



## Topic 8: Digital Health and Wellness: Introduction

**Definition:** *Digital Health and Wellness is physical and psychological well-being in a digital technology world*

Wellness of individuals plays a vital role in improving their quality of life. The modern lifestyle is often defined by lack of physical activity, junk foods and high work stress etc. that negatively effect people's wellness and in turn their quality of life. A WHO report shows cardiovascular diseases, digestive diseases and diabetes on the list of prevalent chronic diseases in Europe. These and other chronic diseases can be controlled if individuals act early in taking preventive measures and follow a healthy lifestyle. The last decade has seen considerable efforts by the policy makers along with the industry and academia to define strategies and methods that focus on prevention-driven approaches to a healthy lifestyle. Investing in prevention would improve the quality of life and well-being of people and societies (Warraich, 2016).

Digital technology has the potential to transform the way people engage with services, improve the efficiency and co-ordination of care, and support people to manage their health and wellbeing.

However, digitisation in health care is not new, with computers first being used for administrative, financial and research purposes in the 1960s. Although there have been technological advances, the strategies towards adopting full digitisation have been slow and still appear to be far away. It is often remarked that technological change has been much slower in health care than in other sectors such as banking and retailing, where technology has wrought significant changes in the relationship between service providers and their customers. This may be a reasonable analogy for online transactions (for example, ordering a prescription or making an appointment is similar to arranging a bank transfer or buying a train ticket). Being able to do these things online would be more convenient for many people, although on its own would hardly amount to a transformation in patients' experience of health care (Honeyman et al, 2016).

However, technology has the potential to bring about a more fundamental change in the relationship between patients and health professionals. Greater adoption of technology and using it more effectively present opportunities to drive improvements in quality, efficiency

and population health (Imison et al, 2016) and revolutionise patient and user experience (Ham et al, 2012) in a number of ways (Honeyman et al, 2016).

For example:

- it could help put people in control to take a more active role in their own health and care by providing access to relevant, high-quality information and facilitating peer support online;
- it can support improvements in the safety and quality of care – for example, by reducing the risk of mis-identification and other avoidable errors;
- for clinicians, it may mean less time and effort in accessing information about patients;
- remote monitoring can help clinicians better understand the progress patients are making and ultimately help to deliver better health outcomes;
- it can facilitate advances in medical practice – for example, through the use of advanced analytic techniques, such as machine learning, to support clinical decisions and supporting personalised treatments based on analyses of people's genomes;
- data captured by digital technologies could improve service planning, help align capacity more closely with demand and enable new service configurations;
- information technology, data systems and information sharing are critical to delivering integrated care and can help to co-ordinate care delivered by professionals across different organisations and even across patients' wider support networks;
- it can help deliver efficiency improvements. McKinsey estimated that modern health systems can save between 7 per cent and 11.5 per cent of their health expenditure (London and Dash, 2016), while a study commissioned by NHS England estimated annual savings of £10 billion or more would come after commensurate investment in this agenda (Dunhill, 2015). However, the calculations behind this have not been published, leading many to question whether it is a realistic estimate (Honeyman et al, 2016).

It is highlighted that we need a different approach to policy, in contrast to the recent oscillation between two poles: 'Letting a thousand flowers bloom', as the Forward View described the approach to digital technology in recent years that has resulted in fragmentation and systems that do not work together, while over centralisation has led to systems that do not meet local need. In future, national bodies are to focus on providing the 'electronic glue' and national standards for interoperability to enable different parts of the system to work together, while allowing local partners to make decisions on what they need in their area (Honeyman et al, 2016).

Becoming a digitally enabled health care provider is not about replacing analogue or paper processes with digital ones. It is about rethinking what work is done, re-engineering how it is done and capitalising on opportunities afforded by data to learn and adapt. Where technological interventions have failed, technology has simply been layered on top of existing structures and work patterns, creating additional workload for health care professionals (Imison et al, 2016).

People need to be aware of the physical dangers inherent in using digital technology. If you spend your days working in front of a computer, you probably know the risks: Ignoring your posture is a bad idea, and repetitive motions such as typing and "mousing" can cause debilitating injuries. According to Alan Hedge, director of the Human Factors and Ergonomics Research Group at Cornell University, "... carpal tunnel syndrome isn't the only

injury to worry about when working at a computer” (Manjoo, 2003). Eyestrain and poor posture are not uncommon in digital technology-related activities. Too often, technology safety concerns relate only to the security of equipment and not the physical well-being and security of people. Sometimes computers are set on tables that are too high or too low for younger users. Adults should not hope that students will simply adapt to the surroundings, nor should they think that students will stop using a given digital device before it causes problems.

**Essential questions**

*How can people be physically affected by technology?*

*Are people aware of the physical dangers that can accompany the use of digital technology?*

*How else can someone become injured using technology?*

In addition to the physical dangers, another aspect of digital safety that is receiving more attention is the topic of “Internet addiction.” It’s a double-edged problem: Not only do users become dependent on the online experience, but they may also irreparably harm themselves physically. Taken to its extreme, Internet addiction can cause both psychological as well as physical problems. This is an issue that is being recognized around the world. Some addiction experts are finding that the withdrawal symptoms associated with Internet addiction are similar to those of alcoholics.

To prevent various technology-related physical injuries, educators need to encourage students to use technology in a responsible way. Making sure that all computer workstations are ergonomically sound is one way to protect students from long-lasting problems related to technology use. But even beyond the physical aspects, adults need to be aware of the amount and type of technology used by students.

There are various forms of media addiction, including television addiction and Internet addiction based on computers as well as smartphones. Recently, smartphone addiction has emerged as a significant problem among users. With recent technology, smart- phones have become not only a form of communication but also a platform for a variety of entertainment content. In the last decade, the number of studies investigating smartphone addiction has increased, and these studies have focused on the potential influences that smartphone addiction has on individuals.

Digital communication results in something called “Information Overload”, a term coined by futurist Alvin Toffler back in 1970. The term refers to our inability to absorb and process all the information we’re exposed to, and this information is literally everywhere these days. Information Overload, or "Information Fatigue Syndrome (IFS)," occurs when we over-expose ourselves to media, technology and information. Our brains have trouble keeping up with everything that we are feeding them, and the distorted-spin EMF energy fields we’re being exposed to don’t help the case (generated by cell phones and wi-fi). We end up having headaches and being exhausted and end up making mistakes and wrong decisions. The main point is, when exposed to too much information and technology, we tend to shut down.

Information overload is now commonplace around the world, at work, at home and during leisure time.

Some of the causes include:

- widespread and easy access to the Internet
- social networking sites such as Facebook and Twitter
- cheap and accessible use of cell phones, texting, and mobile internet
- online and offline news, media, and advertising: TV, newspapers, magazines, and billboards (Miller, 2013).

With advancement in technology, technical interventions are increasingly being explored for their influence on individuals' routines and everyday life in order to develop healthy habits among them. Wearable activity trackers when used as technical interventions, have great potential to influence individuals' wellness in everyday life as they provide means to collect, quantify, analyse and monitor different attributes of the wearer and her environment. They can help in providing personalized wellness services to wearers. According to IHS, the wearable technology market is drastically increasing. In the year 2012 wearable technology revenue was approximately 8.5 billion dollars with 96 million devices. By the year 2019 the revenue is expected to be 32 billion dollars with more than 230 million devices. Researchers, in collaboration with industry, are discovering novel ways to use wearables to encourage behaviour changes among individuals and for building healthy routines. Routines are regular activities that are part of a person's daily life. Developing wellness routines and making behavioural changes for users to create healthy lifestyles have been an active area of research. Different types of technical and non-technical interventions are used to create changes in routines producing different types of changes in daily routines of individuals. However, in order to support daily activities of its users, wellness services need to address human diversity. The needs of individuals vary with gender, age-group and other different characteristics (Warraich, 2016).

### **Digital Health and Wellness Issues**

- using proper ergonomics and avoiding repetitive motion injuries
- becoming addicted to the internet or to video games and withdrawing from society
- smartphone addiction
- information overload syndrome

### **Digital Health and Wellness Keywords**

- technology addiction
- technology and good health
- computer ergonomics
- information overload syndrome
- wearable activity trackers

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