during the first COVID-19 lockdown, e-Sanjivani OPD was launched as a tele-consultation portal on 13th April (PIB 2021). In the pandemic period, CONTEC (National Teleconsultation Centre AIMS, New Delhi) was launched, whose job was to provide treatment to COVID-19 patients by keeping doctors across the country connected with AIMS 24hour (Venkatesh et al., 2022).

The Government of India has set up a Telemedicine Task force by the health Ministry for ensure effective implementation of telemedicine to address the practical issues of all aspects of telemedicine and technological inertia. Tele-continuing Medical Education has been provided in rural areas where people are less health conscious and the number of doctors is also less, so that people do not suffer from health problems in remote areas where there is a shortage of doctors and they can get the right treatment in a timely manner. Various hospitals in India have been included in telemedicine such as mammography services at Sri Gangaram Hospital, Oncology services at Regional Cancer Centre, Thiruvananthapuram and surgical services at Sanjay Gandhi post Graduate Institute of Medical Sciences (Shah,

2023). In a country of such a large population like India, telemedicine is no less than 'Sanjeevani' in terms of human health.

Telemedicine in India is being introduced by the Board of Governance that lays down norms for telemedicine training, scope, application, etc. For telemedicine training, a mandatory three-year online course for doctors has been introduced to teach how to treat patients with the help of technology. Insurance coverage plays an important role in the introduction of telemedicine services and is beneficial to both the insurance company and the patient, as telemedicine services are cost-effective and provide quick care to the patient in a short time, which in turn helps in eliminating major diseases before they occur, resulting in the benefit of both the patient and the insurance company (Shah, 2023).

West Bengal's telemedicine service Swasthyingit has provided health services to more than 7 crore sick people. In recent incident, an elderly woman from Burdwan district of West Bengal complained of severe abdominal pain. At that time, she was given teleconsultation through the Swasthyingit portal and was immediately referred to the hospital and recovered.

Digital health services have been chosen as the only successful solution to solve the HRH (human resources health care sector) shortage and to improve the healthcare services of the rural people. It is not luxury; it is a necessity, an innovative effort to improve human health with the help of technology. The government takes various steps to promote digital health, like Ayush Bharat Digital Mission (ABDM), esanjivani OPD, Digital India campaign, Telemedicine etc.

One of the biggest problems of medical treatment in rural areas is accessibility; health treatment does not reach to everyone; telemedicine emphasises more on this and tries to solve it. APOLLO Health is South Asia's largest telemedicine healthcare. According to WHO, telemedicine includes not only medical work but also education, research and even training of health workers. Currently, India is working on the following aspects of telemedicine: 1. National rural Telemedicine network 2. National medical college network. 3. ONCONET (national cancer network) (Venkatesh et al., 2022).

Ayushman Bharat Digital Mission (ABDM) has been provided by the government for the purpose of providing digital health in India. It creates a health account (ABHA) for the citizens of India and provides with a number to store every person's health information. Not only patients, but all healthcare providers, diagnostic labs, and healthcare institutions have been digitally registered here. A digital health ecosystem is built by the Government of India through information sharing; its sole purpose is to provide low-cost health care to all at the right time by storing and sharing health records in one place. As of April 5, 2025, 76 crore ABHA were generated. At the same time, 5.95 lakh health workers and 3.86 lakh health institutions were included in this account. This huge number of registrations is a testimony to the fact that while digital health services were established during COVID-19, their practical application and usage is not limited to COVID-19 but are expanding beyond that, and India is well on its way to establishing itself as a digital healthcare provider country.

A country's economic structure will be strong when the government prioritises health and provides healthcare infrastructure for its people, including digital health resources. Approximately 68% of the population in India lives in rural areas, but most of them are unable to access basic healthcare facilities. This is due to their low income and lack of access to a transportation system, which prevents them from accessing available and affordable

healthcare. Also, the infrastructure in rural areas is limited. So, for the rural and low-income population, they need an accessible, available, and affordable health care system. Before making people in rural areas aware of digital health, what is needed is to create a good internet network. Because the initial level of informing society about digital health is the knowledge of ICT among people, without the help of the rural population, the economic backbone of India can't be strong (Taqi et al., 2017).

If a community has access to ICT, the next step will be to establish digital health literacy. In other words, to bring digital health literacy, the first need is to have ICT infrastructure and providing ICT education among the people. It is very challenging to make digital health a reality in practice. There is a wide gap between policy making and those performed at the grassroots level about digital health. Digital health faces a number of challenges in remote areas, some of which are-

1. Lack of internet infrastructure- at present, the government of India claims that almost everywhere in rural India has universal internet access, but the number of high speed and uninterrupted fixed broadband is very limited. Rural people are solely dependent on mobile data which is extremely slow and unstable. Only 3-8% households have optic fibre cables in cities where the number is more than 15%. In other word, it can be said that despite of coverage internet services in rural areas, there is no quality and speed. Government reporting alone does not mention limited practical usability and speed in the number of tower connections. This means that, the digital divide is no longer judge on the basis of just the existence of the internet versus non-existence, but on the basis of low quality versus high quality of internet (Thomas, 2025).
2. Cost of constraints- One of the many problems faced by people in rural areas is the financial situation. According to the data for 2022-23, 32.5% of the rural areas are still in the BPL category. It is almost impossible for these people who don't even have two meals a day to buy these costly digital devices. Again, although if it becomes possible to buy a device, it is not possible to bear the cost of regular data (Upadhyaya, 2024). Despite the creation of digital infrastructure, there is a lack of digital training among the people, especially among the elderly people, they face a kind of fear when it comes to using digital devices. And the government not taken any serious intentional steps to remove this inertia (Upadhyaya, 2024).

Digital technology has made great progress since the 21<sup>st</sup> century; since then, the term digital governance has been widely introduced. The government is making extensive use of digital technology to inform about health-related matters. The Indian government has taken various digital initiatives in health-related areas to improve the lives of people in rural areas, like Ayushman Bharat, telemedicine, HIMS, and Digital Therapeutics. Despite overcoming various challenges, India is currently transforming digital health governance. But to run a digital health system properly, having technology alone is not enough; good governance is also essential. The successful implementation of universal health coverage (UHC) requires the consolidation of good governance and a clear digital strategy and implementation plan that is aligned with the country's digital health governance. To effectively implement digital health governance in a country, a framework is needed that is accountable, transparent, aligned with the rule of law, responsive, effective and efficient, participatory, secure, and safe. These are the major principles for making successful digital health governance. Implementing a country's digital governance effectively. In that case, it is not just a

technological development, but also a goal and enabler of achieving health for all, which is linked to SDG 3. If digital healthcare provides equal healthcare opportunities to people in rural areas as in cities, then it will contribute to achieving SDG 10 (Kar & Ram, 2024). Community health initiatives such as rural health worker recruitment and mobile health clinics have reduced health service disparities and increased public health preparedness. The genesis of telemedicine through digital governance has emerged as a revolutionary healthcare provider to improve healthcare services for people in remote areas. Telemedicine has grown exponentially since COVID-19; it has been used before that also, but now become a key part of healthcare. Telemedicine has made it easier to treat various infectious diseases, as there is no need to come in contact with the patient, thus reducing the risk of infection. In addition, it is especially important for people living in rural areas, as most do not receive the right treatment at the right time due to the transportation distance. Poor people in rural areas are getting the opportunity to contact the best doctors through remote monitoring, and their disease reports are sent online to the doctor for treatment (ETHHealthWorld, 2021).

## References:

1. <https://health.economictimes.indiatimes.com/news/health-it/digitisation-and-innovation-transforming-indias-healthcare>  
Press Information Bureau, 2025.  
<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1845081&reg=3&lang=>
2. TheGlobalEconomy.com. (2019). *Doctors per 1,000 people – India*.  
[https://www.theglobaleconomy.com/India/doctors\\_per\\_1000\\_people/](https://www.theglobaleconomy.com/India/doctors_per_1000_people/)
3. Kishore, J. (2014). National Rural Health Mission. In *National health programs in India* (11th ed., pp. 99–100). Century Publications.
4. Urstad, K. H., Andersen, M. H., Larsen, M. H., Borge, C. R., Helseth, S., & Wahl, A. K. (2022). Definitions and measurement of health literacy in health and medicine research: A systematic review. *BMJ Open*, 12(2), e056294.  
<https://doi.org/10.1136/bmjopen-2021-056294>
5. Norman, C. D., & Skinner, H. A. (2006). eHealth literacy: Essential skills for consumer health in a networked world. *Journal of Medical Internet Research*, 8(2), e.g.
6. Hindustan Times. (2014, July 18). *Only 33% govt docs are in rural areas, where 70% India lives*.  
<https://www.hindustantimes.com/india/only-33-govt-docs-in-rural-areas-where-70-india-lives/story-Mlhi3z2msK561pGjIKpkZO.html>
7. Hindustan Times. (2014, July 18). *Only 33% govt docs are in rural areas, where 70% India lives*. <https://www.hindustantimes.com/india/only-33-govt-docs-in-rural-areas-where-70-india-lives/story-Mlhi3z2msK561pGjIKpkZO.html>
8. Gupta, N., Awasthi, S., & Dixit, P. (2024). Human resources for health in India: A policy and systems review of recruitment, retention, and rural posting strategies. *Human Resources for Health*, 22(1), 12.
9. Satyamurthy, L. S., & Bhaskaranarayana, A. (2001). *Telemedicine: Indian Space Research Organisation's (ISRO) initiatives for speciality health care delivery to remote and rural population*. Indian Space Research Organisation.  
[https://v2020eresource.org/content/files/remote\\_rural\\_population.htm](https://v2020eresource.org/content/files/remote_rural_population.htm)

10. Mahar, J. H., Rosencrance, J. G., & Rasmussen, P. A. (2018). *Telemedicine: Past, present, and future*. Cleveland Clinic Journal of Medicine, 85(12), 938–942. <https://doi.org/10.3949/ccjm.85a.17062>
11. Thomas, J., & Kumar. (2013). The scope of Tele dermatology in India. *Indian Dermatology online journal*,4(2),82-89.
12. Venkatesh, U., Aravind, G. P., & Vel Murugan, A. A. (2022). Telemedicine practice guideline in India: Global implications in the wake of the COVID-19 pandemic. *World Medical & Health Policy*, 14(3), 589–599.
13. Shah, A.M (2023). Telemedicine in India; A perspective, collaboration, and knowledge sharing. *National journal of physiology, pharmacy and pharmacology*,13(8),1597-160.
14. <https://navbharattimes.indiatimes.com/epaper/2025/nov/november18/west-bengals-swasthya-ingit-telemedicine-service-over-7-crore-consultations-revolutionizing-rural-healthcare/articleshow/125392673.cms>
15. Venkatesh, U., Aravind, G. P., & Vel Murugan, A. A. (2022). *Telemedicine practice guideline in India: Global implications in the wake of the COVID-19 pandemic*. *World Medical & Health Policy*, 14(3), 589–599
16. Mohd Taqi, Swati Bidhuri, Susmita Sarkar, Wani Suhail Ahmad, Padma Wangchok. Rural Healthcare Infrastructural Disparities in India: A Critical Analysis of Availability and Accessibility. *J. Multidiscip. Res. Healthcare*. 2017, 03, 125-149
17. Thomas, S. (2025, July 31). *One nation, many disconnects: Mapping India's home internet gaps*. Centre for Economic Data and Analysis (CEDA), Ashoka University.
18. Upadhyaya, S. (2024). Bridging the gap through technology and policy: An in-depth analysis of the digital divide in India. SSRN. <https://doi.org/10.2139/ssrn.5248471>
19. Kar, S., & Ram, S. (2024). Digital governance in transforming health systems and health policy in India. *Journal of Community Health Management*, 11(2), 75–82. <https://www.jchm.in/article-details/21547>
20. EHealthWorld. (2021, December 16). Digitisation and innovation transforming India's healthcare post COVID-19: PwC India. EHealthWorld.