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Reality versus User's Perception in Finding Answer to Clinical Questions in Published National Guidelines on the Web: an Empirical Study

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Abstract

Advances in information systems have enabled guideline developer organisations to disseminate the guidelines on the web with accompanied search functionality. The aim of searching functions is enabling guideline users to find the most relevant guideline for their clinical questions. Hence evaluating the user experiences in finding answers to their clinical questions in the published guidelines on the web with search functionality is important in order to understand the factors that affect users' satisfaction and performance. Thus, in this study we studied how users interact with clinical guidelines during the decision making process, and examined how the structure of the clinical guidelines accompanied with search function impacted finding the right answer. We conducted an empirical study with a total of 19 medical students, divided into two groups. The first group accessed the list of all available national stroke guidelines while the second group accessed the most relevant guidelines. First a scenario was given to the participants. Second, the participants were asked to follow a set of tasks and then fill out a questionnaire. Analysis of the answers revealed that the more relevant the presented guideline was to the patient scenario, the more the user was successful in finding the right answer, the easier it was for the user to find the answer and the more satisfied the user was with the guideline structure. Although the objective measure of finding the answer in the second group was higher, their perception of finding the right answer was lower than the first group. Hence, a more detailed study is required to investigate what factors impacted the participant's perception score. Our findings highlight that conducting a usability test on the national guidelines user interface and investigating the best position of the search box for capturing the users' attention are necessary.

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1. Introduction

Clinical guidelines are ‘systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific circumstances’¹. The traditional dissemination formats of clinical guidelines were published in magazines, journals, textbooks, CDROMs². Dissemination of clinical guidelines has benefited from information technology and enabled guideline development organization to publish the guidelines on the web in PDF format or as a HTML page. In one study, researchers conducted a survey about medical students’ use of computer-based information resources³. They concluded that more than 85% of medical students use electronic sources as their primary source, on a daily basis.

There are a number of studies have focused on adherence barriers to clinicians when accessing clinical guidelines⁴⁻⁶. In addition, there are a number of studies that have focused on validating the quality of clinical guidelines based on The Appraisal of Guidelines Research and Evaluation (AGREE) instrument⁷⁻⁹. Furthermore, studies in the domain of guideline characteristics have shown that clear structure and an attractive layout, inclusion of specific recommendations, and sufficient supporting evidence contributes to its use in practice^{10, 11}. However, evaluation of users’ interaction with the guidelines published on the web with accompanied search functionality has been neglected. Hence, the goal of this study was to investigate the users’ interaction with clinical guidelines published on the web during the decision making process, and learn how the structure of clinical guidelines accompanied with a search function shapes their decision making when finding the right answer. Furthermore, we compared user’s perception and objective measure of finding the right answer in clinical guidelines. We limited our research scope to national clinical guidelines, more specifically on stroke guidelines. Details of the research design and method are presented in the next section.

2. Research design and methods

In order to reveal the thoughts and implications behind the behaviour of the guideline users, we conducted a case study. First we selected a total of 19 participants and gathered their background information such as previous experiences with clinical guidelines via a questionnaire. We divided the participants into two groups and presented clinical guidelines in two different ways. Later, we asked the participants to follow a scenario, write their clinical question based on the scenario and find an answer to that question in the guidelines. In the last phase we asked them to fill out a questionnaire. The details of our research design are presented below.

2.1. Selection of participants

The participants in our case study were upper-class medical students who were in their last three years at university with some intern experiences at different hospital units. We chose the participants based on a randomised selection method as we sent emails to upper-class medical students and requested volunteer participation. A total of 19 students from the fourth, fifth, and sixth school year volunteered to participate in our study. We randomly divided the participants into two groups.

2.2. Survey

The aim of the survey was investigating the participant’s prior experiences with clinical guidelines and clinical practices. We asked participants to complete a survey before starting the test on Google docs.

2.3. Scenario

The selected scenario in our study was designed based on a clinical situation in which a patient goes to an outpatient clinic for consultation; hence the clinician assesses the patient’s clinical records and lab results, and suggests treatments according to the recommendation in the guideline. We designed an anonymous patient case. The scenario given to the participants was: ‘The patient is male, born on 20.06.1961 who suffered from a cerebral infarction 2 years ago. It was found that he had PFO (patent foramen ovale). He had been to the outpatient clinic

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