


Personalizing a Patient's Pathway: The Role of E-Health Innovations?

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Abstract

A personalized patient pathway must combine the role of a digital platform coupled with Artificial Intelligence and nurse navigators to improve care and service delivery along the patient pathway. Despite numerous initiatives for personalizing patient care, a systematic approach to identifying and responding to patient needs is lacking. To tackle this issue, a personalized intervention that could benefit healthcare managers and professionals can be proposed.

Introduction

In the last few years, there has been increasing interest in the personalization and customization of healthcare. The concept of personalization has emerged primarily through the approach of “personalized medicine”, which enables the development of tailored therapies based on patients’ clinical, biological, and genomic characteristics [1]. Additionally, personalization can refer to broader elements, such as the socioeconomic status of the most vulnerable patients [2]. However, personalization can also extend to another dimension, often associated with “patient-centered care”, which incorporates patients’ non-clinical needs and preferences [3]. Altogether, for patients, this entails considering all their needs and demands, clinical and non-clinical, and that the response provided as part of their care plan must be in line with it [4,5]. This also means that an early and thorough assessment of patients’ needs, characteristics, and preferences is essential to personalize their care [6]. It is equally important to maintain and improve the quality of life and satisfaction of patients [7]. Yet, despite the positive impacts that have been reported with personalization, research into how to implement and combine these approaches for healthcare delivery systems is lacking. This kind of systematic approach, which combines the clinical and non-clinical dimensions of patients and integrates organizational efforts to provide a specific, personalized response, is still in its infancy, despite the fact that it favors patients’ perspectives [4,8].

Drawing lessons from other industries applying mass customization models, we observe the utilization of information technology and flexible work processes to customize products at low incremental costs for individual consumers [8,9]. This type of mass customization goes beyond personalization drawn from cellular or molecular signatures to that drawn from social, behavioral, and environmental factors. Therefore, implementing such a systematic approach to personalize patient care necessitates leveraging technology, digital health, and the roles of healthcare professionals. In other words, we believe that personalizing a patient pathway requires a systematic approach that involves first, a digital platform that can collect and centralize patient data and provide response across different patient profiles and needs [10]. One of the examples that demonstrated its effectiveness is the CAPRI program [11] that uses Patient-Reported Outcome Measures (PROMs) to monitor the occurrence of side

effects from cancer treatment. Based on each patient's PROMs, the platform generates alerts to the nurse, who can then take action accordingly, such as organizing a patient admission or referring a patient to the doctor [12].

Second, disruptive technology emphasizes the role of Artificial Intelligence (AI) and algorithms that use real-time patient data to define an appropriate personalized response. By coupling AI with a digital interface and supply chain techniques, it can support human input, decision-making, and care provision. AI, optimization algorithms, big data, and language processing are currently being used in the healthcare industry, to monitor long-term behavioral trends, detect individual risks and opportunities, and make data-driven estimations [13]. Finally, it is important to note that human expertise still plays a crucial role in healthcare. More specifically, the roles of nurse navigators in the healthcare process. These include enabling authorized care providers to access data, patient follow-up, collaboration with professionals and coordination throughout the care pathway.

Managerial Implication

We believe that a personalized patient pathway must combine the role of a digital platform coupled with AI and nurse navigators to improve care and service delivery along the patient pathway; this involves both hospitalization and ambulatory care phases [14]. Noting that implementing such an organizational model raises structural challenges within healthcare organizations and requires collaborative attitudes among professionals to share knowledge about patients' life trajectories. In summary, despite numerous initiatives for personalizing patient care, a systematic approach to identifying and responding to patient needs is lacking, despite its potential to improve patient care. To tackle this issue, we have proposed an example of a personalized intervention that could benefit healthcare managers and professionals.

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