Chapter 10
Patient Empowerment and Analytics

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ABSTRACT

The healthcare system is focusing more on patient empowerment leading to patients with active health management. In this process, although some mechanisms exist, there is a need for patient empowerment to move to a new realm where the empowerment process is activated remotely from the patient’s side. With the increasing importance of Internet and e-health, it is believed that patient empowerment can be facilitated in the online setting and can be more effective than traditional face-to-face setting. Facilitating patient empowerment online also paves way to data analytics as various online activities can be tracked and the emerging analytic techniques can be utilized to gain insight into the data. This chapter provides knowledge on patient empowerment, data analytics, and their relationship including the role of patient empowerment in data analytics.

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Patient empowerment has long been proven to be useful in the healthcare industry (Anderson, 2007). Physicians suggest that patient empowerment is effective in helping patients who suffer from chronic symptoms and various severe diseases. Patient empowerment has been incorporated into the treatment regimen in many areas such as breast cancer, diabetes, and several types of psychological disorders.

In this era, when Internet has played an important role in connecting people around the world and even connecting various kinds of devices (i.e. wearable devices), the realm of patient empowerment has been moving towards the online world. More and more research has focused on how online technologies can not only inform but also intervene in managing personal health. Extant research studies examined factors such as demographics associated with online patient empowerment, generating and sharing medical knowledge and experience to complement existing system of knowledge (Permwonguswa, Khuntia, Yim, Gregg, & Kathuria, 2018). More recent studies explore how patient empowerment and participation contribute to their well-being and improve their health outcome, and the role of online technologies in augmenting or mediating end outcome.

Pervasive use of smart devices and increased bandwidth on communication technologies reduce inefficiencies in delivering medical knowledge to patients, as well as geographical distance between patients and medical experts, thereby enhancing patient accessibility to services. Self-help mobile monitoring apps such as diet, exercise, and sleep, as well as reminders to take medicine or keep appointments greatly improve patients to manage their own health effectively. In addition, medical conditions related to mental health are mentioned as areas for new opportunities as technologies provide privacy and anonymity.

For example, a 12-week internet-based cognitive behavioral therapy program improved patients with body dysmorphic disorder through reading self-help texts, completing interactive worksheets, and communicating with therapists via a messaging app within the platform (Enander et al., 2019). Mobile apps such as Woebot and Happify provide self-help to those with mild depression or mental health related issues to cope with daily stress (Carpenter et al., 2017).

Proliferation of websites, social networking technologies, and mobile apps enabled not only users from diverse background adopting these technologies to consume but also generate tremendous amount of data for new applications, especially in healthcare. The infrastructure, platform, and service availability on the cloud to store and process huge amounts of data necessitated a shift in data analytics paradigm. Moreover, the Internet of Things revolution is rapidly transforming disconnected systems of sensors, medical equipment, and hospitals and service facilities into a truly connected healthcare ecosystem.
A Case Study to Improve Data Vendor Selection
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