

Usability Evaluation of Hospital Websites in Nigeria: What Affects End Users' Preferences?

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Abstract. Hospital providers need to deliver satisfactory services in a specialized field which involves a great number of stakeholders with different concerns, needs and requirements. Some hospitals' policies have been focused on providing health and medical services to the public. Less attention has been given to the responsibility to provide useful, accurate health information of high quality to their key publics mainly by facilitating interactive communication with patients, citizens and physicians and community services. To date, hospitals are turning increasingly towards the Internet and have developed their own web presence in order to enhance interactive communication practices. The research evaluated the usability of hospital websites in Nigeria, focusing on two websites in south- west of the country. Evaluation criteria for assessment were developed. The results provided empirical evidence that websites should be easy to use as well as aesthetically pleasing but must be rich in information content.

Keywords: Usability, Aesthetic Design, Hospital Websites, Evaluation.

1 Introduction

Many patients access the internet for comprehensive hospital information and hospital selection. Medical expertise is not the only selection criterion for those seeking medical help; additional service and trust also play a role [1]. In the competition among hospitals, the question of how a clinic should present itself on the web has set up competition among hospitals. Therefore, hospital websites are becoming an industry standard as patients (consumers) and health professionals use web resources for information, research and communication. Nowadays, citizens are aware of this historic change that is taking place and they are the drivers of a growing demand for a wide-scale adoption of web channels, within contexts such as healthcare services [2] where exchange of information between patient and care provider is formal. However, patients face difficulties when searching the Internet for health- related information, because of information overload or the complexity of the information [3]

Usability, which is a well-defined concept in user interfaces and websites, connotes the ease with which people can employ a particular tool or other human-made object in order to achieve a particular goal [4]. Nielsen [5] explains Usability as a quality attribute that assesses how easy interfaces is to use. When evaluating the user interfaces for usability, it can be defined as “the perception of a target user of the effectiveness (fit for purpose) and efficiency (work or time required to use) of the interface”. Usability improves the design of user interfaces by evaluating the organization, presentation, and interactivity of the interface [6]. Usability is a key measurement for evaluating the success of an organization’s web presence [7]. The concept of usability is a key theme in Human-Computer- Interaction (HCI). Research in HCI has shown that the study of human factors is important to the successful design and implementation of technological devices [8].

Norman [9] claims that aesthetic design can be more influential in affecting user preferences than traditional operational usability. Not only is beauty an important quality of a product but it also influences users’ judgments [10]. Studies have shown the relationship between the perceived aesthetic quality of a system’s user interface and overall user satisfaction [11], [12], claiming that aesthetic design can be a more important influence on users’ preferences than traditional usability [9]

In this study, we evaluated two hospital websites in Nigeria, investigating the relationships between content, presentation, usability and memory and their importance to users’ preferences.

2 Methodology

Two hospital websites were selected; one public hospital website and one private hospital website, namely: Lagos University Teaching Hospital and St. Nicholas Hospital. The two websites were picked for their variation in usability, content and aesthetic design. The two websites represent the most popular hospitals in the south-west of Nigeria.

2.1 Participants

47 participants, ranging from health professionals as to prospective patients, participated in the evaluation exercise. All participants were expert web users but none had prior knowledge of the two hospital websites. All participants volunteered and no incentive was provided for their participation. All participants gave written consent.

2.2 Procedure

Each participant worked individually for almost an hour in evaluating the hospital websites. The websites were evaluated for usability, content, aesthetic design and information quality. Each participant examined the websites one after the other. The criteria consisted of four categories with subcategories / dimensions (Table 1). The subjects rated each site on a 1-5 scale which can be viewed in Table 3.

Table 1. Assessment Criteria

Evaluation Criteria	Dimensions
Usability	Visibility, navigation, flexibility, efficiency, ease of use
Accessibility	Ease of retrieval
Aesthetic Design	Visual attractiveness, appropriate choice of colours Images, fonts, consistency
Information Quality	Accurate, relevant, reliable, concise, timely

3 Results and Discussion

Table 2 below shows demographics of the participants based on selected variables (age, gender, education, computer experience and Internet experience).

Table 2. Demographics of Participants

Variable	Frequency	Percentage
Age		
20-25	10	21.3
26-30	10	21.3
31-35	12	25.5
36-40	10	21.3
41-45	5	10.6
Gender		
Female	21	44.7
Male	26	55.3
Education		
Bachelor	30	63.8
Masters	13	27.7
PhD	4	8.5
Computer Experience		
20-25	16	34.0
26-30	10	21.3
31-35	10	21.3
36-40	6	12.8
41-45	5	10.6
Internet Experience		
20-25	18	38.3
26-30	10	21.3
31-35	8	17.0
36-40	7	14.9
41-45	4	8.5

4 Discussion

As illustrated in Table 3, 47 participants rated each website according to the criteria based on a Likert scale of 1 to 5 (1 equals strongly disagree and 5 equals strongly agree).

Table 3. Participants Rating the Hospital Websites

Hospital Website	Evaluation criteria	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
St. Nicholas Hospital	Usability	0	4	3	8	7
	Accessibility	0	4	3	8	7
	Aesthetic Design	0	3	9	9	7
	Information Quality	0	3	4	9	7
Lagos University Teaching Hospital (LUTH)	Usability	0	15	4	6	0
	Accessibility	0	18	2	0	0
	Aesthetic Design	0	16	3	0	0
	Information Quality	5	16	3	0	0

The usability scores of the two hospital websites with regards to performance in terms of the four categories are summarized as follows:

1. Usability: St. Nicholas was rated high in all dimensions by 15 participants; for Lagos University Teaching Hospital (LUTH), only six participants agreed to all the dimensions under usability.
2. Accessibility: 18 participants disagreed that LUTH was accessible, as compared to the 15 participants rating St. Nicholas as highly accessible.
3. Aesthetic Design: LUTH still recorded a low score.
4. Information Quality: participants rated St. Nicholas as rich in terms of information quality, as compared to LUTH.

The overall scores showed that the St. Nicholas hospital website was preferred by users.

5 Conclusion

The developed usability criteria which are specific to hospital website evaluation would provide guidance for designers of such websites regarding website features that should be taken into consideration. This study also revealed that when it comes to hospital websites, the information quality, which has to be the health information, is as much important as aesthetic design and usability.

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