HOW DIGITAL INDIA INITIATIVE CAN REVIVE DENTISTRY?

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Abstract

"DIGITAL INDIA", an initiative launched by the Prime Minister to connect each and every part of India and thus building a new bonding in all fields including dentistry. This review discusses how Digital India initiative makes people aware of the importance of their oral health problems, which is still believed to be highly neglected especially in the rural setting

Key words – Dentistry, Digital INDIA, Oral Health

Introduction

India, a union of 29 states, is the second most populous nation in world behind China. In the field of science and technology, India has achieved impressive progress and is emerging as one of the strongest economies in the world. Information and communication technology have brought considerable changes in development of the Indian society through information dissemination. No other technology is as profound as information technology (IT) in human history.[1] Information Technology has had a great influence on the economy and lives of people across the world. In India, the use of digital technology has improved people's day–to–day life as they are being used increasingly from retail stores to government offices and hospitals and it also helps us to connect with each other and share information on the issues and concerns faced by people.[2] Now days Digital Technology vastly employs Mobile Applications and Cloud Computing which have emerged as catalysts for citizen empowerment and rapid economic growth across the globe. Such is its impact, that India has also started a program named "DIGITAL INDIA", which is an initiative made by the Government of India to ensure that Government services are made available to citizens electronically by increasing Internet connectivity and by improving online infrastructure. This concept was launched by Prime Minister Narendra Modi on 1st July 2015. Information Technology plays an important role to make India a digital country, in his words:

"India Today (IT) + Information Technology (IT) = India Tomorrow (IT)"[3]

The initiative plans to connect rural areas with high-speed internet networks. The aim of Digital India program is to transform the country into a digitally empowered society and knowledge economy.[4] It will create a digital interface to endow with a number of e-governance services including health care and education. With the declaration of "Digital India", India has yet to cover a long distance in the world of modern medicine and even more in the field of dentistry. It is well established fact that Oral health cannot be divorced from the broader context of general health & it is a challenging issue globally.[5] Oral diseases qualify as a major public health problems owing to their high prevalence and incidence in all regions and mainly attributed to rapidly changing lifestyles, wide-spread use of tobacco and increased consumption of alcohol. So this review highlights how this digital India is implicated in order to improve the oral health. The literature reviewed is obtained from the following sources:

- Published articles
- Online manuals and books
- Internet news clipping

The authors subsequently analysed and scrutinized the literature from these sources and relevant information from these sources was taken to discuss it in this review.

Core Components of Digital India

The Digital India initiative consists of three main core components, and are –

1. Creation of digital infrastructure
2. Delivering services digitally
3. Digital literacy

1. *Creation of Digital Infrastructures*

Primarily, it involves the use of high speed internet as a core utility and is beneficial for citizens. One such example is "**BharatNet**", **which** is slated to be the world's largest rural broadband connectivity project. BharatNet will serve as the infrastructure backbone of Digital India, and shall facilitate delivery of e-Health, e-Education and various other services over the internet. **As a part of this project,** BSNL (Bharat Sanchar Nigam Limited), a Government of India's subsidiary, has undertaken large scale use of Wi-Fi hotspots throughout the country for Internet access on smartphones while on-the-go. The initiative has already started with the government offering free Wi-Fi at places like Taj Mahal, and tourist spots like Shimla, too.

2. *Delivering Services Digitally*

As a part of Delivering digital services, the government has launched "e-health" application, which aims at providing timely, effective and economical healthcare services to all, especially to the ones that have little or no access to healthcare services. The Online Registration System (ORS) under the e-Hospital application has also been introduced. This application also provides important services such as, payment of fees and appointment, online diagnostic

reports, etc. This initiative had the added convenience of skipping the hassles of registration and other formalities at hospitals by merely identifying self through Aadhaar Number, selecting the hospital and department, and selecting the date of appointment and get the same through a SMS.

3. *Digital Literacy*

The e-education initiative – India is yet to travel a long way to shift the mindset of people from distance education to online education. Through the government initiative of Digital India, Indian youth are becoming technology-driven and discover that online learning can be extremely beneficial as it saves our cost, time and effort. Similarly, in the healthcare sector, it benefits both undergraduates and post- graduates who can easily learn through online education. Such education can be imparted through online learning or Live Virtual Classrooms (LVC), which have paved the way for modern education in India.

Mobile applications launched by the government

The Government of India, as a part of the digital India initiative, launched four mobile health services on 15th January, 2016 namely, (m-Health) - Kilkari, Mobile Academy, M-Cessation and TB Missed Call initiative, and are inline with the commitment to prioritize public health of this great nation.

1. **m-Health** – Kilkari- shall be extremely helpful in providing health education & promotion regarding maternal and child health. It is recommended that this programme shall involve messages related to oral health.

2. **m-Cessation** (Mobile tobacco cessation) was aimed at reaching out to those willing to quit tobacco use and support them towards successful quitting through text messages sent via mobile phones.

3. **Mobile Academy** is a free audio training course designed to expand and refresh the knowledge of Accredited Social Health Activists (ASHAs) and improve their communication skills. Non dental personnel involved in primary care such as ASHA, dais and anganwadi workers etc. may help to pass on oral health knowledge and influence choices of a defined target population.[7]

4. **Under TB Missed Call initiative**, a helpline with a toll free number will provide information, counseling and treatment support services for TB. Oral lesions are very important for early diagnosis and interception of primary tuberculosis.[8] It is recommended that patient should also be taught about the oral manifestation of TB through these mobile message services.

Dentistry & Digital INDIA and recommendations for action

With the Digital India Initiative, various steps can be undertaken to make people aware of the importance of their oral health, which is still highly neglected, especially in the rural settings.

• **TELEDENTISTRY-** A combination of telecommunications and dentistry, it involves the exchange of clinical information and images over remote distances for dental consultation and treatment planning. It has the ability to improve access to oral healthcare, improve the delivery of oral healthcare, and lower its costs. It acts as a bridge between rural and urban settings It is pertinent that Teledentistry be encouraged and implemented on a priority basis in India due to lack of specialist dental manpower and an extensive underserved population. Another recommendation is using teledentistry in sub-centres, Public health centers, and community centers so that patients can share their oral health problems with their concerned specialist and utilize this service while sitting at their own places, saving both money and time wasted waiting for the specialist's appointment in a conventional OPD setting.

• **ORAL SCREENING-** Digital India can also help using intraoral cameras and telehealth communication technology to screen preschool children for oral disease, in particular early childhood caries (ECC). Intraoral camera is a feasible and potentially cost-effective alternative to visual oral examination for caries screening.[9]

• **ORAL HEALTH PROMOTION-** Mobile phones, tablets and internet have all become widely accessible and provide entirely new avenues to access information, connect, and communicate regardless of one's geographic location. The reflexivity of knowledge, proliferation of modes and speed of communication all has important implications for health promotion. With the recent advancement in digitalization, newer communication technologies continue to exponentially increase, health promotion will inevitably expand out from the 'old' media (TV, radio, billboards) and foray into the 'newer' avenues (mobile telephones, social networking sites).[10] It also eliminates the social, language, and cultural barriers that otherwise could impede the effectiveness of oral health promotion

Oral health promotion programmes using digital media have great potential to cost-effectively and fastly meet the complex needs of diverse and often underserved populations living with or at high risk of oral diseases.[11]

• **ORAL HEALTH EDUCATION-** For most of this century, dental health education has been considered to be an important and an integral part of providing dental health services and is new advised to be delivered to individuals and groups via internet at their workplaces and/ or residential settings. Although some form of oral health information is available on IDA website, much of interactive education in it is absent[10] through which

we can draw an inference that no Indian site is truly available for proper oral health education. With this Digital India concept, certain websites regarding comprehensive oral health knowledge shall be created in order to educate people about potential of oral health diseases and its consequences. It shall engage the public and enhance the recognition and importance of the dentist as the foremost authority on oral health care.[11]

Conclusion

Digital India is one of the most ambitious projects launched by the Indian government. The digital Initiative which aims to connect the nation through the means of the internet is stated to change the way the Indian population has been working in the past. The proliferation of modes and speed of communication and the reflexivity of knowledge all have important implications for health promotion However, it is pertinent that the dental fraternity be involved in the same and start this initiative to provide oral health care education and consultancy that shall aid to reduce the national burden of dental diseases.

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