

Software For the Development of Knowledge in Acupressure for Collaborators of The Cuban Medical Mission

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Abstract

Introduction: According to the World Health Organization, Traditional and Complementary Medicine is an important part of prevention and health care; its practice occurs in almost all countries in the world. Objective: Design a software for the development of acupressure for the collaborators of the Cuban Medical Mission in Venezuela.

Methods: An innovative development study was carried out in the sister Republic of Venezuela, in the period from March 10 to May 15, 2023. The study sample was made up of 30 Cuban doctors specializing in Comprehensive General Medicine who worked in different states within Venezuela that gave their consent to participate in the study.

Results: The specialist group was made up of 12 (5 MTN specialist doctors and 7 computer science graduates), who agreed with the software design for its implementation in all the analyzed parameters. In the knowledge related to the generalities of acupressure before the intervention, 6.66% knew that it was the same, a result that changed after the intervention reaching 76.66%.

Conclusions: The educational software fulfilled the use for which it was created as an educational tool, with principles of didactics, becoming more motivating when incorporating knowledge about the topics of acupressure to doctors in service.

Kew Words: educational software; knowledge development; electrocardiogram

Introduction

According to the World Health Organization (WHO), Traditional and Complementary Medicine (TCM) is an important part of prevention and health care, its practice occurs in almost all countries in the world. These medicines developed with quality, safety and effectiveness, contribute to ensuring people's access to health care. ⁽¹⁾ Therefore, the document WHO TCM Strategies (2002-2005 and 2014-2023), recommends that governments support training activities for health personnel in TCM in a comprehensive manner, which includes the training of TCM skills in response to social needs and in coordination with conventional medicine. ⁽¹⁾ While traditional Chinese medicine (TCM) is widely practiced in Asian populations such as China, Hong Kong, Taiwan and Singapore; In recent decades, many non-Asian countries have also recognized the enormous therapeutic potential of traditional therapies and intensively take advantage of the benefits of these medical practices. In the last three decades, various Western countries such as Germany, the USA, Australia, among others, began the application of various traditional Eastern medicine therapies in public and private health services. ⁽²⁾ In recent years, new policies have been projected aimed at "making Information and Communications Technologies (ICT) become a

strategic development sector for the nation, strengthening an economy based on knowledge, which is expressed in significant contributions to exports and the national economy, facilitating broad access to digital content and services by citizens ⁽³⁾.

Currently, the computer networks in the different medical schools have been expanded and have network nodes that guarantee communication and access to medical information through links dedicated to the Infomed Health Telematics Network. They also provide their users with multipop email services, FTP for downloading teaching and computer materials, and Internet browsing. Each of the faculties has its own institutional website, where they publish the information necessary for the development of their teaching-research and extension activity. ⁽³⁾ As a guarantee for the future, the Medical Teaching Program in Venezuela is strengthened, 19 years after its launch, with the collaboration of Cuban specialists, who have planted in this sister land a pool of health professionals, essential to safeguard attention to the people. At the close of this year 2023, and just when we have just celebrated Educator's Day in Cuba, the Medical Teaching Program in Venezuela shows

commendable results, another mark of the island's consecrated teachers who leave their mark in the classrooms of the Bolivarian nation. (4) In order to continue contributing to the development of knowledge in this sister nation, our objective is to design software for the development of acupressure for the collaborators of the Cuban Medical Mission in Venezuela.

Method

An innovative development study was carried out in the sister Republic of Venezuela, in the period from March 10 to May 15, 2023. Structured by three stages, where in the first stage bibliographic searches were carried out in indexed databases (PubMed, CUMED, Google Scholar and SCIELO), to learn about didactic means of teaching and learning capable of providing knowledge to doctors providing services on acupressure. In the second stage, the acupressure teaching methods were determined and a diagnosis was developed to know the real state of knowledge in the study subjects. And in

the third stage, educational software was designed through a computer platform that fulfilled didactic elements that make the knowledge to be imparted more accessible, it was validated by an expert group and the results obtained with the application of the proposal were evaluated. The study sample was made up of 30 Cuban doctors specializing in Comprehensive General Medicine who worked in different states within Venezuela who gave their consent to participate in the study. Through computer collaborators in different states where they worked, a knowledge diagnostic pre-test was applied, the software was designed and validated by a group of specialists, then the software was delivered to the study subjects for their educational interaction and explained how to work with it, in case of difficulty computer advice was offered. Finally, a post-test was applied to compile the knowledge acquired after working with the proposed software. The software consists of a presentation, a content menu that reflects different topics related to acupuncture, these topics are related to images and figures for a better understanding of the contents (Figure 1).



Figure 1. Images of the educational software for acupressure

This educational intervention was approved by the Directorate of the Cuban Medical Brigade in Venezuelan territory by the training personnel and the Science and Technology personnel.

The specialist group was made up of 12 members (5 doctors specializing in MTN and 7 graduates in computer science), in the indicator's scientific validity of the topics, relevance, usefulness for learning, applicability and functionality everyone agreed (100%) (Table 1).

Result

Software Features	OK		Not agree	
	No.	%	No.	%
Form of content presentation	10	83.33	2	16.66
Scientific validity of the topics addressed	12	100	0	0
Language	eleven	91.66	1	8.33
Environmental design	9	75	3	25
Relevance	12	100	0	0
Representation of a teaching model	10	83.33	2	16.66

Utility for learning	12	100	0	0
Applicability	12	100	0	0
Content	eleven	91.66	1	8.33
Ease	10	83.33	2	16.66
Functionality	12	100	0	0
Originality	eleven	91.66	1	8.33
User interface	10	83.33	2	16.66

Source: survey of specialists

Table 1. Assessment by specialist criteria

Within the characteristics of the doctors, the age group between 25 and 30 years (56.66%) and the male sex (73.33%) prevailed. 30% worked in the state of Carabobo and 23.33% in the state of Aragua (Table 2).

age group	No.	%
From 25 to 30 years	17	56.66
From 31 to 40 years	9	30
More than 40 years	4	13.33
Total	30	100
Gender		
Female	8	26.66
Male	22	73.33
Total	30	100
State where I work		
Carabobo	9	30
Bolívar	2	6.66
Aragua	7	23.33
Merida	4	13.33
Zulia	5	16.66
Miranda	3	10
Total	30	100

Source: survey of doctors

Table 2. Distribution of doctors in the study according to age, sex and state where they work in Venezuela

In the knowledge related to the generalities of acupressure before the intervention, 6.66% knew that it was the same, a result that changed after the intervention reaching 76.66% (Table 3).

Level of knowledge about general acupressure	Before the software		After software	
	No.	%	No.	%
Appropriate	2	6.66	23	76.66
Inappropriate	28	93.33	7	23.33
Total	30	100	30	100

Source: survey of doctors

Table 3. Doctors according to their knowledge of general acupressure (before and after the intervention with the software)

When analyzing the knowledge that the doctors had about the 18 healing points adequately, this indicator after the intervention was improved since 100% points before the intervention with the software, only 3.33% responded identified these healing points (Table 4).

Level of knowledge about the 18 healing points	Before software		After software	
	No.	%	No.	%
Appropriate	1	3.33	30	100
Inappropriate	29	96.66	0	0
Total	30	100	30	100

Source: survey of doctors

Table 4. Doctors according to their knowledge of the investigative ability to explain (before and after the intervention with the software)

It is shown in the knowledge about the use of acupressure points before the intervention with the software, where 10% responded to the appropriate indicator, and after the intervention 86.66% of the doctors responded favorably. In relation to the emergency points in the appropriate indicator,

the doctors were completely unknown and once the intervention was finished in this same indicator, the doctors responded adequate in 83.33%. In the indicator on knowledge of the location of points before the intervention with

the software, 13.33% responded adequately, after the intervention in this same indicator the level of knowledge improved to 76.66% (Table 5).

Level of knowledge about the use of acupressure points	Before software		After software	
	No.	%	No.	%
Appropriate	3	10	26	86.66
Inappropriate	27	90	4	13.33
Total	30	100	30	100

Level of knowledge about emergency points	Before software		After software	
	No.	%	No.	%
Appropriate	0	0	25	83.33
Inappropriate	30	100	5	16.66
Total	30	100	30	100

Level of knowledge about point location	Before software		After software	
	No.	%	No.	%
Appropriate	4	13.33	23	76.66
Inappropriate	26	86.66	7	23.33
Total	30	100	30	100

Source: survey of doctors

Table 5. Doctors according to knowledge about the use of acupressure points, emergency points and point location (before and after the intervention with the software)

Discussion

Today the teaching aids have ceased to be the classic "auxiliaries" of the teacher and have become components of the teaching-learning system; It is not simply a semantic change, but a complex renewal of functions and concepts.[5].

In our work, the specialist group was made up of 12 (5 doctors specializing in MTN and 7 graduates in computer science), which agreed with the design of the software for its implementation in all the analyzed parameters. The age group between 25 and 30 years old and the male sex prevailed. Most of the doctors in the study worked in the state of Carabobo, Venezuela. The knowledge that was had before the intervention with the educational software was below the level of knowledge that must be had to use acupressure as an alternative therapy, after the intervention the levels of knowledge were developed allowing a practical approach in the place of work as a healing alternative.

Other studies make positive reference to the use of educational software for development in Traditional Natural Medicine, such as those by Suárez et al.,⁽⁶⁾ evaluated the usefulness of the Fitosoft multimedia for knowledge about Natural and Traditional Medicine to 60 third-year medical students at the Faculty of Medical Sciences of Bayamo. Before applying multimedia, 70% of the students reflected a low level of knowledge. After using the computer product, 90% achieved high levels of knowledge.

On the other hand, Guevara and Lorenzo [7]. created a multimedia application for the study of Natural and Traditional Medicine integrated into the study plan of the Medicine degree. 100% of the evaluated variables reached average scores above the value of 7 points, which qualitatively places them in the Very Adequate evaluation. The agreement between the experts' criteria was very significantly reliable with a Kendall coefficient of 0.580.

La O et al., [8]. made a multimedia as complementary material to the subject of Traditional and Natural medicine for fifth-year students of the Stomatology career at the "Victoria de Girón" Teaching Polyclinic, in Palma Soriano, Santiago de Cuba. The methodological aspects conceived for the appropriate selection of the contents, images and videos that constitute the body of the same and the development of the multimedia script with the detailed description of each and every one of the scenes of the audiovisual

product produced were taken into account. These contents are located in the subject program.

Domínguez,[9]. evaluated an educational software MEDINAT to 100 5th year students of Medicine, for learning Natural and Traditional Medicine. In the evaluation of the effectiveness of the software, before its implementation, 82% of the students had an inadequate level of knowledge about MNT, after its application, 92% of the students had an adequate level of knowledge. which shows the effectiveness of the MEDINAT educational software with a significance of 0.05.

Robaina et al.,[10]. created a multimedia application for the study of natural and traditional medicine integrated into the Pediatrics subject of the study plan for 25 students and 6 teachers. of the Medicine career. Regarding the level of knowledge of techniques that are oriented in Pediatrics and general contraindications, 64% obtained the rating of bad in this variable during the pretest, 28% obtained a regular evaluation and 8% obtained a good evaluation. After using the software, 76% then know and are able to guide MNT techniques in Pediatrics and their contraindications (assessment of good) in relation to 16% who are regular and 8% who are still unaware. Once the software is used, better results are achieved in this aspect, with 60% of the students responding appropriately with a good rating, 24% average and 16% still experiencing certain difficulties, since they do not completely know how to integrate MNT in Pediatrics. The total number of teachers interviewed (n=6) stated that NatuPedia facilitated the MNT-Pediatrics integration and was useful for them in preparing their classes.

Montes de Oca et al.,[11]. made an educational multimedia about Traditional and Natural Medicine and its use in ophthalmological conditions. Its effectiveness was verified in 210 students from the University of Medical Sciences of Santiago de Cuba through a questionnaire applied before and after using it. Before using multimedia (NaturSoft), 59% of the students reflected a low level of knowledge, a relationship that was modified after its application where 75.7% reached a high level.

Conclusions

The educational software fulfilled the use for which it was created as an educational tool, with principles of didactics, becoming more motivating

when incorporating knowledge about the topics of acupressure to doctors in service.

Conflict of interests

The authors declare that does not exist an interest conflict.

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