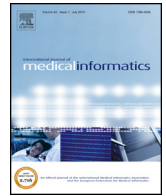




Contents lists available at ScienceDirect

International Journal of Medical Informatics

journal homepage: www.ijmijournal.com



Using a virtual patient system for the teaching of pharmaceutical care

Elisa Menendez^a, Blície Balisa-Rocha^b, Monique Jabbur-Lopes^b, Wanderson Costa^a,
José Rafael Nascimento^a, Marcos Dósea^a, Leila Silva^{a,*}, Divaldo Lyra Junior^b

^a Department of Computing (DCOMP), Federal University of Sergipe, Brazil

^b Laboratory of Teaching and Research in Social Pharmacy (LEPFS), Faculty of Pharmacy, Federal University of Sergipe, Brazil

ARTICLE INFO

Article history:

Received 14 January 2015

Received in revised form 26 May 2015

Accepted 28 May 2015

Available online xxx

Keywords:

Virtual patient

Pharmaceutical care

ABSTRACT

Purpose: The communication skills of pharmacists are essential for the identification and reduction of patients' drug related problems. Therefore, Pharmacy courses started the process of teaching Pharmaceutical Care to students in order to improve their communication skills.

The use of virtual patients (VP) has been a widely used technique in health care courses, but many of the VP tools in Pharmacy field are in English and do not have clinical cases that are common in tropical countries, such as Brazil. The aim of this work is to describe the PharmaVP system, developed with the purpose of training Latin America students in Pharmaceutical Care. The main differential of PharmaVP is the availability in three languages (Portuguese, English and Spanish) and the possibility of clinical case evolution, simulating several visits made by the patient.

Methods: The system was developed according to an incremental and interactive methodology, well suited for conducting multidisciplinary projects.

Real clinical cases were collected from a Pharmaceutical Care program and added in PharmaVP to simulate the virtual patients. Then, 31 students of a Pharmacy course were trained and invited to participate of the evaluation study. They used the software and answered adapted instruments that assess the students' acceptance of, use of, learning of, and satisfaction with the system.

Results: The results showed that the students found the cases realistic and learned significantly using the software. Another positive point is that the application process of PharmaVP did not consume much time.

Discussion: We can conclude that the virtual patient tool contributed to the development of the skills required for the practice of Pharmaceutical Care, but should be used as complementary technique.

© 2015 Published by Elsevier Ireland Ltd.

1. Introduction

Drugs are in general effective in the treatment of diseases, but sometimes generate adverse reactions in patients. The problems are caused either by negligence or recklessness, as well as by accident, and may be predictable or not [1]. For example, in Brazil, according to data from SINITOX [2], the number of recorded cases of poisoning caused by medications was the highest in 2012, 27.26% of the total intoxication cases that year.

In order to investigate this problem, health professionals and researchers are constantly looking for strategies to minimize the problems caused by inappropriate use of medicines. The lack of

communication between pharmacists and patients is the major cause of drug-therapy problems (DTP) [3]. DTP can be defined as any undesirable event observed in the patient that may involve pharmacotherapy and can interfere in the desired evolution of the patient disease.

The effective delivery of pharmaceutical care interventions requires not only technical knowledge about medication, but also skills for communicating properly with the patient. This issue was highlighted by the World Health Organization (WHO) in its 1997 report "Preparing the pharmacist for the future", where communication was considered one of the main skills that should form pharmacists [4].

Therefore, the ability of communication should be developed in Pharmacy students through the practice of pharmacotherapy in a more intensive way. The Pharmaceutical Care, one of the disciplines of the Pharmacy course, aims to develop communication skills between the student and the patient. In order to achieve the goals, students must learn how to design, implement and monitor care plans, for the prevention of DTP [5].

* Corresponding author at: Marechal Rondon Avenue, Department of Computing (DCOMP), Federal University of Sergipe, Rosa Elze, São Cristóvão, Sergipe, Brazil. Zip Code: 49100-000. Tel.: +55 79 21056678.

E-mail address: leila@ufs.br (L. Silva).

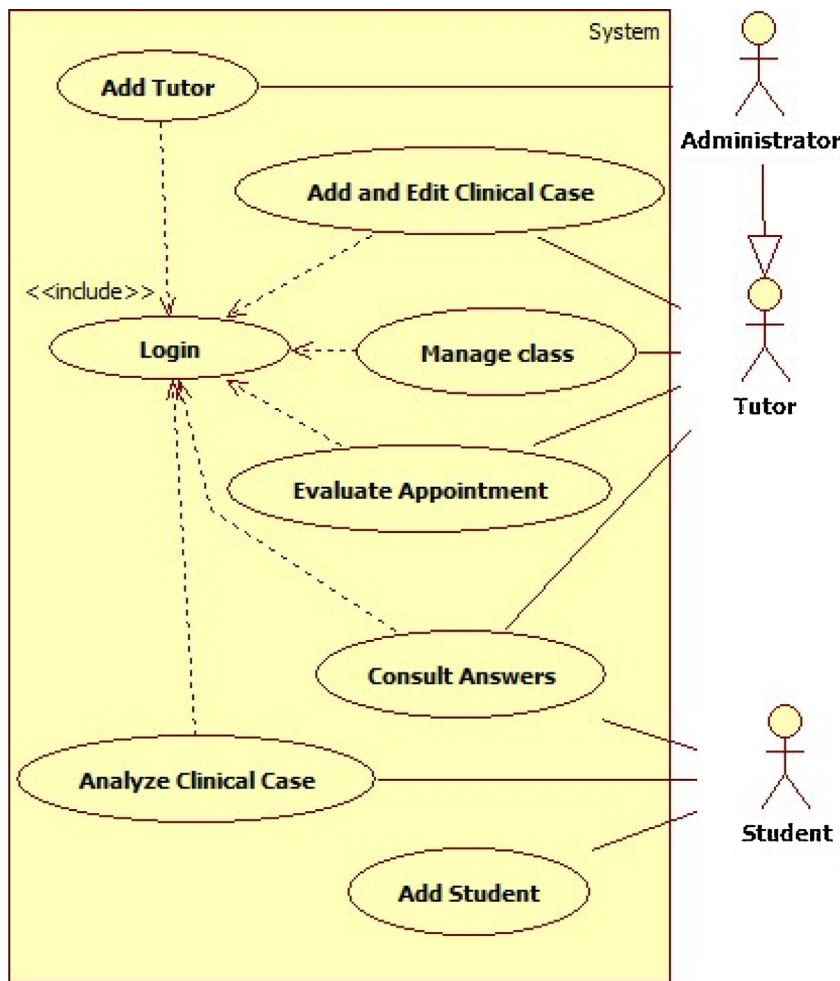


Fig. 1. Use case diagram.

The Pharmaceutical Care emerged from a more detailed study of Clinical Pharmacy, with the insertion of a highly humanistic component focused directly on the patient and has shown positive impact on health systems of many countries [6].

It is noteworthy that despite the importance of communication, some universities have not introduced this subject in their curricula and this is very common in Brazil, for example [3]. Nevertheless, in developed countries, the recognition of the value of Pharmacy in the prevention and management of drug-therapy problems boosted Pharmacy courses to teach effective communication skills to students. In these countries, the curriculum has changed to incorporate training in communication skills, including the introduction of theoretical-practical disciplines, as well as the establishment of practice laboratories.

1.1. Virtual patients

Several techniques of teaching have been used to assist the development of communication skills. Learning theorists claim that contextualized education, meaning education that uses a situation close to the one where the knowledge will be used, increases understanding, retention and learning in adults [7]. Furthermore, the approximation of the reality and the application of acquired knowledge in real situations, so that students can relate the theory with the practice, is a source of motivation for learning. Thus, several active learning methodologies that use the contextualized

education have been incorporated into the health care teaching.

The simulation of a patient was one of the techniques that proved to be more efficient to improve communication skills. The use of actors to represent patients has become common in many health courses, but in a class with a high number of students, this solution is not very feasible [8]. Recently, simulation with virtual patients (VP) has been introduced in the teaching of communication and clinical skills [9,10]. This technique consists in using a software that simulates patients. Students can interact with the software, conducting reviews with standardized clinical cases of everyday situations, in order to practice the theory learned about health care.

The technique based on virtual patient simulation has already been used in Pharmacy field [11,12]. The work presented in Zary et al. [13], discusses a software project for the education of health care for various courses, including Pharmacy. The system was developed for the web environment, and the student can choose the same patient to do the analysis and subsequent diagnosis. Students accepted well the tool and considered attractive and easy to use.

Marriot [14,15] proposes a system that allows Pharmacy students to choose a standardized patient from a list of patients and a clinical scenario is generated. This tool however, is not used to assign grades to students.

The web system proposed by Benedict and Schonder [16] is used in more advanced classes of pharmaceutical care. In the system

Download English Version:

<https://daneshyari.com/en/article/6926789>

Download Persian Version:

<https://daneshyari.com/article/6926789>

[Daneshyari.com](https://daneshyari.com)