

Mobile web platform for the improvement of knowledge and actions under nursing care

Abstract

Introduction: The great development of information and communication technologies (ICTs) in recent decades has made possible the growth of new ways of the training in the health field.

Objectives: To develop and evaluate the effectiveness of a mobile web application by the CIPP method that, in a fast manner, allows the healthcare professional, to have a quick response system that is clear and concise, allowing the professional to obtain solutions to specific problems and risks in order to improve the care which is provided.

Methodology: This study has been structured in two phases: first, to develop a manageable web platform that is accessible from any mobile device; and second, to perform a dual assessment of the platform.

Results: A functional platform has been obtained, and its double rating is satisfactory (4.0/5 professionals and 3.86/5 students).

Conclusion: An upgradeable web platform and capable of being used in any electronic device, was obtained.

Keywords: mobile web platform, improvement of knowledge, nursing care

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Introduction

The great progress made by information and communication technologies (ICTs) in recent decades has enabled the growth of new avenues of research applied to training in the health field,¹ with many focusing on various multimedia tools, such as games, simulations, and videos.^{2,3} Currently, the uses of ICTs have provided a wide variety of pedagogical tools that are accessible from any electronic devices^{4,5} for nursing students.⁶

Learning based on e-learning, being ubiquitous, allows easy access anywhere;^{3,7} in addition, the design of games or simulations, included in web platforms, enables the teaching to be more dynamic.^{8,9} The nursing professionals are the most important,¹⁰ health workers that use a mobile phone for work. They use their personal mobile phones in order to acquire information and to be in contact with the rest of the health team.¹¹ In addition, the professionals, who use their mobile at work with the intention of performing their health work, have a higher probability of improving their clinical skills.¹² All most every web platform or mobile app made is focused on communication between health care professionals and patients with chronic diseases or groups of at-risk populations such as high-risk pregnancies.¹³ However, there

are others fields that could use the potential mobile application such as family members that take care of different type of patients such as dialysis patients.

This research has the following purpose:

- To participate to the correct decision-making in the probable scenarios that the health professionals could face, without using techniques this could represent a risk for them or the patients.

Specific objectives

- The design and development of a web platform which is fast and upgradeable.

Methodology

The methodology of the research has been divided into two phases:

First phase

This phase is focused on the design of the Web Platform Health portal for information and the training of professionals Figure 1 (<http://www.uco.es/psam/rpsindice.php>).

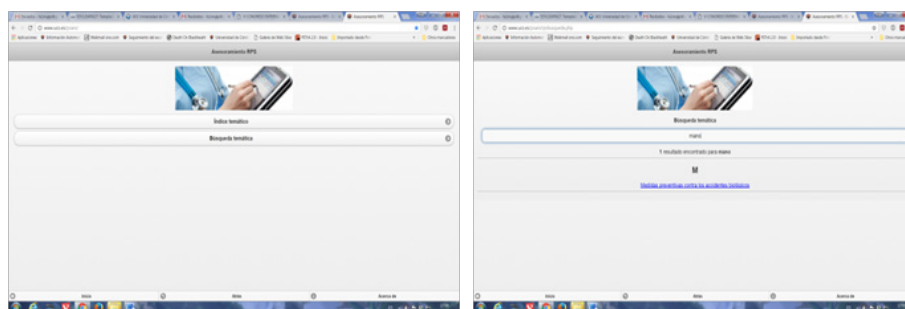


Figure 1 (A) Web Platform Health Home screen and (B) immediate information search.

The web tool is characterized by a freely and easy access, which allows it to be used by any professional or person interested and anywhere. The web intentions to teach and inform health professionals, both experts and just graduated. The main purpose of creating this platform is to obtain a resourceful application that can provide any type of information to patients and professionals deleting their doubts and providing information in several matters such as biological accidents or how to eliminate the biological waste.

Second phase

In the second phase, a double study was conducted; firstly, the expert professionals (N=7) evaluated the web platform by a questionnaire; and secondly, the future health technicians also evaluated the platform with the same questionnaire (N=26). The evaluation has been based on the CIPP method in order to accomplish this task; several questionnaires based on a recent work have been used, following the methodology proposed by Stufflebeam. According to the CIPP method, the evaluation should consider four issues, namely context, input, process and product.¹⁴

Results

First phase

An operative, interactive, and dynamic web platform has been accomplished which can be upgraded from any device and whose main objective is to improve the knowledge and preparation of health professionals and patient in several fields from standard precaution measures to the correct wash of hands.

Second phase

The results obtained from the interviews with health experts and technical students in the health sciences have been structured into general opinion, information contained in the themes, the usability of the platform multimedia content.

The results of the survey of the experts Table 1 show that the overall the final evaluation of the platform was on average 4.0 out of 5, with this value being defined as good by the health experts, which implies that the platform developed has a great potential in order to inform and former the patients and the health professionals. However, when studying the question about multimedia, it is obtained the worst the average (3.98/5 in multimedia content), although usability (4/5) is the best valued. On the other hand, the evaluation of the platform performed by the students Table 1 shows how the overall opinion (3.87/5) is lower than the results of the professional health experts, regarding it as being between “good” and “acceptable”. However, the multimedia content (3.65/5) has the lowest value.

Table 1 Evaluation of the platform by health experts and technical students

Evaluation of experts (N=7)	Mean	SE (Mean)	CV
General opinion	4	0.204124	0.102062
Usability	4	0.204124	0.102062
Multimedia content	3.9875	0.1125	0.056426
Evaluation of the students (N=26)	Mean	SE (Mean)	CV
General opinion	3.869565	0.201813	0.250122
Usability	3.826087	0.173913	0.217992
Multimedia content	3.652174	0.204772	0.268895

SE, standard error of the mean; CV, coefficient of variation

Discussion

First phase

The main result of this research has been an interactive, compelling and updatable web platform that allows its access from any device for the nursing care, in which platform is contains several situation of risk that may the nursing personal face in their daily work and how to prevent and act when it happens. These confirm the main objective proposed in this research by the results obtained and this later discussion.

Second phase

The obtained has been focused on the professional in order to evaluate the information that may use the patients or family members or even the same health professional. On the hand, the professionals are given information about techniques and the use of standard precaution measures, on the other hand the patients are given information about the maintenance of the family patient. The final data reflect how the platform, which has been evaluated by students and experts, is defined as “good”. However, the data reveal how students value the multimedia content and general opinion of the platform, from 3.65 to 3.86, whereas experts value it better, from 3.98 to 4. These values coincide with previous studies focused on patients’ platforms, in which satisfactory results regarding the opinion of users were obtained.^{15–17} In addition it also confirm what previous studies have shown about the opinion of the students, focused on the importance of multimedia, and the professionals, focused on the usability.^{18–19}

Conclusion

It has been shown that the use of application and virtual platforms have increased during the last decade in order to cover the different necessities of the population shows by previous researches.

The result is an upgradeable web platform capable of being used in any electronic device available on the market capable of cover the necessities of a huge amount of population of several fields. This platform has been defined as satisfactory by potential users, students and professionals.

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Conflict of interest

The author declares no conflict of interest.

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