



VALIDATION OF EDUCATIONAL TECHNOLOGY FOR CARE IN HEMODIALYSIS

VALIDAÇÃO DE TECNOLOGIA EDUCATIVA PARA CUIDADO EM HEMODIÁLISE

LA VALIDACIÓN DE LA TECNOLOGÍA EDUCATIVA PARA LA ASISTENCIA EN LA HEMODIÁLISIS

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ABSTRACT

Objective: to validate an educational technology for chronic renal patients under hemodialysis. **Method:** an evaluation study about the use of a printed booklet. For the validation feature of the educational material, considering deficiency in theoretical framework turned to the object of study, it was opted the process analysis. The sample consisted of 62 patients aged over 18 years old, undergoing hemodialysis. Data were entered in Excel 2010 and processed in SPSS version 20.0. **Results:** 69.4% were male, 33.9% never studied and 46.8% attended incomplete elementary school; there was a predominance of treatment time of two years, with an average of ± 5 years. Educational technology was considered valid, because it obtained a number greater than about 70% concordance adequacy. Highlighting the style of writing, 190 fully adequate and 167 adequate, all participants rated the appearance of the material as appropriate, 365. **Conclusion:** it can be used as a source in actions for self-management of the disease, thus increasing the possibility of formation of individual awareness for supported self-care; it can also be used as additional support instrument to the continued care process. **Descriptors:** Technology; Nursing; Validation Studies.

RESUMO

Objetivo: validar uma tecnologia educativa para paciente renal crônico em hemodiálise. **Método:** estudo de avaliação sobre o uso de uma cartilha impressa. Pela característica de validação do material educativo, considerando deficiência em referencial teórico voltado ao objeto de estudo, optou-se pela análise de processo. A amostra foi de 62 pacientes com idade superior aos 18 anos, em tratamento hemodialítico. Os dados foram digitados no Programa Excel 2010 e processados no SPSS versão 20.0. **Resultados:** 69,4% eram do sexo masculino, 33,9% nunca estudou e 46,8% cursou ensino fundamental incompleto, houve predominância de tempo de tratamento de dois anos, com média ± 5 anos. Tecnologia educativa foi considerada válida, pois obteve número superior à ordem de 70% concordância de adequação. Com destaque para o estilo da escrita, 190 totalmente adequados e 167 adequados, todos os participantes classificaram a aparência do material como adequada 365. **Conclusão:** pode ser usada como fonte nas ações para a autogestão da doença, assim, ampliando possibilidade da formação da conscientização individual para o autocuidado apoiado; pode ser usada também como instrumento de apoio adicional ao processo de cuidar continuado. **Descritores:** Tecnologia; Enfermagem; Estudo de Validação.

RESUMEN

Objetivo: validar una tecnología educativa para los pacientes renales crónicos en hemodiálisis. **Método:** este es un estudio de evaluación acerca del uso de un folleto impreso. Para la función de validación del material educativo, teniendo en cuenta la deficiencia en la orientación teórica del objeto de estudio, se decidió al análisis de procesos. La muestra estuvo constituida por 62 pacientes mayores de 18 años, sometidos a hemodiálisis. Se introdujeron los datos en el programa Excel 2010 y procesados en el programa SPSS versión 20.0. **Resultados:** el 69,4% eran hombres, el 33,9% nunca estudió y 46,8% asistió a la escuela primaria incompleta, hubo un predominio del tiempo de tratamiento de dos años, con una media de ± 5 años. La tecnología educativa se consideró válida, se obtiene un número mayor de aproximadamente el 70% concordancia de adecuación. Destacando el estilo de escritura, 190 totalmente adecuados y 167 adecuados, todos los participantes clasificaron el aspecto del material según sea apropiado 365. **Conclusión:** se puede utilizar como fuente en las acciones para la autogestión de la enfermedad, lo que aumenta la posibilidad de la formación de la conciencia individual para el autocuidado apoyado; también se puede utilizar como instrumento de apoyo adicional para el proceso de atención continuada. **Descritores:** Tecnología; Enfermería; Estudios de Validación.

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INTRODUCTION

Chronic diseases have been considered a major public health problem, among them chronic kidney disease, which is defined as a lower glomerular filtration rate 60 mL / min / 1.73m² and / or renal damage markers for at least three months in which one of the modalities is hemodialysis.¹

According to the latest census of the Brazilian Society of Nephrology, there are over 90 thousand Brazilians undergoing dialysis with an annual cost of two billion reais and a mortality rate of 17% per year;² however, the effects are not restricted to financial aspects; concerning the experience with these patients, there is the presence of negative feelings, such as fear of prognosis, disability, economic dependence and change the self-image.

In this sense, aiming to contribute to the preparation of the patient who enters the dialysis treatment, collaborating with their process of adaptation, this study aims to validate an educational technology for chronic renal patients undergoing hemodialysis. Prepared following a theoretical framework that implements the prior knowledge of the target audience.³

With this, they have to pretend to provide nursing professionals who work in the service a tool in the continuing care strategy. Based on evidence showing that educational measure has reduced rate of depression and improving the quality of life.⁴⁻⁵ Thus, the purpose of patient education is to increase its competence and confidence for self-management, and disposal strategy that can improve treatment results.

OBJECTIVE

- To validate an educational technology for chronic renal patients undergoing hemodialysis.

METHOD

This is an evaluation study about the use of a printed booklet. For the validation feature of the educational material, considering deficiency in theoretical framework, turned to the object of study, it was decided to process analysis.⁶

The study was conducted in March 2014 in hemodialysis clinic in the city of Picos-PI, accredited to the Unified Health System, with an installed capacity to serve 187 patients per month making calls in four shifts which has a multidisciplinary team of nurses, nursing

technicians, doctors, psychologists, social workers and dietitians.

The population consisted of 187 patients treated at the Kidney Institute; however, 20 patients refused to participate. There were eligible patients who remained on treatment for the morning shift, aged over 18, able to perform reading and interpretation. They excluded patients who remained with mental disability, hospitalized during the collection period and discharged from treatment improvement or death. Thus, the sample consisted of 62 patients.

The collection process was conducted by two members who composed the collection team. Initially, it was made aware of the purpose and distributed the booklet, requesting reading. At this time, emphasis was asked words and incomprehensible phrases, replaced them with terms that promote better understanding. After reading the full participant answered a questionnaire for the evaluation of educational technology.

The questionnaire was developed and tested among the target audience shifts in the research would be carried out, participated in this phase 12 patients. The results of the pilot test were rejected and only served to test the comprehension ability of the public to put propositions. At this time we were also tested forms of data collection.

It was defined as time to collect the period prior to dialysis the lower level of dispersion of the participants. In the period of intra-dialysis, the patient manifests some rations that impair the concentration in the reading process. However, the time after the dialysis the patient is keen to return to his home, and it is unfeasible to carry out the quality collection. Some items have changed, for terms of understanding the lay people on health issues. Thus, the questionnaire had items that contained personal identifying information (name, age, time that performs dialysis), the second portion adapted the instrument SAM,⁷ that brings the evaluative items on the booklet (objectives, organization, writing style, appearance and motivation of educational material). This instrument was adapted and built in the form of scale to obtain a more objective measure of the analysis of each of the items. This is established when measuring the intensity of opinions in the most objective way possible.

The items were drawn up according to their importance and relationship with the object under study, while the proposals were presented to the subjects in question blocks, and organized as measuring tools, how to scale type Likert with four response levels as

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follows: 1. Fully appropriate; 2. Suitable; 3. Partially appropriate; 4. Inadequate.

For the validation of the booklet strategies there were used studies recommendations, which considers valid a particular item when it obtains the classification entirely adequate for at least half plus one of the number of patients and when other do not consider entirely appropriate. The item is also considered validated when patients considers partially adequate or inadequate, but presents suggestions for improvement and these have been implemented.

The data contained in the questionnaires completed by the patients and the suggested observations and obeyed were compiled in tables. To characterize the suggestions and the speeches of the participants, it was decided to identify participants male and female B of A. From the exhaustive reading and identification of similarity between the lines, it was decided to characterize them in the following units that represent, without, however, classify them; forming a consensus units converging on the collective opinion: food, forms of treatment, fistula and needs.

The data were entered and organized using Microsoft Office Excel 2010 program. The data were grouped and analyzed statistically, in which the results were expressed from percentages in tables and illustrative graphics.

This research followed the precepts of Resolution 466/12 of the National Health

Council, dealt with research involving humans. This project was approved by the Ethics Committee of the Federal University of Piauí, with protocol N 0422.0.045.000-11.

RESULTS

Regarding the characteristics of the study participants 69.4% were male, of which, 33.9% had never attended school and 46.8% had less than five years of study, standard deviation of two, making it difficult to read the material printed. There was a predominance of treatment time of two years, with an average of ± 5 years.

Most patients believe that the booklet serves the purpose of informing patients, in which 46 classified it as fully adequate and 16 as appropriate. According to the participants the booklet served to clarify and inform what they do not understand and which were often explained with a difficult language to be understood (Figure 1).

When asked if the booklet helps to raise awareness about the adaptation process, only one disagreed. According to the participant "awareness will head each, will not be a textbook that will help them" (A6).

Item	TA	A	PA
Attends the objectives	46	16	-
Aware about the treatment adherence	44	17	1
It is adequate to attend chronic renal patients	46	16	-
The pages or sectors are organized	47	15	-
The illustrations are simple	49	13	-
The illustrations serve to fulfill the text	52	10	-
The illustrations are expressive and sufficient	36	26	-

Figure 1: Evaluation of participants attending the booklet, Picos-PI, 2014.

TA: Totally adequate; A: Adequate; PA: Partially adequate.

Regarding the general organization, structure, presentation strategy, consistency and formatting, the booklet was considered valid, since there were 286 fully adequate judgments and 147 adequate concerning these items (Figure 1). Only one of the patients

rated the title size and content on topics such as partially appropriate, claiming that "people with low vision could have difficulty when reading, because of the size of the letter" (B42).

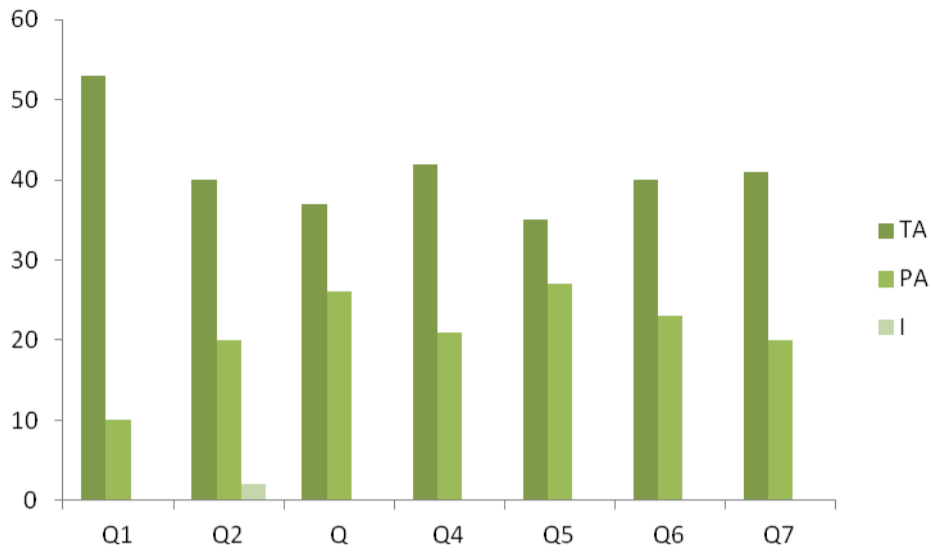


Figure 2. Evaluation of participants regarding the general organization, presentation strategy, formatting and coherence, Picos-PI, 2014.

TA: Totally Adequate; A: Adequate; PA: Partially Adequate

Q1 - The cover can be considered attractive. Indicates the content of the material.

Q2 - The size of the title and the content in the topics are appropriate.

Q3 - The topics have string.

Q4- There is coherence between the information on the cover, back cover, contents, acknowledgments and/or presentation.

Q5 - The material (paper, printing) is appropriate.

Q6 - The number of pages is appropriate.

Q7 - The terms portray important key aspects.

About linguistic characteristics, understanding and writing style there were obtained 190 judgments as entirely appropriate and 167 adequate. About the style of writing corresponding to the level of knowledge, it is important to note that eight

participants considered it partially appropriate, because say some words used in the booklet made the understanding of difficult reading. Concluding, there is the need to adapt to the regional language, taking into account the local culture.

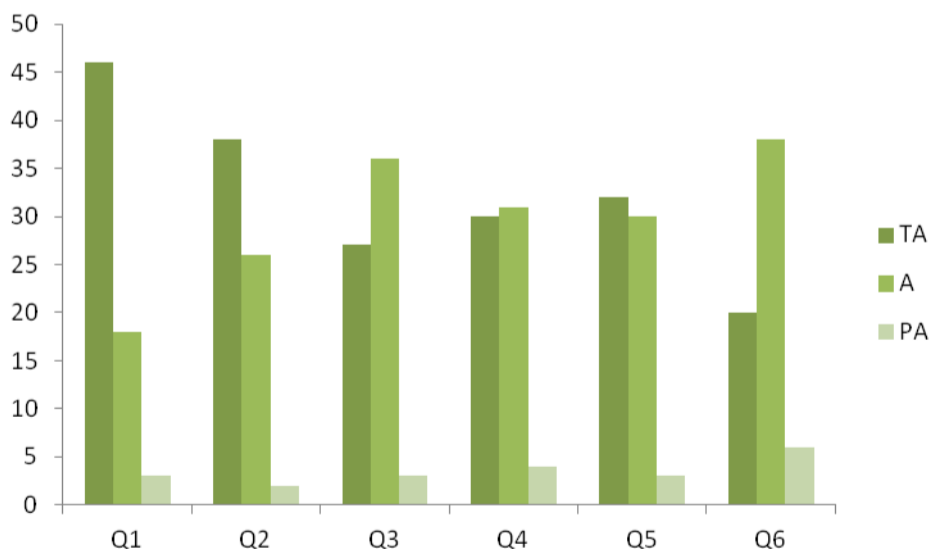


Figure 3. Evaluation of the participants regarding the linguistic feature, understanding and writing style, Picos-PI, 2014.

TA: Totally Adequate; A: Adequate; PA: Partially Adequate

Q1 - It is possible to understand everything in the booklets

Q2 - Is the text interesting? Do you think the text stimulates continue reading?

Q3 - The vocabulary is accessible

Q4 - There is association of the theme of each session to the corresponding text

Q5 - The text is clear

Q6 - The writing style corresponds to the level of knowledge, that is, you understand all the information contained.

The booklet was considered valid, because all participants classified it positively with 184 fully adequate trials and 64 trials proper. Regarding the ability of the material to make an impact, motivation and / or interest, ie the relevance of the material, there was consensus among respondents, in which, they considered the material entirely appropriate 256, or appropriate 109.

Regarding the material being appropriate for the age and the culture, five participants believe that the material does not agree; however, 55 agree that address the necessary issues for the patient undergoing dialysis; think the text quite interesting and of much importance for the clarification about their illness.

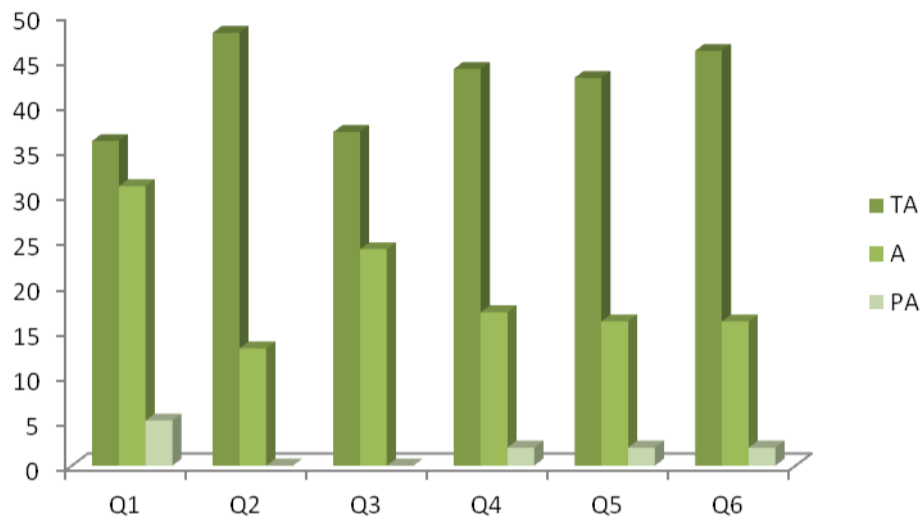


Figure 4. Evaluation of the participants regarding the relevance of the material, Picos-PI, 2013

TA: Fully Adequate; A: Adequate; PA: Partially Adequate

Q1 - The material is appropriate for their age and culture

Q2 - The material is presented in a logical way

Q3 - It stimulates interaction

Q4 - The booklet addresses the issues necessary for the patient undergoing dialysis

Q5 - It promotes change in behavior and attitude

Q6 - The booklet proposes to the patient to acquire knowledge to perform self-care

In the evaluations emerged suggestions and opinions about the material, especially the inclusion of some subjects, and further information about others that were addressed in the booklet. In the perception of the study participants, the material is suitable for the target public and it is characterized as an instrument to be used in education.

Feeding

I would like to talk more about food, to know what I can eat or not (A5, A10, B24, B52, B61).

Talk about food and about the events during the sessions (A14).

I wanted to speak more about the care with food (B27).

Methods of Treatment

I've met many people who made the transplant and died, so I wanted to speak more about transplantation (A12).

I think they should better distinguish one form of treatment of the other (A13)

I wonder what the risks of transplantation (B34).

I really liked the booklet, but I wished it had more texts explaining the disease and treatment (B38).

Fistula

My brother said he has some irons in my fistula and that, for it grows so much. I wonder why it grows so much, since after reading the booklet I realized that it has no iron (A19)

I wanted they explained the reason for the growth of the fistula (B51).

Educational needs

I am diabetic and I wonder why the disease (diabetes) influences the development of kidney disease (B33).

I think that more figures would do who has difficulty on reading, like me, for example, understand better the texts (B37).

The letters could be larger (B42).

I think that professionals have to talk more about the disease (B55).

I want to talk more about our sexuality (B59).

DISCUSSION

In general patients indicate that the booklet served their purpose, facilitating access to knowledge about their disease and reaching their goals of informing patients undergoing dialysis; it raises awareness about the process of adaptation to treatment and can be used by team working with chronic renal patient.

A well-designed educational material should support the promotion of a critical spirit, making certain explicit speeches; instead of playing negative and uncritical representations based on postures and hegemonic discursive systems of society.⁸

Important aware; however, that professionals should consider education and patient reading skills, so that they can effectively use the written material in the educational process because the low level of education found in the sample can hinder the understanding of the recommended guidelines, which can further compromise the health of patients under treatment.⁹

It is important to emphasize the need to pass a message easy to understand, so that the information transmitted is properly captured, in order to avoid misinterpretations.¹⁰ The use, for example, of a few terms as the production of erythrocytes, erythropoietin, glomerulonephritis appeared as a barrier to learning.

It was identified thus need to reformulate the booklet to adjust it to low educational level of the target audience, whose approach can be directed to accessible language, facilitating understanding and cooperation in treatment; encouraging thus the process of coping with the changes brought about by disease and treatment.

Regarding the appearance, the manual received from all participants a satisfactory evaluation, in which, according to their judgment, the characteristics and quality of the contributed illustrations for viewing and perception of the messages contained in the booklet.

It corroborates that the illustrations call more secure attention and provide great detail in the educational material, complementing the text purpose. We chose figures that represent every detail and discussed in the text, exemplifies and brings the reader the information to be seized, in which the memory is enhanced to associate a fact the corresponding images.

Regarding the suggestions made by the participants, the main surveys were about power, forms of treatment and especially about the transplant, fistula and some classroom education needs.

In respect of the forms of treatment, we tried to highlight basic information and emphasize the treatment used in the study clinic that is hemodialysis. After research, it was realized that the participants were unaware of or did not understand the information provided on other forms of treatment for CKD, motivating them to inquire about other forms of treatment presented in the booklet.

Kidney transplantation is considered the most complete possible replacement of renal function. It presents the major advantage of improved quality of life, since renal transplantation ensures greater freedom in daily routine of transplant patients. It is preferred for patients with end stage renal disease, since it substantially increases the survival of the patient and it is of cost reduction, compared with a dialysis life.¹¹

Another issue concerns the aesthetic deformity of fistula site, and may be presented after the anastomosis between the artery and vein, a large expansion of the venous path (aneurysm) that can generate an aesthetic discomfort. This dilation occurs after the creation of the fistula, the vein wall which becomes stronger and often it increases in size. One can feel the pulse of the same or joy in his path (vibratory sensation of blood flow through the vein), but most of the time, does not represent a problem for the use of the fistula.¹²

The professional nurse plays an important role in the care of the chronic renal patient with regard to sexuality, because knowledge of this patient is essential with regard to the appropriate guidelines for better coping with chronic conditions and limitations that it can trigger.¹³

Although, maintain fearfully observed the need for patients to discuss more about this topic, it is emphasized that the educational booklet was prepared, in order to inform the patient about the factors related to the disease and its treatment. Believed to be necessary integrated strategies, ie, classroom educational activities; the use of materials for individual consultation is to be printed online.

CONCLUSION

The educational booklet aimed to guide and to encourage patients to adapt positively to the new lifestyle in which they are

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subjected during treatment. The material will serve as a guide to clarify questions, and an aid to decision-making, noting that the booklet does not replace dialogue and nurse-patient educational activities will serve as a tool to facilitate these actions.

About the evaluation process of the booklet, respondents considered appropriate with regard to items related to the objectives, structure, presentation and relevance of the material.

Therefore, the booklet was considered appropriate within the scientific standards of validity. It is argued; however, that no knowledge is static, if necessary, therefore, periodic reviews of educational materials developed based on scientific innovations and new demands of knowledge presented by patients undergoing hemodialysis.

As study limitation, it highlights the small sample size, given the limitations of the study group. Justified by long-term and complex treatment, very participant could not contribute in the days of the search, having to attend the service at various times. In view of the difficulty of access to participants or due to cognitive limits that compromised the judgment of the technology and the dynamics of the service.

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