

Digitalization in Nursing Services

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Abstract:- The word "Digital Health" is all-inclusive and refers to any applications that are developed at the intersection of technology and healthcare. The World Health Organisation describes the word "digital health" as "a broad umbrella term encompassing eHealth, as well as emerging areas, such as the use of advanced computing sciences in 'big data', genetics." and machine learning"¹.

I. INTRODUCTION

Digitalization has been an improvised advanced high-tech digital technology which has made the work faster not only in office but also in daily routine work.

From last 2 years Digitalization has appeared to be a key pillar in the distribution of healthcare services. A trend that has become especially visible during the COVID-19 pandemic. In the recent, the world has seen a remarkable success in the health technology of telemedicine, e-pharmacies etc. In addition, there has been incredible research and development in the integration of technologies with virtual reality, pharmaceuticals and healthcare¹.

Contribution of health-related technologies has bridged the gap through the incorporation of ambient computing techniques. The chart of digital health has signified worldwide achievement in health and well-being¹.

Technology has made easy to in diagnosing & treating diseases. Science has been so advanced that now development of medical devices, orthotics, and prosthetics is being transformed by 3-D printing, have made life easy going for them too. Use of telemedicine especially during the time of covid-19 was very ell seen from online consulting doctor till medicine at door step which has strengthen the care in health facilities. Artificial intelligence is being utilized to improve the quality of locomotion for paraplegic people, to direct traffic, and to develop new treatments. Digitalization is contributing in the detection of outbreaks and the optimization of health care.²

II. OBJECTIVES TO PROMOTE DIGITALIZATION AS PER WHO

- *Analysis of data, research and outcomes into action*
Enabling to implement the out result of the research study which helps in setting standards and contributing to other health related informed decisions³.
- *Enhancement of knowledge through advancement with community involvement*
Enabled by new technologies and no more withhold by the need for bodily meetings, WHO brings together top expert voices around topics of clinical and public health significance³.
- *Scientifically assessing and linking people needs with source of innovations*
WHO takes a proactive, systematic approach to identify, promote, co-develop, and scale innovations that are based on country needs³.

III. UNIVERSAL APPROACH ON DIGITALIZATION 2020-2025

Digitalization has made its universal approach by its advanced features to keep up to date with the moving world. The affect of it can be seen very well in health care by making it applicable to everyone without irrespective of demographic composition with easily accessible, reachable & at affordable cost. Approaches can also be seen in other field⁴.

IV. UTILIZATION OF DIGITALIZATION IN THE FIELD OF HEALTH CARE

- *Telemedicine*
World Health Organization define telemedicine as, "the delivery of health services, where distance is a critical factor, by all health care professionals using information & communication technologies for the exchange of valid information for diagnosis, treatment & prevention of disease & injuries, research & evaluation for continuing education of healthcare providers, all in the interest of advancing the health of individuals and their communities"¹.

➤ *Point of Care Diagnostic (POCD)*

The majority of POCD devices are automated technologies that use artificial intelligence machine learning algorithms to simplify complex diagnostic procedures and deliver results instantly. Additionally, implantable bio-sensors support disease tracking, management, and prognosis by assisting with disease tracking, monitoring, and management. Without forcing patients to go and undergo diagnostic tests at medical facilities, POCD has allowed doctors to offer telemedicine treatments after diagnosis.¹

➤ *Mobile Health or m Health*

M Health has given mobile a platform of digital health services¹. India is the second largest smartphone user. Smart phones are becoming more accessible to growing population of India⁵.

➤ *Medical Virtual Assistants*

Medical Virtual Assistants (or "MVAs") are a trend that is emerging in the m-Health industry. Through services like timely medication refills, providing information on medical conditions, appointment scheduling, maintaining health records, and other administrative activities at hospitals and other healthcare institutions, MVA has closed the gap in terms of physical arrangements. MVAs typically use AI-based software to handle big data volumes, offer personalised recommendations, and carry out individual-specific tasks. MVAs are useful for carrying out administrative work as well¹.

➤ *Electronic Health Records ("EHR")*

Electronic Health Records (EHRs) are indeed a digital format for patient medical records that has aided to minimize challenges with manual system of huge files and registers, and also data replication. EHR has made the work so fast & easy going that with just a click will client's details is retrieved no matter of time & distance. Electronic Health Records has made the approachable health service for doctors to diagnose & treat patient as fast as it can¹.

➤ *Robot*

Assisted Surgery with a Robot Doctors are competent to accomplish surgical procedures more effectively with the help of robots. Noninvasive operations have been around for quite long, but surgeons can now perform more accurately and with tiny incisions because of robotics⁶. As a result, the patient is experiencing less blood loss, better pain management, and a rapid recovery. Microbots may ultimately be used to make an accurate diagnosis in the long term.

A capsule endoscopy, in which the patient ingests a tiny camera that enables the health professional to snap photos of the gastrointestinal system (the United States' top regulatory authority for medicines and medical devices) ⁷. Removing plaques from artery, performing tissue biopsies, treating malignant tumours immediately, and administering targeted drugs are all examples of practical benefits. Common medical

interventions, also including surgical incisions & catheter insertions, are considerably more likely to cause tissue harm than microrobots. Microrobots might considerably lessen drug - related problems by targeting for specific sites in the body⁸. Robots also would be able to witness and learn through advances in deep learning⁶.

➤ *Big Data in Healthcare*

Data is gathered in its raw form from a variety of Digital Health services. In which the EHR produces a huge amount of data which can be used in a number of ways. The Internet of Things is expected to connect 25 billion devices ("IOT "). The Internet of Things (IoT) sector has increased into a powerful force for change, and its condition deteriorates will be experienced across all sectors. The information generated requires methods such as big data processing, that can be utilized across the health sector.¹⁰

➤ *E - Pharmacies*

Over the last few years, India has seen a rise in e-pharmacies, or webstores. An e-pharmacy, often known as an online pharmacy, is one which works over the internet and fulfils prescriptions via mail, courier, or service personnel. Many other choices have been deployed, including internet-only pharmacies and traditional pharmacies with merely an online presence. Pharmacists can serve a bigger group of patients because the basic geographical limits on physical pharmacies are lifted with the online method.¹

➤ *E - Learning in the Healthcare Sector*

Continued Medical Education ("CME") is a legal requirement that requires health professionals to keep up with current innovations and changes in medicine and health care. e - It is more convenient to health personnel and being available for any such activities if they are learning. E-learning is both cost-effective and time-saving, and it can be accessed from any location on the planet¹.

V. AYUSHMAN BHARAT DIGITAL MISSION

In enactment of the National Health Policy, 2017, a Committee under the chairmanship of Shri J. Satyanarayana was constituted to develop an implementation framework. This Committee formed the National Digital Health Blueprint, 2019 ("NDHB"), action plan to comprehensively and holistically implement digital health in India. Based upon the NDHB, MOHFW introduced the National Digital Health Mission ("NDHM") on August 15, 2020 to form a digital health ecosystem.

The NDHM commenced as a pilot initiative across six union territories. It was renamed Ayushman Bharat Digital Mission ("ABDM") a year later and is now applicable across the country. Presently, participation in the ABDM is voluntary.

➤ *Aims:*

- To start developing a federated health information infrastructure.
- Exchanges of health data
- By 2025, there will be a nationwide health data network.

➤ *Components:*

- **Health ID:** All citizens will have a Digital Health ID to keep, access, and communicate their health information. The individual's Aadhar and/or mobile number are connected to their Health ID. That enables the individual to keep all health-related information and documentation online, which can then be accessed from any location at any time.
- **Health Facility Registry:** The ABDM's participating organisations are required to register as healthcare providers. Health facilities can register with the ABDM whether they are public or private. Upon registration, Health Facilities must digitise their systems appropriately, enabling people to easily and digitally access health services.¹¹.
- **Healthcare Professionals Registry:** a health care professional register themselves under the ABDM¹². The healthcare professionals who sign up to ABDM's registry can view patient's records online and also treat them online.
- **Health Records:** it has executed as a mobile application system to open individuals to add and maintain their health data. The users can share the data, such as doctors, healthcare facilities and others.
- **Consent Manager:** Conversation of health related is permitted by the consent manager and gateway which supports health data access requests and manages the consent preferences of users of the ABDM interfaces¹³.

VI. CONCLUSION

Revolutionary developments in the healthcare sector has expected adaptation in nursing care which moves towards a new digital health era. Developing an ideal application to manage care teams with electronic medical records might be a simple approach to keep up with developing healthcare trends. It is suitable to conclude that healthcare administration teams are under greater supervision and leadership as a result of nursing and technology working together to improve patient health outcomes at affordable costs. Patients can manage their health issues more independently and feel empowered as more measures to increase patient participation are put into practise. Thus, through healthcare digitization, they may be persuaded to make healthier lifestyle decisions.

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