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CARE MANUAL FOR DIABETIC PEOPLE WITH DIABETIC FOOT: CONSTRUCTION BY SCOPING STUDY

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ABSTRACT

Objective: to construct an educational manual for people with diabetes mellitus and diabetic foot.

Method: a scoping study, approved by a Research Ethics Committee, and performed in a teaching hospital in the State of Santa Catarina (Brazil). Data collection was performed between September and November 2016, it included a narrative review and consultations of 14 participants - 11 experts (eight nurses, one nursing teacher and two physicians) and three diabetic people and their companions about the contents of the educational manual. The Delphi technique was used in the consultation with the experts, and 70% or more total agreement was established for the permanence of contents in the manual. An evaluation form was used with the diabetic people and their companions, containing a Likert scale for the content evaluation and open questions asking for their opinion about the manual.

Results: the existing literature and consultation with the participants supported the preparation for the manual content. The manual was constructed from the consultation of literature and with the participants, and was reviewed by the *experts*. In the first round of consultation with the experts, eight out of the 21 constructed contents did not reach 70% agreement. The percentages ranged from 45% to 90%. In the second round, all content was considered relevant. Diabetic people considered the manual to be adequate and easy to understand.

Conclusion: the method made the construction of the manual possible which resulted in a nursing technology for use in health education in the care of people with diabetic patients with diabetic foot.

DESCRIPTORS: Self-care. Diabetes mellitus. Diabetic foot. Manuals. Nursing.

MANUAL DE CUIDADOS ÀS PESSOAS COM DIABETES E PÉ DIABÉTICO: CONSTRUÇÃO POR SCOPING STUDY

RESUMO

Objetivo: construir um manual educativo para pessoas com diabetes *mellitus* com pé diabético.

Método: *scoping study*, aprovado por Comitê de Ética em Pesquisa, realizado em um hospital escola do Estado de Santa Catarina (Brasil). A coleta de dados, foi realizada entre setembro e novembro de 2016, incluiu revisão narrativa e consulta a 14 participantes - 11 *experts* (oito enfermeiros, um professor de enfermagem e dois médicos) e três pessoas com diabetes e seus acompanhantes sobre os conteúdos do manual educativo. Utilizou-se a técnica Delphi, na consulta com os *experts*, e estabeleceu-se a necessidade de 70%, ou mais, de concordância total para permanência dos conteúdos no manual. Com as pessoas com diabetes e acompanhantes aplicou-se formulário avaliativo, contendo escala Likert para avaliação dos conteúdos e pergunta aberta questionando opinião sobre o manual.

Resultados: a literatura existente e a consulta aos participantes subsidiou a elaboração dos conteúdos do manual. A partir da consulta na literatura e com os participantes, foi construído o manual, que foi revisado pelos *experts*. Na primeira rodada de consulta com *experts*, dos 21 conteúdos construídos, a partir do estudo de revisão, oito não atingiram 70% de concordância. Os percentuais oscilaram entre 45% e 90%. Na segunda rodada, todos os conteúdos foram considerados pertinentes. As pessoas com diabetes consideraram que o manual estava adequado e de fácil compreensão.

Conclusão: o método possibilitou a construção do manual que resultou em um produto de enfermagem para uso na educação em saúde, para o cuidado da pessoa com diabetes com pé diabético.

DESCRIPTORIOS: Autocuidado. Diabetes mellitus. Pé diabético. Manuais. Enfermagem.

MANUAL DE CUIDADOS A LAS PERSONAS CON DIABETES Y PIE DIABÉTICO: CONSTRUCCIÓN POR SCOPING STUDY

RESUMEN

Objetivo: construir un manual educativo para personas con diabetes mellitus con pie diabético.

Método: *scoping study*, aprobado por el Comité de Ética en Investigación, realizado en un hospital escuela del Estado de Santa Catarina (Brasil). La recolección de datos, fue realizada entre septiembre y noviembre de 2016, incluyó revisión narrativa y consulta a 14 interesados (11 enfermeros, un profesor de enfermería y dos médicos) y tres personas con diabetes y sus acompañantes sobre los contenidos del manual educativo. Se utilizó la técnica Delphi, en la consulta con los expertos, y se estableció la necesidad del 70%, o más, de concordancia total para permanencia de los contenidos en el manual. Con las personas con diabetes y acompañantes se aplicó formulario evaluativo, conteniendo escala Likert para evaluación de los contenidos y pregunta abierta cuestionando opinión sobre el manual.

Resultados: la literatura existente y la consulta a los interesados subsidió la elaboración de los contenidos del manual. A partir de la consulta en la literatura y con los interesados, fue construido el manual, que fue revisado por los expertos. En la primera ronda de consulta con expertos, de los 21 contenidos construidos, a partir del estudio de revisión, ocho no alcanzaron el 70% de concordancia. Los porcentuales oscilaron entre el 45% y el 90%. En la segunda ronda, todos los contenidos se consideraron pertinentes. Las personas con diabetes consideraron que el manual era adecuado y de fácil comprensión.

Conclusión: el método posibilitó la construcción del manual que resultó en un producto de enfermería para uso en la educación en salud, para el cuidado de la persona con diabetes con pie diabético.

DESCRIPTORES: Autocuidado. Diabetes mellitus. Pie diabético. Manuales. Enfermería.

INTRODUCTION

The scoping study is a method that allows the creation of protocols and other technologies which guide the practice. This type of study is based on current literature (procedure manuals, scientific research, protocols and other publications related to the research theme), professional or poorly understood phenomenon, to quickly map key concepts and key sources and evidences, synthesize and analyze research results and materials produced outside the field of research, but recognized, scientifically, or in clinical experience, and for this purpose, aims to understand the scope in which the investigated phenomenon occurs.¹ Thus, in addition to a literature review, it considers those interested in the subject as an essential part of the research. In this study, the interested parties were health professionals, diabetic people with diabetic foot, as well as their companions.

Non-communicable chronic diseases are considered a worldwide epidemic, threatening the quality of life, increasing cases of death and the physical disabilities of the population. Diabetes mellitus (DM) is a very common chronic disease, being an important and growing public health problem.

The most frequent types of diabetes are called type 1 DM, which usually present abruptly mainly in children and adolescents, and type 2 DM, which, with insidious onset and mild symptoms, is manifested mainly in adults with history of overweight and family history of type 2 DM.² Type 2 DM corresponds to approximately 90% of the cases. Among the chronic complications of DM, ulcerative lesions in the lower limbs, caused by peripheral neuropathy and vasculopathy, are highlighted.³

Diabetic foot is one of the most frequent complications, causing reulcerations, loss of mobility and decreased quality of life, lower limb amputations, corresponding to 40% to 60% of non-traumatic amputations.⁴ The diabetic foot is related to the duration of diabetes, age, delay in initiating appropriate treatment and low adherence to treatment.⁵

Health professionals need to be competent to act in educational practice regarding DM, seeking the knowledge, skills and attitudes necessary to perform the necessary educational actions.⁶

Health education is fundamental in order to reduce the greater damages and complications related to diabetic foot.⁷ Education focused on self-care is the way to prevent and treat complications of chronic diseases, as it facilitates the involvement of the person in their treatment, producing greater adherence to the therapeutic scheme, minimizing complications and disabilities associated with chronic problems.⁸

In addition, there is a need for the creation of approaches and methodologies that empower people and their families through the access to information and opportunities that enable them to make choices for a healthier life, which includes self-care education.⁷

The nursing team observes the need to improve the quality of self-care guidelines in relation to the care of diabetic people who have some type of complication in their lower limbs which can help them to improve the quality of life and minimize the damage to their health.

The hospital involved in this study is a reference for vascular complications, and there is an

expressive number of diabetic people who present with complications in the lower limbs, who are hospitalized and attended at the outpatient unit. Also, in nursing care, it is identified that diabetic people show little knowledge about the disease and its complications, and poor understanding of the guidelines for self-care and also show resistance to treatment adherence.

Considering the presented context, it was questioned: what information and general care should be included in an educational manual for diabetic people and diabetic foot, who were treated at a teaching hospital in Southern Brazil?

The development of this study was justified because of the relevance of an educational and informative material for the self-care choices to be adopted by diabetic people with diabetic foot. The use of educational manuals in nursing care makes it possible to clarify doubts, enhancing guidelines and care provided by nursing professionals and health staff. It is possible to reduce the aggravations caused by the knowledge deficit and to improve the quality of life.

Educational manuals facilitate and standardize health care guidelines, they help individuals to understand the health-disease process more clearly, and guide the way to health recovery.⁹ Therefore, the objective of this study is to construct an educational manual for people with diabetes mellitus with diabetic foot.

METHOD

For the development of this study a scoping study was performed in a teaching hospital in Southern Brazil. This type of research, complementing the one already stated in the introduction of this article, allows the revision of a scope, and has been described as a process of mapping the existing literature, or as a process of searching for scientific evidence. The scoping study differs from systematic and integrative reviews for several reasons: the research questions are broad; inclusions and exclusions may occur throughout the investigation, quality (level of evidence) is not the initial priority; data collection may or may not involve data extraction; and the synthesis of the data is more qualitative than quantitative.¹⁰

The method includes six steps: 1) identification of the research question; 2) identification of the relevant studies; 3) selection of the study, with the establishment of inclusion / exclusion criteria, based on familiarity with the literature; 4) data mapping,

a step that includes the selection, mapping and classification of information according to key issues and themes; 5) grouping, synthesis and reporting of results - descriptive and numerical summary of the data and a thematic analysis; 6) consultation with experts and stakeholders (optional step) - an additional parallel step involving key participants (people interested or experts in the subject) to inform and validate study results. Those consulted may indicate new search references and provide insight into what the literature does not highlight. Consultation with experts and participants makes it possible to evaluate and improve the content¹⁰ and, in this case, include an evaluation of the appearance of the educational manual.

For the development of this study the six steps recommended by the scoping study method were performed. They are shown below:¹⁰

1st Stage: definition of the research question - what information and principal care should an educational manual include for people with diabetes and diabetic foot?

2nd Stage: identification of relevant studies - a narrative review of the literature was performed for this stage. The search for the publications for inclusion in the study was guided by the descriptors diabetes, diabetes mellitus, diabetic foot, manual and occurred in July 2016, in the databases Scientific Electronic Library Online (SciELO), Virtual Health Library (VHL) and Google (Google was included, considering that the government manuals and the Brazilian Society of Diabetes were found using this search method and these publications were considered essential for this study).

3rd Stage: selection of studies - the selection of publications was defined by the comprehensiveness and proximity of the content to the health education of diabetic people. It was not limited to publications indexed in scientific journals for this reason. The selection was made in pairs and the criteria adopted for choosing the studies covered the themes that were initially chosen as priorities for the construction of the manual: physiopathology of DM, self-care of the diabetic, diabetic foot, foot care, foot hygiene, complications of diabetes, post-surgical care, post-discharge care, attractiveness, objectivity, and comprehensibility. Theoretical references from the Ministry of Health were included in this study,^{2,11-12} as well as the Brazilian Society of Diabetes,¹³ and seven self-care guidance books for people with diabetes and diabetic foot in different Brazilian institutions,¹⁴⁻²⁰ and a clinical nursing book and three scientific papers.^{3,22-23}

The scoping study favored the search of the contents, since it can be guided by studies from systematized reviews, which deal with more specific issues, but also, as in the case in question, be guided to search for broader, open questions. The choice of the revised material does not specifically focus on the scientific quality of the research but on the importance of the texts included in the study for the purpose of the research. The synthesis is fundamentally qualitative and, rarely, quantitative, making it possible to include non-indexed and / or suggested texts by the consultants.²⁴

4th stage: data extraction - after the selection of the publications included in the study, exhaustive reading was performed of the texts and selection of contents for composition of the educational manual for people with diabetes and diabetic foot. The experience of the authors of this study in the care of diabetic people helped in the development of this stage. The extracted data were archived in a file suitable for this purpose.

5th stage: data summarization and results report - in this stage, the data extracted in the 4th stage were submitted to the transformation of language, that is, from literary language to language accessible to the target audience. Also, in this step, the illustrations were selected (the images inserted in the manual resulted from searches performed using Google Image and from photographs provided by a volunteer). The criteria for selecting the images included figures that were easy to understand, didactic, attractive and, preferably, self-explanatory.

For the presentation in the manual, each image was numbered and the list of images was elaborated to make its sources available. The images included in the manual included: attention gifs, pancreatic anatomy images, diabetic complications, illustrative photos of the guidelines, didactic schemes for insulin action, right and wrong gifs, and types of shoe.

In the 5th step, the layout was defined. The attractiveness and easy handling by the reader was prioritized once again. The size (148 mm x 210 mm) and the format of the manual (rectangular), number of pages (31), type and size of the letter used in the construction of the texts (Bookman Old Style, size 20) titles (Bookman Old Style, bold, size 28) and illustrations (56 images) were defined. With the choice of illustrations, care was taken to set up dialogues between the exposed contents and the actions themselves, which involve self-care practices, as well as the relationship between organic functions and hormones. Thus, the aim was to use a playful way of transmitting as many orientations as possible

without tiring the reader. Printing in Portable Document Format (PDF) was done to attract the reader's attention (experts, patients and family), thus being able to manipulate the material and physically and structurally evaluating the educational manual during the consultation.

6th stage: consultation with participants - seven nursing assistants (working in the surgical hospitalization unit), a teacher/nurse with 3rd level education, an outpatient nurse (who worked in the outpatient clinic to assist diabetic people), a professor with a PhD, a vascular surgeon, a medical vascular surgeon (acting in the surgical hospitalization unit), three patients (and their companions), with a total of 14 people.

In order to be included in the study, the experts needed to have a year or more of experience in the care of diabetic people with diabetic foot and to be active in the scenario institution of that study. Diabetic people had to be hospitalized at the surgical clinic during the data collection period and have diabetic foot (the selection of diabetic people was performed by random choice) and the companions had to be present at the time of data collection. It is recorded that the consultation with diabetic people was performed to verify the intelligibility of the content.

In order to consult the contents, the Delphi technique was applied, a tool that provides the judgment of the information in a systematized way, in the search of the consensus of experts in a given topic for validation, in this case, specialists in DM.²⁵ In this technique the contents were evaluated in the consultations rounds in which, the experts gave their evaluation on the contents and suggestions for improvement, inclusion or exclusion of the contents in each round.

In the Delphi technique it is common to give up the participation of experts, which may require new inclusion of study participants. Thus, it was defined that new inclusions in the study would only be performed if the dropouts were higher than 30%. This fact did not occur in this study. A form was created via Google Drive in order for the consultation with the experts, which is a tool available online by Microsoft that allows files to be shared with more people through their emails. In this way, invited participants were able to edit the shared document online and contribute how they want. Thus, the electronic address was exclusively created for this study.

A Likert scale was inserted for each content presented, containing the following alternatives: I totally agree, partially agree and disagree, fol-

lowed by space for suggestions and comments for the expert's contribution. In addition to the form submitted online, each expert received a printed version of the manual.

In this form, questions were also included to characterize the profile of the experts, such as: age, professional training, year of graduation, higher degree, year of completion and professional acting position. Data collection with the experts occurred between September 15th and November 30th, 2016.

The consultation with diabetic people and their companions involved the delivery of the educational manual in printed format, along with an evaluation form containing the Likert scale for the evaluation of content and appearance, as well as a space for suggestions and changes. The form contained closed questions that evaluated the opinion of diabetic people regarding: understanding the contents of the manual, images and format of the manual; if the language adopted was clear and easy to read and if they would like to add or remove some of the contents. In addition, three descriptive questions were included that evaluated the perception of diabetics and family members regarding the manual, the need for content changes, the difficulty of understanding the information and the new learning achieved.

Data collection with diabetic people and their companions was performed between October 20th and November 10th, 2016. These participants were identified by the code P1, P2 and P3. The experts were identified by the code E1 through E11.

For the analysis of the obtained answers in the consultations with the experts, the percentage of total agreement was calculated, the percentage of 70% was considered as the minimum value for permanence of the content in the manual. Minor percentages needed to be revised or eliminated, i.e. contents that received partial agreement or disagreement in the experts' assessment. In general, the minimum validation percentages fluctuated between 50 and 90%, and between 70 and 80% approval were the most used.²⁶ The content with less than 70% approval was rewritten with the experts' suggestions and sent back to new consultation round, until the desired percentage was reached. The results obtained in the data collection with the patients and companions were grouped by similarity. The discussion of the findings was supported by current scientific literature and related to the theme.

It is recorded that this study followed Resolution N. 466/2012 and was approved by the Research Ethics Committee, under Certificate of Presentation for Ethical Consideration N.56293216.0.0000.0121.

RESULTS

The revision process

The literature review, selection and adaptation of the contents for the composition of the educational manual resulted in the following summarization - defined contents for the composition of the educational manual: definition of diabetes; insulin action in diabetics and non-diabetics; main types of diabetes; complications caused by diabetes; signs and symptoms of diabetic foot; foot care: daily observation, hygiene and hydration, nail care and calluses; guidelines on proper shoes; possible treatments; discharge guidelines for hospitalized diabetic people; guidelines on the importance of injury prevention; importance of quitting smoking; locations and *sites* to find out more about diabetes and diabetic foot. The title defined for the manual was: Diabetes and foot diabetic: foot care manual.

Expert consultation process

The ages of the experts ranged from 27 to 71 years (mean age of 42 years of age). The training time ranged from 5 to 47 years (mean of 17 years). Among the experts, six were specialists (55%), three masters (27%) and two doctors (18%). The time of experience in the care of people with DM with diabetic foot among the experts was 1 to 20 years.

In the second and final round of consultation, three experts did not return the evaluation form within the 30 day deadline. It is recorded that all the experts were informed about the second round of consultation, and that the form was sent twice, with no response. Thus, the experts' withdrawal reached the percentage of 27%.

In the first round of the consultation of the 21 contents, eight did not reach the percentage of 70%, the percentages oscillated between 45% and 90%. In the second round, all content had 70% or greater agreement, ranging from 72% to 100%.

According to the experts' recommendations, seven contents of the manual required the extension of the theoretical and didactic approach, adding or totally altering the contents and the number of pages for its presentation. At that moment, the literature was turned to in order to complement the review, according to the indications received in the consultation round. Table 1 presents the contents of the booklet and the percentages of total agreement in the first and second round of consultation. In the second round, some content was still recommended for inclusion

in the booklet. They were included, however, it was not deemed necessary to conduct a third round of consultation, as the recommendations were easy to understand and accept.

Table 1 - Percentage of agreement of the experts by content and consultation rounds. Florianópolis, SC, Brazil, 2016

Content	1st Round %	2nd Round %
Manual cover	72	86
Back cover	81	Approved 1 st consultation
Summary	45	100
Introduction	72	Expanded content
Concept of diabetes	81	Approved 1 st consultation
Understanding diabetes better	63	Expanded content
What is insulin?*	-	100
Insulin action in diabetic and non-diabetic patients	54	†
Insulin action in the non-diabetic person - content and illustration*	-	72
Insulin action in diabetics - content and illustration*	-	100
Main types of diabetes	81	Approved 1 st consultation
Complications caused by diabetes	63	86
Signs and symptoms of foot problems	90	Approved 1 st consultation
Self-examination of the feet	90	Approved 1 st consultation
Foot hygiene	72	100
Nail and sock care	90	Approved 1 st consultation
Care of calluses and other problems	72	100
Orientation regarding footwear	63	100
Treatment of diabetic foot	63	100
Orientation after hospital discharge	81	Extended content
Importance of smoking cessation	54	86
Places and sites to seek information	72	100
Last Page	90	Approved 1 st consultation

*Content included in the manual after the 1st round of consultation; † Content deleted, replaced and/or extended in the 2nd round.

Table 2 highlights the main suggestions for content adjustments by the experts during the first round of the form, and were accepted and modified in the educational material.

Table 2 - Summary of the main suggestions of the experts in the first round of consultation. Florianópolis, SC, Brazil, 2016

Conteúdo	The expert's suggestions
Front cover	<ul style="list-style-type: none"> • Replace the term "manual for self-care" with "foot care manual". The term self-care may generate doubts;
Concepts of diabetes	<ul style="list-style-type: none"> • Specify the pancreas as an organ of the human body; • Include schematic diagram on diabetes;
Insulin action	<ul style="list-style-type: none"> • Improve the presentation of the mechanism of insulin action; • Include guidance on the importance of oral antidiabetic medications ; • Replace the image of the real cell, for a playful and simplified figure;
Complications caused by diabetes	<ul style="list-style-type: none"> • Add heart problems; • Replace the term "Renal Problems" with "Problems with the kidneys";
Signs and symptoms of foot problems	<ul style="list-style-type: none"> • Increase the number of photos of feet with lesions/trophic changes;
Foot hygiene	<ul style="list-style-type: none"> • Add the orientation: dry the feet with a soft cloth; • Add the orientation: test the temperature of the water with the elbow and do not pass cream between the toes;
Care with calluses and other problems	<ul style="list-style-type: none"> • Add two final warnings: "in case of any problem with your feet, immediately seek the help of a health professional" and "seek a professional nurse to do the foot exam periodically";
Orientations regarding footwear	<ul style="list-style-type: none"> • Make a point about not wearing between the toe flip-flops; • Include a page containing questions about the use of footwear, for example, buying footwear in the size and shape of your foot, putting illustrations on it, talking about the height of the heels, stitching, observing hyperemia points that indicate pressure, use of <i>velcro</i> if edema is present, etc. • On another page talk about sensitivity and care;
Treatment of diabetic foot	<ul style="list-style-type: none"> • Include explanation about debridement; • Reduce the use of technical terms; • Include that diabetes control is also critical to prevent progression of diabetic foot;
Importance of smoking cessation	<ul style="list-style-type: none"> • Emphasize that stopping smoking requires a change in living habits and that group help and therapy is critical to success; • Address this content more generally;
Places and sites to seek information	<ul style="list-style-type: none"> • Change the term Health Center to Health Clinic or Health Unit of your neighborhood, as this is the term that the user usually uses

In the second consultation round there were some suggestions regarding changes in the content, such as the need to improve the intelligibility of the cartoons used in the action of insulin and the need for the inclusion of a picture of Charcot's foot.

The first version of the educational material was composed of 23 pages, including the cover, acknowledgements and references. After the first round of consultation, the manual was expanded

to a total of 30 pages and following the changes of the second and last query round. The manual was finalized with a total of 31 pages, including cover, back cover, contents, acknowledgements, page for notes, list of figures and references.

As for the diabetic people included in this study, they were 43, 55 and 69 years old and had been diagnosed with the disease for more than five years. Two participants had undergone previous

amputations in the lower limbs, and the third had undergone their first transmetatarsal amputation.

One of the diabetic participants used oral antidiabetic medication and the other two used NPH and regular insulin. As for schooling, one of the participants had completed High School, one completed Elementary School and one did not complete Elementary School. Two participants had companions who provided care and actively influenced their treatment. One participant lived alone and performed care independently. None of them practiced physical activity, taking into account that after previous amputations the difficulty for this practice increased. And only one followed the diet prescribed by the nutritionist.

In general the participants reported that the manual was adequate and easy to understand and did not require changes. One participant was ambivalent regarding the figures and contents of the manual, commenting on the annoyance that the real images caused him, but in the same question, he reported the importance of these images for knowledge regarding the pathology: [...] *I prefer the drawings, the images of those ugly make me uncomfortable [...] (P1); the actual photos make people understand what can happen to their feet when they are not taken care of (P1).*

Regarding the answers obtained in the descriptive questions of diabetic people, the results are presented in table 3.

Table 3 - Responses to the descriptive questions on the opinion of diabetic participants about the educational manual. Florianópolis, SC, Brazil, 2016

Questions	P1 Answer	P2 Answer	P3 Answer
As a person with DM and family member, did you like the manual? Would they make any changes?	<i>I liked the manual. We do not suggest any change</i>	<i>I liked it. It doesn't need to be changed.</i>	<i>Great and useful.</i>
While reading the manual, did you have difficulty understanding any of the information?	<i>No, I know a lots, but I forget to follow them</i>	<i>No, they are easy.</i>	<i>No.</i>
After reading and evaluating the manual, did you learn something new? Describe.	<i>I already knew many things, because I have been treating for some time, sometimes forgetting to take care of myself, then I go back to the hospital. But the information is always good, I think this work will be very important</i>	<i>I thought I just needed to take care of diabetes, I did not know all the bad things about it. Now I know that I have to take care of my feet, my food and my health to avoid complications. It was very useful.</i>	<i>I attend a podologist, I understand the importance of taking good care of my feet better now, I thought it was just treating the fungus. I understood about the correct footwear, even more now that I'm missing part of my foot[...]</i>

In view of the positive consent of the diabetic people, no other changes were inserted in the manual, which was titled: Diabetes and foot diabetic: foot care manual.

DISCUSSION

Considering that DM is a chronic disease, with a constant increase in cases and complex treatment, it is necessary to emphasize the need of educational materials and tools to assist in the qualification of individuals and families, since, through access of information and expansion of the knowledge, it is possible for each individual to make their choices for a healthier life.⁶

In order to cope with DM and diabetic foot, the lack of information or little understanding about

the pathology leads to carelessness in self-care.⁶ By thinking that a chronic disease does not lead to greater health complications, diabetic people only follow the drug treatment, often not worrying about subsequent problems.

The doubts of diabetic people about the diseases are often raised in health education activities. Thus, creative and attractive technologies disseminate information, promoting the achievement of the goals of diabetic people and, consequently, optimize the work of nursing.²⁷⁻²⁸ Thus, the importance of nursing products in health education for diabetic people, a chronic disease that requires continued care in the control of the disease and its complications, is highlighted. This study prioritized this fact.

The idea of constructing the educational manual came from the needs of diabetic people and

diabetic foot. The elaboration followed the scientific criteria recommended by the scoping study, a type of research with the potential to gather knowledge capable of supporting safer practices that allow the empowerment of diabetic people to make choices and make better self-care decisions, as it includes the contribution of professionals with experience in the care of diabetic people and of the people who face living with DM in the construction of educational contents.

Even if the diabetic people receives verbal information during their attendance, a complete understanding of the didactic and theoretical material is essential for the diabetic people as an information strategy which can help in the reduction of possible confusion regarding the instructions provided by the health professional in verbal form.²⁹

The knowledge deficit, memory difficulties and vulnerability of diabetic people are factors that justify the development of educational technologies, and which are able to provide information that improves the knowledge and coping of the diabetic person.²⁵⁻²⁷ Thus, the educational technologies dynamize health education activities, making them relevant and necessary.

Studies suggest that textual elaboration must be adequate to the educational and cultural level of diabetic people in order to be benefited by the created educational technology.³⁰⁻³¹ The scoping study method favored the fulfillment of this recommendation.

The booklets¹⁴⁻²⁰ on diabetes and foot care contributed to keeping the language clear and playful, reaching the goal of the manual. The association of indexed texts in scientific journals, produced by government agencies and organized societies and by institutions specialized in the care of diabetic people allowed by the scoping study, was another methodological step that made the difference in this construction.

The use of the Delphi technique allowed the organization of the consultation of experts and the preparation of the manual in an effective, reliable and practical way, as it is an accessible method that requires few expenses and allows a group of specialists to participate in the study, even though geographically distant. This technique has been widely used in health research in the areas of technology; education; training and information and nursing in clinical practice.³¹

With regard to nursing work, health education geared to the needs of the population and the use of didactic means that favors the interest and understanding of the population to the subject should be prioritized.³² Thus, the experts' suggestions for

construction and explanation of the contents presented in the manual enriched the final product, prioritizing health education and adherence to DM treatment. The use of a clear and objective language, easy to understand for the individuals who would use the material, allowed it to be used effectively.³³

This study started from the problematization of nursing care and that, when the nursing professional assumes the central role in their relations with the diabetic patient, their glycemic levels reduce significantly, by following healthy behaviors, through nursing orientations and consultations. These positive results are due to the fact that there is an effective communication process between nurses and patients, as well as the nature of their education and their role.³⁴ The construction and use of an educational manual, a nursing technology, portrays the nurse's commitment to the quality of the care provided and the quality of life of the person cared for.

Finally, it is seen that the use of educational technologies in nursing care allows diabetic people to become aware of the importance of lifestyle change and self-care in order to prevent, delay and/or control the complications resulting from the disease. Nursing and health professionals should support the development or strengthening of self-care skills, act as facilitators and motivators for behavioral changes required in adhering to treatment, in an individualized, creative and innovative educational process.³⁵ It is understood that results obtained by this study will leverage health education and DM control by those diabetic people treated in the study scenario.

The limited number of diabetic participants and the non-inclusion of experts in DM acting in other scenarios are considered limitations of the study.

CONCLUSION

It is considered that the educational manual on "Diabetes and diabetic foot: foot care manual" can contribute to the expansion of the knowledge of diabetic people and help in the guidance given by nurses to diabetic with foot diabetics.

The theoretical revision enabled the authors to organize the work plans and to elaborate the first version of the educational manual, as well as helping the implementation of the suggested changes after the round of consultation rounds.

The construction and consultation with the experts, patients and family members were carried out in a rigorous way, satisfying the amplitude of

DM and diabetic foot content in an accessible, attractive and easy-to-understand language for the target audience.

The manual is relevant and presents itself as a new teaching material in health education activities. However, the impact of educational material on posture and adherence to the treatment of people with DM cannot be measured here and may be the objective of further studies.

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