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Professional Efficiency of Medical Staff in E-Health Care: The Role of Digital Competencies

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E-health is defined as the use of information and communication technologies (ICT) in health care to improve the efficiency and effectiveness of health care management and delivery [1]. E-health improves health surveillance, healthcare system management, healthcare decision-making, and standardizes the exchange of medical information; and promotes equity in health care delivery. E-health has the potential to improve access to healthcare and can effectively reduce professional isolation and improve retention of healthcare professionals in resource-limited settings [2].

Opportunities for online healthcare education, expansion of healthcare delivery, health compliance, follow-up and prescriptions are additional benefits of e-health [3]. In addition, it is essential to the success of health care management and delivery worldwide and improves health care providers' access to information to optimize the outcome of health care interventions [4]. However, effective use of e-health tools can only be possible if healthcare professionals have a positive attitude towards it and have the skills to use information and communication technology tools. Although eHealth has the potential to improve the efficiency and effectiveness of health care management and delivery, scientific publications indicate that the adoption of eHealth among healthcare professionals is quite limited, despite its important role in healthcare practice [5].

The characteristics of an innovation determine the speed of its implementation in five stages:

a) awareness of innovations and the ability to gain some abstract understanding of how they function (knowledge);

b) formation of a favorable or unfavorable attitude towards innovation (belief);

c) participation in activities that lead to a choice - to accept or reject an innovation (decision);

d) deliberate actions to introduce innovation (implementation);

e) evaluating the results of the decision made regarding the innovation.

The innovation process is complex and involves critical evaluation along five dimensions: relative advantage, compatibility, complexity, testability, and observability.

When deciding whether to introduce eHealth into professional practice, individual healthcare professionals may consider the following issues [6]:

- Can e-health improve health care delivery?
- Does the eHealth technology fit well with the needs and current practices of healthcare professionals (interoperability)?
- Is e-health technology easy to use and understand (complexity)?
- Can healthcare providers test or try out eHealth technology before committing to use it (testability)?

- Can individual healthcare professionals see the benefits of using e-health technologies in professional practice in the workplace (observability)?

If evaluation of the characteristics of eHealth leads to its acceptance, healthcare providers can use the innovation to improve the quality of healthcare delivery. ICT skills will positively impact eHealth adoption.

One example of digitalization of healthcare is the use of mobile phones in the practice of a doctor or any other medical professional. It should be noted that mobile phone use among medical personnel is quite high, supporting claims that mobile phone use has permeated the healthcare industry.

Mobile phones help in remote diagnostic monitoring, data collection and dissemination of medical information over cellular networks. In addition, web application software in mobile phones can be configured to send and receive medical reports, pop-up alerts at any time convenient for medical professionals. The adoption of mobile phones by healthcare professionals has been driven by the inability of some healthcare facilities to provide reliable power supply, Internet access, coupled with the high cost of service and the level of skill required to use other ICT equipment. Although the majority of healthcare professionals reported using a mobile phone, it has been difficult to predict the extent to which mobile phones contribute to healthcare delivery [7].

ICT tools and tools that have received less adoption in hospitals may be the result of various reasons, which include lack of ICT facilities in the workplace, insufficient skills in operating ICT equipment, the specialized nature of the equipment and the type of health care facility. For example, ICT tools such as body scanners and computerized sensors are specialized and expensive tools that may not be available or accessible to all healthcare professionals. Other equipment, such as a fax machine, may be considered insecure for transmitting patient information compared to using more secure email to send medical records.

Given the overall positive attitude of healthcare professionals towards e-health, it is important that more efforts are directed towards improving training in ICT skills and building and maintaining ICT infrastructure to support healthcare delivery.

A study by Olok, Yagos and Owugo found moderate levels of ICT skill utilization among health care workers [8]. However, this level of expertise is concerning given the speed at which digitalization is permeating healthcare. A low level of ICT skills can be a serious obstacle to the use of innovative technologies in the practice of doctors or nurses.

The insufficient use of certain ICT tools and tools may be the result of their absence in hospitals, lack of skills in their use, the specialized nature of the equipment and tools, and the type of medical institution. As a result, healthcare providers are typically switching to safer and faster mobile phones and email applications on smartphones or computers to send medical records between healthcare providers and patients. Investing in ICT skills training based on training needs assessments may be worthwhile to develop the skills of health workers.

Training to improve the ICT skills of health workers should be based on a strategic approach targeting specific areas identified through an analysis of hospital ICT needs.

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