


## Chapter 21

# Impact of Patient Health Education on the Screening for Disease Test–Outcomes: The Case of Using Educational Materials From the Internet and Online Health Communities

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### ABSTRACT

*Screening for diseases is a medical process to predict, prevent, detect, and cure a disease in people at high risk. However, it is limited in the quality and accuracy of the outcomes. The reason for this is the lack of long-term data about the health condition of the patient. Launching modern information and communication technology in the screening process has shown promise of improving the screening outcomes. A previous study has shown that patient education can positively impact the patient behavior face to a disease and can empower the patient to adopt a healthy lifestyle and thus avoid certain diseases. Offering medical education to the patient can positively impact screening outcomes since educated and empowered patients are more aware of certain diseases and can collect significant information. This can minimize the rate of false positive as well as false negative screening results. This chapter analyzes how medical education can contribute to improving screening outcomes.*

### INTRODUCTION

The screening for diseases is a medical test procedure to predict, prevent, early detect a disease of concern, and cure people at high risk to develop the said diseases. However, a screening for diseases has limitations. These limitations include the quality and accuracy of the screening-test-outcomes that can

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be assessed based on the level of the test sensitivity and specificity which in turn can be measured based on the number of false-positive and false-negative test-outcomes. The main reasons underlying these limitations are under others the lack of long-term and accurate data about the health condition of a patient.

Long-term data is data unbrokenly collected over a long period. This implies an appropriate health conditions and/or diseases awareness level. Health conditions awareness level and individual's behavior towards diseases are associated with the patient health education level. Patient education can also empower individuals to adopt a healthy lifestyle. Based on the existing literature, the patient education is supported by the health literacy which in turn influences health outcomes. Since the medical knowledge level is, somehow, associated with the health outcomes, a question arises: can the patient health education and the health literacy impact the screening-test-outcomes? How can this happen?

This chapter has investigated the research questions above and got insight into how the health literacy level influences the health outcomes and analyzes how the patient education can contribute to improving the screening outcomes too. An experiment involving participants with different health literacy level (high, medium, low, poor or inexistent) level had figured out that both the health literacy level combined with patient health education level can contribute to reducing the rate of false-positive and false-negative screening test-results and thus increase the sensitivity and specificity of screening tests.

## **1. BACKGROUND AND LITERATURE REVIEW**

Patient education can empower patient, increase his diseases awareness level, and thus contribute to adopting a healthy lifestyle to prevent disease as far as possible (Edoh, Zogbochi, Pawar, Hounsou, & Alahassa, 2017). Health education is a well-spread process but not sustainable. The existing methods are limited due to financial concerns, education level of the population, especially in developing countries, lack of adequate materials. Furthermore, this limitation is due to infrastructural and structural issues healthcare systems are facing worldwide, but developing countries bear a big burden of this issue.

### **1.1 Association Patient Health Education, Health Literacy, and Health Outcomes**

#### **1.1.1 Health Literacy**

Health literacy is the ability to independently look for, find, process, and understand health-related information as well as to use healthcare services for taking appropriate health relevant decisions. Health literacy implies health education which in turn implies health-related information. The health education level is strongly dependent on the quality of the content of materials used, thus, health literacy also depends on health-related information that people receive.

Literacy is also defined as a cognitive ability to read, write, understand written information, effectively communicate, and listen to someone. Thus, Health Literacy is the literacy applied to health (written) information and management (Roberts, 2015). Sørensen et al. (2012) have conducted a review of papers dealing with the term of health literacy in order to *identify the definitions and conceptual framework* of the term. They proposed, based on the results of the review, to integrate the medical and public health views of health literacy for a better understanding of the term.

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