Digital Health Literacy and Women in India: Bridging the Chasm for a Healthier Tomorrow

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Abstract:

Digital health technologies (DHTs) can be transformative in the delivery and outcomes of healthcare, especially for women in countries like India. Despite their potential, their efficacy is undermined by existing gender-based disparities in autonomy, education, and access. This paper seeks to discuss the socio-cultural and technological factors which form barriers to women's digital health literacy in India. Data reveals that women are disproportionately marginalized from accessing telemedicine, mHealth applications, and health information systems due to a widening gender disparity in smartphone ownership and internet usage. In India, where socio-cultural, economic, and gender-based disparities are deeply rooted, improving digital health literacy among women presents both a challenge and a crucial opportunity. Closing these gaps is critical for fostering inclusive frameworks that advance gender-sensitive, participatory healthcare systems in alignment with the Sustainable Development Goals.

Keywords: Digital Health Literacy, Gender Gap, Women

Introduction:

"A woman's health should never depend on someone else unlocking her phone."

In India's drive for universal health and digital inclusion, are we confusing connectivity with empowerment? If millions of women now have mobile phones, why are so few able to navigate a health app or verify medical information online? Can we call it progress when a wife must rely on her husband to interpret a government health message sent to *her* phone? Is digital inclusion merely about connectivity or is it about comprehension, confidence, and choice?

As India accelerates toward a digital health future, these questions compel us to confront an uncomfortable truth: digital presence without digital power is not progress. Its time to close the gap not just in connectivity, but in capability.

In the 21st century, digital technology has significantly transformed how societies engage with health systems. Innovations such as telemedicine, mobile health applications, digital health records, and AI-powered diagnostics have become integral to healthcare delivery. However, the extent to which these tools empower individuals largely depends on their digital health literacy the ability to seek, understand, and utilize health information from digital platforms. In India, where socio-cultural, economic, and gender-based disparities are deeply rooted, improving digital health literacy among women presents both a challenge and a crucial opportunity.

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Understanding Digital Health Literacy

Digital health literacy is a multifaceted concept that encompasses the ability to seek, find, understand, and appraise health information from electronic sources and apply this knowledge to addressing or solving health problems.[1] In shaping digital health literacy, key influences include intrapersonal factors such as demographics and socio-economic status, interpersonal factors like social support and networks, and broader social and cultural contexts.[2,3]

The Digital Health Landscape of India

The Digital India initiative in 2015 accelerated digital infrastructure. The National Digital Health Mission (NDHM) was established in 2020, with the goal of developing a digital health ecosystem, which was subsequently renamed as the Ayushman Bharat Digital Mission (ABDM) in 2021.[4] The integration of Unified Health Interface (UHI) and digital health IDs signalled a major shift toward accessible, patient-centric care. India has also pioneered innovative digital health solutions such as CoWIN, Aarogya Setu, e-Sanjeevani, Tele MANAS, NIKSHAY, Mother and Child Tracking System, ANMOL and many more that have collectively improved accessibility, affordability and efficiency in healthcare delivery, though challenges such as gender gaps and rural access to digital literacy still exists.

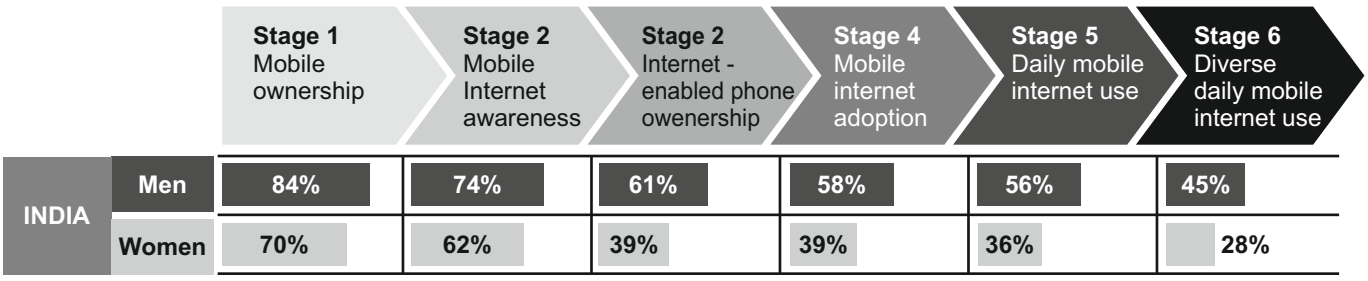
Why Women Need Digital Health Literacy?

Digital health literacy enables women to access accurate, stigma-free information on reproductive, maternal, and sexual health. Women are able to track their health, avail teleconsultations, and get timely reminders for vaccinations, antenatal care, nutrition and monetary benefits through digital platforms such as mMitra, Kilkari, eSanjeevani, Poshan Tracker, and Janani Suraksha Yojana apps. Evidence shows that digital technologies improve access to screening programs, encourage healthier lifestyle choices, and increase womens engagement with their personal health.[5,6] In disciplines like Psychiatry, Endocrinology, and Gynaecology, Digital Health Technologies (DHTs) have demonstrated a strong correlation with women's health, empowerment, and gender equality. Their main influence is on literacy, health education, and skill development (reported frequency of occurrence [RFO] 93.6%, 95% CI: 82.5-98.7). Additionally, DHTs promote financial empowerment through cost-effective care and enhanced financial literacy (RFO 10.6%) and social connectivity with families and healthcare providers (RFO 10.6%).[6] DHTs empower women by improving healthcare access, maternal health, and decision-making, thereby enhancing health outcomes and supporting progress toward the Sustainable Development Goals.[5,6]

The Gender Divide in Digital Access

According to the **Global System for Mobile Communications and Association (GSMA)Mobile Gender Gap Report 2025**, gender gap in smartphone ownership has widened from 32% in 2023 to 39% in 2024.[7] According to National Family Health Survey-5, only 33% of women in India have ever used the internet, compared to 57% of men. In rural areas, the gap is wider 49% of men vs. just 25% of women.[8] Gender gap in internet literacy has been seen most in the state of Telangana followed by Chhattisgarh.[9] Unless the gaps in women's mobile phone ownership and use are well understood and addressed, digital health interventions threaten to exacerbate existing health inequalities.

Figure 1 : Mobile Gender Gap Report 2025[7]



Implications on Health Outcomes

Digital divide directly affects health-seeking behavior, particularly where digital solutions are supplementing or replacing conventional health services. In the wake of the COVID-19 pandemic, for instance, telemedicine became a lifeline. Yet, numerous women could not take advantage of remote consultations because they lacked digital know-how, were unwilling, lacked devices, or had no privacy at home. [10]

Where women are not digitally skilled, connected, or confident, they lose access to important health services such as telemedicine and web-based counselling. Research has shown women's phone ownership being associated with better RMNCH indicators.[11,12] Digital divide severely limits the potential of preventive care, antenatal and postnatal services, sexual and reproductive health counseling, and chronic disease management all of which are critical to women's health and empowerment. While healthcare systems go digital, women lacking digital literacy get left behind, widening health inequities and resulting in late diagnoses and poorer health outcomes.

Barriers: Beyond Access

Women in India encounter several barriers in accessing and utilizing digital health technologies effectively, which restricts their entry into developing healthcare systems. Such hindrances are based on social, economic, and technological inequalities.[11,12]

- **Limited smartphone or internet access** on account of cost, unreliable connectivity, socio-economic status, geographic location etc.
- **Digital Illiteracy**: Despite having smartphones, many women are not able to use them for other purpose other than making calls. They are not aware of available digital health services or what benefits they can provide. They often depend on male members of their family or their children for access to digital tools.
- **Socio-cultural Norms**: Deep-rooted patriarchal mindsets and women's limited decision-making power persist in constraining their control over technology and health choices.
- **Language Constraints:** English or Hindi is predominantly the language of digital content, yet most women are conversant only in local dialects.
- **Privacy Concerns**: Inability to have private space to watch digital content or access telehealth services restricts women's openness to digital platforms.
- **Trust Deficit**: The internet is full of false information, and someone who lacks digital skills may easily believe and follow harmful health advice.
- **Time Constraints**: Family and household obligations often limit women with scarce time for interactive digital health facilities.

Government and Civil Society Interventions

The policy landscape of India has recognized the difficulties involved in women obtaining digital health services. Projects like the National Digital Health Mission, eSanjeevani teleconsultation platform, and mMitraa maternal health information voice call service utilizes mobile technology to enhance healthcare delivery. The Digital Saksharta Abhiyan (DISHA) and the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) are some programs that specialize in improving rural communities' digital literacy, especially targeting women. National Digital Literacy Mission, Mahila E-Haat, DIGI LAMP, Digital Didi, Internet Saathi and various others are digital initiatives for women launched by Government of India.[12]

Civil society organizations (CSOs) and grassroots networks help bridge such gaps. For example, the Self-Employed Women's Association (SEWA) and the Digital Empowerment Foundation (DEF) have shown that community-based digital literacy programs can raise women's health knowledge and decision-making capability considerably.

In addition, state-specific programs such as Uttar Pradesh AI Pragya program seek to provide digital literacy to a cross-section of people, including women in Self-Help Groups, thus facilitating digital inclusion and empowerment.

These collaborative efforts highlight the need for focused interventions and participatory policies to

ensure that digital health technologies can serve all sections of the population, especially women.

Enablers and Opportunities

Despite these efforts, significant implementation gaps persist. Many digital health programs lack integration of gender perspectives in their design, delivery, and monitoring processes. Despite these hurdles, there are bright spots of innovation and community engagement.[13]

- **Gender-Disaggregated Data:** Policies should be guided by strong data on women's access to and use of digital health tools by geographies and age groups.
- **Localization of Content:** Applications and health portals need to give prominent place to multilingual support, audio-visual modes, and culturally relevant messaging to overcome literacy barriers. Since there are literacy limitations, IVR (interactive voice response) services in local languages are found to be effective in communicating maternal and child health information.
- **Training and Empowerment of Frontline Health Workers:** ASHAs, ANMs, and Anganwadi workers can be trained not only to operate digital tools but to train the women they are working with producing a ripple effect in the community. Research indicates they are credible intermediaries and can bridge the digital divide.
- **Engagement of local leaders:** Engaging local stakeholders like womens Self-Help Groups and Panchayat Raj Institutions in the design and delivery of digital health literacy programs.
- **Digital Literacy Campaigns**: Targeted digital literacy programs that combine health education and skill-building are showing promising results in various states of India.
- **Curriculum development**: Integrate digital and health literacy into school curricula and adult education schemes, with special modules tailored for women.
- **Safe and Gender-Sensitive Digital Spaces:** Privacy, cybersecurity, and anti-harassment measures must be central to any digital health platform targeting women.
- **Public-Private Partnerships**: Government agencies, technology firms, and NGOs can form partnerships to build sustainable, scalable digital health models.

The Road Ahead: From Passive Recipients to Digital Health Leaders

In order to make India's digital health revolution inclusive in reality, a gender-responsive and intersectional strategy is a must. Policies should integrate gender equity into the center of digital health programs, and not as an afterthought. Strong monitoring through the use of gender-disaggregated data can facilitate assessing progress and informing improvements. Equally important is investing in research to comprehend the varied needs of women whether tribal, elderly, disabled, or belonging to rural poor communities and to develop scalable, context-specific innovations that empower them as active users and leaders in digital health.

Conclusion:

Women's digital health literacy in India is not merely a matter of Technology- it is social concern. Although mobile health services, telemedicine, and digital platforms hold transformative promise, gender gaps in digital access, skills, and autonomy Persist and limit women's meaningful participation.

As India accelerates its digital health mission, inclusion must be intentional. Unless guided by a gender-sensitive strategy, digital health interventions risk perpetuating existing inequalities. The moment is now to tap technology's potential using empathy, equity, and empowerment as guiding principles. Closing this gap requires inclusive policy, grassroots engagement, and sustained investment. As Melinda Gates aptly said, "When we invest in women, we invest in the people who invest in everyone else."

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