



ACTION RESEARCH: SELF-CARE PRACTICES OF PEOPLE WITH DIABETIC FOOT PESQUISA AÇÃO: PRÁTICAS DE AUTOCUIDADO DAS PESSOAS COM PÉ DIABÉTICO INVESTIGACIÓN ACCIÓN: PRÁCTICAS DE AUTOCUIDADO DE LAS PERSONAS CON PIE DIABÉTICO

Luciana Catunda Gomes de Menezes¹, Nády dos Santos Moura², Luara Abreu Vieira³, Ariane Alves Barros⁴,
Eline Saraiva Silveira Araújo⁵, Maria Vilani Cavalcante Guedes⁶

ABSTRACT

Objective: to know the self-care practices of people with diabetic foot. **Method:** a qualitative study, action research, with 40 patients from a primary health care unit. Data was produced through a semi-structured interview. For the analysis, Content Analysis was used. **Results:** from the speeches, two categories emerged: << Self-care practices for foot hygiene and << Self-care practices for the prevention of traumatic injuries >>. Patients know that foot care is necessary, but self-care is not performed correctly. The difficulties were based on not knowing the proper footwear, the correct cut of the nails and the importance of the examination of the feet. **Conclusion:** the purpose of the knowledge produced was not only to provide information and exchange experiences, but, above all, to make patients aware of the risks of foot complications. **Descriptors:** Nursing; Nursing Care; Diabetic Foot.

RESUMO

Objetivo: conhecer as práticas de autocuidado das pessoas com pé diabético. **Método:** Estudo qualitativo, pesquisa ação, com 40 pacientes de uma unidade de Atenção Primária à Saúde. Os dados foram produzidos por meio de entrevista semiestruturada. Para a análise, utilizou-se a Análise de Conteúdo. **Resultados:** dos discursos, emergiram duas categorias <<Práticas de autocuidado para a higiene dos pés e <<Práticas de autocuidado para a prevenção de lesões traumáticas>>. Os pacientes sabem que cuidados com os pés são necessários, porém, o autocuidado não é realizado corretamente. As dificuldades baseavam-se no desconhecimento do calçado adequado, no corte correto das unhas e na importância do exame dos pés. **Conclusão:** a finalidade do conhecimento produzido não foi somente prestar informações e trocar experiências, mas, sobretudo, sensibilizar os pacientes sobre os riscos de complicações nos pés. **Descritores:** Enfermagem; Cuidados de Enfermagem; Pé Diabético.

RESUMEN

Objetivo: conocer las prácticas de autocuidado de las personas con pie diabético. **Método:** estudio cualitativo, investigación acción, con 40 pacientes de una unidad de Atención Primaria a la Salud. Los datos fueron producidos por medio de entrevista semiestruturada. Para el análisis, se utilizó el Análisis de Contenido. **Resultados:** de los discursos, surgieron dos categorías << Prácticas de autocuidado para la higiene de los pies y << Prácticas de autocuidado para la prevención de lesiones traumáticas >>. Los pacientes saben que el cuidado con los pies es necesario, pero, el autocuidado no se realiza correctamente. Las dificultades se basaban: en el desconocimiento del calzado adecuado, en el corte correcto de las uñas y en la importancia del examen de los pies. **Conclusión:** la finalidad del conocimiento producido no fue solamente proporcionar informaciones e intercambiar experiencias, pero sobre todo sensibilizar a los pacientes sobre los riesgos de complicaciones en los pies. **Descriptores:** Enfermería; Atención de Enfermería; Pie Diabético.

¹Nurse, PhD student, Postgraduate Program in Clinical Care in Nursing and Health/PPCCLNH, State University of Ceará/SUCE, Scholarship holder of Coordination of Improvement of Higher Education Personnel (CAPES). Fortaleza, Brazil. E-mail: lucianacatundagomes@yahoo.com.br; ²Nurse, Master's Student, Post-graduate Program in Clinical Care in Nursing and Health/PPCCLNH, State University of Ceará /SUCE. Fortaleza (CE), Scholarship holder of the Cearense Foundation for Scientific and Technological Development/CFSTD, Fortaleza (CE), Brazil. E-mail: nadvasantosm@yahoo.com.br; ³Nurse, Master's Student, Post-graduate Program in Clinical Care in Nursing and Health/PPCCLNH, State University of Ceará/SUCE. Fortaleza, Brazil. E-mail: luaraabreu@hotmail.com; ⁴Nurse, PhD student, Post-graduate Program in Clinical Care in Nursing and Health/PPCCLNH, State University of Ceará /SUCE. Fortaleza, Brazil. E-mail: arianealvesbarros@hotmail.com; ⁵Nurse, Master, Post-graduate Program in Clinical Care in Nursing and Health/PPCCLNH, State University of Ceará /SUCE. Fortaleza, Brazil. E-mail: elinesaraiva@superig.com.br; ⁶Nurse, PhD in Nursing, Professor of the Post-graduate Program in Clinical Care in Nursing and Health, State University of Ceará/UECE. Fortaleza, Brazil. E-mail: vilani.guedes@globocom

INTRODUCTION

The foot at risk is one of the serious and mutilating microvascular complications of people with diabetes. It causes loss of sensitivity, deformities and repetitive surface trauma, cracks in the skin or damage to the feet, often not perceived by the patient. Above all, when not diagnosed early, the disease causes, therefore, the diabetic foot.¹

Through knowledge of the causes of diabetic foot, high risk patients can be identified early, avoiding amputations. According to studies, up to 50% of amputations can be avoided with proper health education, plus the stimulation of self-care and interdisciplinary care.²

In general, approach to the foot of the person with DM still poses an obstacle for health professionals, since this evaluation is often being performed inadequately due to a lack of physical examination, lack of equipment and materials, and therapeutic education for professionals and patients. When properly executed, it will help to alleviate the suffering and complications resulting from the disease, reducing expenses with specialized assistance.

A study shows that, of the patients admitted to the emergency room for admission to DM, only 10% to 19% reported having their feet assessed in basic care after removal of socks and shoes.³

In the context of multiprofessional care, the nurse's approach is emphasized in this study. Faced with the attributions of the nurse in the Family Health Strategy, it is possible to affirm that this professional is qualified to identify the foot at risk, early. In this perspective, the Nursing Consultation (NC) has been a face-to-face meeting with the person with diabetes in primary health care, establishing a link, promoting the exchange of information and allowing patients to express their feelings about their health situation, thus constituting an important strategy for the promotion of self-care and for the prevention of complications.⁴

In the NC, foot inspection and skin assessment and sensitivity should be performed by simple and low-cost tests. This, however, is not observed in practice. To avoid the appearance of injuries, it is also necessary to provide guidance on simple foot care, such as: inspection of shoes, proper nail cutting, hygiene and drying of the fingers, hydration, among others.

In view of the above, it is questioned: what are the self-care practices of people with diabetic foot?

In view of this reality, this research can generate subsidies for clinical Nursing care, considering the importance of approaching patients' perspective on foot care, as well as providing nurses and other health professionals with indications for a better clinical evaluation of the patient and contribute to the improvement of their quality of life.

The study aims to know the self-care practices of people with diabetic foot.

METHOD

Action Research (AR) carried out in a Primary Health Care unit of the city of Fortaleza-Ceará-Brazil, in the period between March and August 2013.

AR enables the researcher to effectively act on the reality studied, through new contributions that can bring improvements and solutions to the organization in which both researchers and participants are involved, in a cooperative or participatory way⁵. The main objective of AR is to investigate, within a process of interaction between researchers and the interested population, to generate possible solutions to the detected problems and not be confused as consulting.⁵

The twelve steps of the Action Research were applied: exploratory (carried out the survey of the problems); theme (diabetic foot care); problem placement (interview with diabetic people); place of theory (articulation with Self-Care Theory); hypotheses (lack of care can lead to amputation); seminars (meetings with patients); delimitation of the PHCU field of action, data collection (individual interview); learning (individual educational activities); formal and informal learning (communication between scientific and popular knowledge); action plan (planning individual self-care actions) and dissemination of results (dissemination of results to participants and the scientific community).

Patients who met the following inclusion criteria were included in the study: a medical diagnosis of Type 2 Diabetes Mellitus (DM) for at least three years (since the diabetic foot develops in the chronic phase of the disease and in a silent way); be over 18 years of age; be registered and regularly monitored in said unit. Those who had any difficulties that prevented communication and responses to the instrument were excluded.

The sample of this study was obtained by the method of sampling for convenience, being composed by 40 people with DM

enrolled in the program of hypertension and diabetes in said unit.

In order to obtain the data, the semi-structured interview was used, in the Primary Health Care Unit, recorded, which made it possible to identify the needs and problems, with two parts: the first one consisted of sociodemographic and clinical variables (gender, age, time diagnosis, drug treatment, capillary glycemia, knowledge about diabetic foot, comorbidities and risk factors) and the second part included variables related to the facilities and difficulties in the implementation of foot care (washing, drying, moisturizing, nail cutting, type of shoes and socks, examination of the feet and care of the wounds).

The study was developed in three stages. In the first, a survey of the needs for self-care guidelines was carried out. The second stage occurred three months after the initial meeting and the educational intervention was applied, through guidelines for self-care. It focused mainly on foot care, using leaflets, anatomical models of feet with and without lesions, and a serial album for people with DM. Its theoretical content was constituted of orientations for the self-care, with a view to the prevention of complications in the feet.

The third stage occurred six months after the first meeting and the educational intervention was carried out in the second moment, when the foot care was reinforced. All meetings, held individually, lasted thirty minutes, in each session.

To guarantee the anonymity of the interviewees, the patients were coded with the letter "P" of patients, followed by Arabic numeral, according to the order of the interviews. This research was approved by the Ethics and Research Committee of the State University of Ceará (Process nº 201.279). All participants signed the Free and Informed Consent Term (FICT) prior to the start of data collection, respecting the ethical precepts of research with human beings based on Resolution 466/12 of the National Health Council.⁶

For the analysis of the results, the technique of Content Analysis was used, proposed by Bardin.⁷ Based on the reading of the content expressed by the subjects in the interviews, it was possible to define the analysis units or recording units (phrases, themes or dialogue) that were categorized by similarity and, according to the semantic criteria, divided into thematic categories, as explained above.

From this analytical process, two thematic categories emerged: 1. Self-care practices for

foot hygiene and 2. Self-care practices for the prevention of traumatic injuries.

Thus, a comprehensive analysis of the results was carried out, whose interpretation was based on the updated literature on diabetic foot.

RESULTS

◆ Sociodemographic and clinical characterization

The study included 40 patients, with a predominantly female sample, of 25 women (62.5%). The age range varied from 32 to 90 years, with a mean of 58.6 ± 11.7 years. The study population also came from the capital/metropolitan region, with 20 (50.0%) participants, and from the interior, also with 20 (50.0%). Regarding the educational level, 13 (32.5%) had completed elementary education.

Marital status was a contributing factor for self-care, where 23 (57.5%) of the participants were married and reported receiving encouragement for the self-care of their partners. The number of children interviewed ranged from two to seven, with a mean of 3.5 ± 1.7 children. Regarding the family income, based on the minimum wage at the time of data collection, of R\$ 678.00, 27 (67.5%) people perceived one and three minimum wages, ranging from less than a minimum wage to more than four salaries, with an average of 2.0 ± 0.6 . Regarding the occupation, as observed, a considerable part of the sample was made up of retirees / pensioners, with 11 (27.5%) participants.

During the data analysis phase, two categories related to the study themes were identified, which emerged from the subjects' speeches. The first, called "self-care practices for foot hygiene" and the second entitled "self-care practices for the prevention of traumatic injuries".

◆ Category I. Self-care practices for foot hygiene

This category included 55 Registry Units (RU), in which the patients described the care provided with the hygiene and cutting of the toenails, according to the following transcripts:

I wash my feet always, I use soap. (P7)
Hydrate with oil, wash the foot with soap and water. (P26)
I cut my nails, hydrate and wash my feet 3x / day, morning and night. (P37)
I do a good wash [in the foot] and use exfoliation and hydration. (P15)

Like the skin, the person's nail with DM is thick and deformed, requiring proper care. From the following testimonies, the concern

of patients can be seen in the search for alternative treatments, such as the use of brushes, nail hygiene, and pumice stone for the treatment of calluses. These treatments may come as an aid in conventional therapy:

I wash with a well-washed brush and dry well. (P32)

I wash [the foot] with soap and step the brush and use pumice stone. (P39)

[...] I wash [my feet], I use soap, brush my nails, use pumice stone and sand them.

Simple care, such as washing and drying the feet, especially in the interdigital spaces, can prevent mycoses, lesions and ulcers. In spite of the above mentioned safe practices, some patients demonstrated an inadequate hygiene practice and cut, as shown in the following statements:

After I had an ugly wound, I now wash [the foot] with aseptic 3x / day. (P27)

I put [the foot] in the water. (P36)

I wash only [the foot] with soap and do not dry between the toes. (P8)

I brush my fingernails and cut my nails well into the corners. (P3).

♦ Category 2. Self-care practices for the prevention of traumatic injuries

While changing habits is seen as a difficulty for some group members, others look for different ways of perceiving the same challenge. Thus, 12 RUs were identified in which the patients highlighted the concern of foot care as an alternative for the prevention of injuries. This is exemplified in the following reports:

The care I have [with the foot] is not to walk barefoot. (P30)

I do not walk barefoot because I'm afraid to get hurt, I take care of my foot. (P11)

I am careful [not to touch] and not get a wound and not lose my leg. (P12)

I take care [of the foot] not to hit things, I do not scratch when some mosquito stings me. (P11)

In the following speeches, the knowledge of some patients about adequate care as a strategy to avoid ulcers is identified:

Do not cut [the nails], only use nail file [nails]. (P6)

Wash the nails with soap several times and cut with clippers. (P14)

I am very careful [with my feet], even cutting my fingernails in a podiatrist. (P38)

DISCUSSION

Regarding the sociodemographic and clinical characterization of the sample, the findings are similar to those of other studies conducted in Brazil on the prevalence of *Diabetes Mellitus*.⁸⁻¹⁰

♦ Category 1. Self-care practices for foot hygiene

Regarding Category 1, the importance of hygiene care for the prevention of injuries is emphasized.

The feet are the basis for the support of the body, balance and movements, regardless of the activity to be performed, whether it is running, practicing a physical exercise and even walking. They should be permanent targets of care, as lack of care can be reflected in the health of the whole body. However, the feet are not always given due importance. This may seem insignificant, but the foot care habit is necessary, and in the case of the person with diabetes, it is critical to avoid the complications of the disease.

Patients with poor metabolic control are more likely to suffer complications in the skin and attachments, caused by endothelial and microcirculatory changes, which favor the onset of injuries.⁸ Moreover, the care in keeping feet clean, even with some restrictions, is time, interest, age, among others, that interfere with the condition of DM, does not prevent the study participants from referring to foot hygiene as a self-care action. Foot hygiene involves washing behaviors, drying between the toes, cutting nails and using moisturizing lotion.

Patients with DM account for about 95% of their care. Faced with this situation, actions directed to foot care are the best strategy to delay or reduce the complications resulting from the disease, such as diabetic foot.⁸

There are innumerable losses caused by diabetic foot and they have consequences, often mutilating. Amputations, for example, entail physical sequelae, with limitations that affect the autonomy and independence of the individual. In addition, the intangible costs are immeasurable, such as psychological sequelae, which can lead to depressive feelings, low self-esteem, among others.¹¹ However, prevention strategies, patient and team education, multidisciplinary treatment of ulcers of the foot, with intensive follow-up, can reduce amputation rates from 49 to 85%.¹

This interaction, associated to the commitment of participation to health promotion, is an important premise of the action research method, which aims to construct knowledge in a collective and participatory way, seeking solutions to a problem that requires intervention and change.

Simple care, such as washing and drying the feet, especially in interdigital spaces, can prevent mycoses, lesions and ulcers. It is also

necessary to hydrate the legs and feet, to avoid dryness of the skin.

As the reports show, patients performed foot care, ie, washing, drying and moisturizing. For the *International Working Group on the Diabetic Foot*¹, the expected recommendations for preventing diabetic foot are based on the following instructions: wash your feet daily with water and mild soap; dry them well with a soft towel, preferably between the toes, and moisturize with urea-based cream in the plantar, dorsal and heel regions, except between the interdigital spaces, preferably three times a day.

Thus, it was considered that the care related to correct nail cleaning and nail cutting is fundamental for the prevention and early diagnosis of the lesions. However, it is considered that Nursing orientation is one of the strategies that can stimulate and develop the potential of patients and their families, as well as equipping them to assume, as subjects, actions aimed at coping with these problems. However, attending to this need is a basic requirement of the nurse-patient interaction, as well as the family, which plays a fundamental role in relation to the chronicity of the DM.

Regular hydration of the feet, with the use of moisturizers and oils, is a habit reported by the sample. It is considered a necessary care for the protection of the feet against dryness thus avoiding cracks or cracks. These occur by the reduction or suppression of sweat in the feet, leaving them drier, due to the involvement of the sensory, motor and autonomic fibers.¹²

Actors reinforce the use of moisturizing creams on the feet based on lanolin or vegetable oils and moisturizers associated with urea (5%, 10%), avoiding application between the fingers, to reduce hyperkeratosis.¹³

Some care is given to the nails: cut in the square, straight and horizontal format, using clippers; filing the ends, not leaving them against the skin; avoid cutting the corners and do not remove ingrown nails. In the case of ingrown nails, it is proposed to seek specialized treatment to unclog them properly.¹

The study concluded that rounded toenail cutting contributes to the appearance of fingertip injuries as a result of entanglement of the nails caused by sharp objects.¹² In addition, infections in the lesions delay healing and may lead to a consequent amputation.

Another important point related to the cutting of the nails in a diabetic individual is

the loss of protective sensation in the feet in the face of peripheral neuropathy, since patients may not feel the tip of the scissors during the act of cutting nails.¹⁴

However, faced with the difficulties of people with DM, Nursing can offer educational support for foot care, according to individual needs and the risk of ulceration and amputation. When the patient experiences difficulties in effecting the correct nail cutting, it should be performed by trained family members or by specialized professionals.

In this study, action research functioned as a methodology that aimed to stimulate individual expression in decision-making.

Diabetic foot hygiene should be performed daily with the use of neutral soap, preferably liquid.¹ However, neutral pH significantly decreases the defense against microbial proliferation and may promote greater transepidermal water loss by altering epidermal barrier function.¹⁵

On the other hand, what is recommended in the literature is the use of soaps with a slightly acidic pH, because they do not interfere so intensely in cutaneous microflora and have a lower deleterious potential, since they are close to the physiological pH, which varies between 4.2 and 5.9, depending on the area of the body measured.¹⁶ However, some types of manufactured soaps vary depending on the properties of their components. As observed, most patients used soap or soap with neutral pH. Of these, the most cited was Asseptol, whose pH is equivalent to 7.8. Therefore, it is considered a neutral soap.¹⁷ Probably, the use of this product was due to the ease in the acquisition and its low cost.

The water for foot hygiene should be warm at 35° C and it is important to test the temperature on the hands, forearms, elbows or bath thermometer before placing the foot to avoid burns.¹⁸

As for the use of pumice or paper sandpaper, for the removal of callus, authors emphasize the importance of using it superficially and smoothly and that is done after bathing, with feet still wet or after putting them in warm water.¹⁹ But the authors cited contraindicate the use of chemicals, sharp objects and metal scrap for the removal of callosities, because of the great danger that a local inflammation may represent.

For nail and nail bed care, such actions should be performed by all subjects involved in the care process, leaving them the right to decide on behavior change.¹³

The participatory character is a fundamental condition for action research: it demands that the subjects involved perceive the need for change and want to play an active role in it.⁵

As noted, participants are fearful of future complications. However, while fear is a negative feeling, it can stimulate self-care initiatives.

Regarding the importance of the use of appropriate footwear in the study population, many reported that they wore common and open shoes, therefore, they presented a deficit of self-care and, consequently, they are more prone to the risk of injuries. Even if the sandals used are not appropriate, people with DM should always be advised to walk with footwear on, not to wear tight shoes and to protect them from possible extrinsic injuries. Therefore, there is a need for intervention to minimize or overcome these deficits. This study confirms that 85% of the serious injuries of people with hospitalized DM are commonly associated with minor trauma caused by sharp objects while walking barefoot, improper footwear, common dermatoses, incorrect manipulations of the feet and nails by unauthorized people.¹³ These complications could be minimized through intervention for self-care.

It is important to emphasize that in the case of neuropathy, even in the absence of visible deformities, footwear must include custom-made insoles, with the purpose of reducing and amortizing the effect of repetitive stress and accommodating deformities.¹

Regarding therapeutic footwear, when biomechanical alterations have already been detected due to the presence of callosities or deformities in the feet or finger amputation, these should be tailor-made in length, width and height, with extra depth that allows the adaptation of removable insoles, soft leather with no internal seams, rigid buttress, internally padded and adjustable closure (velcro or shoelace), with heels of up to three centimeters and fully covering the toes and heel.¹³

In another study, the authors showed that the low adherence to the use of therapeutic shoes is due to the aesthetic aspect, since the patients considered them "ugly and bad."²⁰

The same authors also recommend the relevance of health professionals in the guidelines on choosing suitable footwear and providing important information on foot protection to reduce the risk of ulceration, allowing the recognition of inappropriate footwear. In these situations, the individual

needs to acquire knowledge and skills in order to incorporate them into their care system.

It should also be considered that the high cost of these shoes can be one of the obstacles for their use, noting that 67% of people with DM in this research have incomes of only one to three minimum wages.

Still as a proposal, a requirement for Nursing help is given because, at this moment, the people with diabetes present themselves as limited in the provision of self-care, since he is not aware of the meaning of the use of adequate footwear. In assisting the person with DM and standing at risk, working on the practice of self-care enables one to get out of the misinformation and make it active in the transformation process.

Several studies have found that footwear is the main cause of diabetic foot injury and many are precursors to amputation.¹³ Therefore, the fundamental goal of assisting people with diabetes is to avoid this outcome by recognizing risk situations and immediate interventions. Also, as it turns out, much of the information provided by health professionals to this group is not strictly observed, especially regarding the issue of the use of adequate footwear, due to the difficulties arising in the economic factor.

In this perspective, the use of action research, articulated to Orem's Theory, is undoubtedly relevant to the person with diabetes and diabetic foot, because it can lead to a specific result, providing commitment, taking initiatives and assuming responsibilities in the development of their care towards improving the quality of life, health and well-being.

♦ Category 2. Self-care practices for the prevention of traumatic injuries

In the second category, the care taken by patients to avoid injuries that often lead to incapacities or death can be highlighted.

Prevalence tends to increase with age. Among the complications, people with diabetes may present significant impairment in functional mobility. The DM is related to the decrease in functional mobility, from the beginning of its complications, mainly diabetic neuropathy.²¹ Thus, ND contributes to atrophy and muscle weakness, bone deformities, imbalance of foot mechanics, deficit of balance, difficulty in walking and risk of falls.¹³

In addition to ND, the higher prevalence of falls among people with DM is triggered by several factors, including: visual impairment; use of large quantities of medicines; dizziness; auditory disorder; hypoglycemia due to misuse of medication and insulin.

Other authors add that elderly patients with T2DM may manifest cerebral changes capable of causing cognitive decline, which may also affect their functional ability.²¹

In these patients, most falls occur indoors or nearby, usually during everyday activities such as walking, changing positions, or going to the bathroom during the night.²¹

Losses caused by functional mobility appear to be more prevalent among older diabetics. However, regardless of age, the person with DM should have knowledge about the decrease in functional mobility and, hence, prevention strategies should be drawn. Once again, self-care actions are emphasized that include preventive education for both patients and family members, warning about signs of physical disabilities and guiding care towards prevention of accidents, injuries and even amputations.

Apart from all the above-mentioned foot care, patients who do not adhere to treatment are 50 times more likely to have a foot ulcer and 20 times more likely to have them amputated than those who correctly follow the guidelines.¹⁴

Foot ulcers stand out as the common cause of pre-amputation and are responsible for a high percentage of morbidity and hospitalization among people with diabetes¹, with a mean hospitalization time of 59% higher than in diabetics without ulcers.²²

After the onset of the ulcer, even in superficial injuries, the time and the way in which they are treated are fundamental, in order to avoid infection and consequently amputation. Authors reinforce the need for special care for these lesions, such as: wound cleaning, use of indicated coverage for the type of tissue present and debridement.¹⁴

Even aware of such care, the foot injuries of people with diabetes are characterized as self-care deficits, as many do not have the skills to perform proper care of ulcers.

According to evidence in Category 2, people with DMs who were researched, cut the nails wrongly, thus denoting a lack of knowledge and self-care and, consequently, are more vulnerable to the risk of developing foot ulcers.

Nursing consultations, for these patients, can help the individual to be trained for self-care, through guidelines essential to good glycemic control, and to develop simple strategies that promote the prevention of diabetic foot.

It should be noted that improper nail clippings may be associated with ignorance

about the instrument used for such a procedure.

It is understood, then, that this study adopted the action-research methodology, due to the need for changes in this social context.

As mentioned, rounded nail cutting is not recommended because, when the corners of the nails are removed frequently, a deep, intact portion of the nail is left in the distal nail groove, which ends up growing inside the skin, causing lesions and pain. The correct cut should be done with pliers, should have good lighting, comfortable position, good vision. You should stabilize the toe with your hand and cut with the other and, on any edges, use nail files.¹

The study shows that when the patient is not able or presents difficulties to perform the correct nail cutting, it must be done by trained relatives or by specialized professionals.¹¹ In this context, the need to educate the family members to perform this function.

The AR allows a greater interaction between the researcher and the researcher, a relationship that is already established in the practice of Nursing, and this is done always including the patient together with his family and the community, to constantly provide the positive transformation of this reality.

CONCLUSION

This study aimed to identify the self-care practices of people with diabetic foot, as well as difficulties and/or facilities in the implementation of preventive measures, considering the knowledge acquired by them in routine consultations, in contact with the team and in their daily experiences.

Regarding the knowledge of people with DM about foot care, the data showed an expressive degree of knowledge deficit and self-care about the proper footwear, correct shape of the nail cut, appropriate instrument for the cut and importance of examining the feet.

This deficit is probably related to the few opportunities for reported guidelines. Participants stated that the guidelines are important. Therefore, improving the knowledge of the person with DM on foot care is essential to minimize adverse actions resulting from ineffective self-care.

In this AR, the purpose of the knowledge produced was not only to provide information, but, above all, to sensitize patients about the risks of complications arising from DM. The study involved patients with their self-care, encouraged them to

modify the way they take care of themselves, leading them to take responsibility for their health and quality of life.

REFERENCES

1. International Working Group on the Diabetic Foot. International Consensus on the Diabetic Foot. Amsterdam: International Working Group on the Diabetic Foot; 2015.
2. Papanas N, Maltezos E. Polyherbal formulation as a therapeutic option to improve wound healing in the diabetic foot. Indian J Med Res [Internet]. 2011 Aug [cited 2014 Feb 14];134(2):146-47. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181013/?report=reader>
3. Rocha RM, Zanetti ML, Santos MA. Comportamento e conhecimento: fundamentos para prevenção do pé diabético. Acta Paul Enferm [Internet]. 2009 [cited 2016 Feb 16];22(1): 17-23. Available from: <http://www.scielo.br/pdf/ape/v22n1/a03v22n1.pdf>
4. Nascimento TCO, Navarine TCRR, Anízio BKF, Anízio BF, Costa MML, Santos IBC. Conhecimento de pacientes com diabetes mellitus sobre lesões nas extremidades. Rev enferm UFPE on line [Internet]. 2014 July [cited 2016 Feb 16]; 8(7):1888-97. Available from: <http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/download/4391/9483>
5. Thiollent M. Metodologia da pesquisa. 18th ed. São Paulo: Cortez; 2011.
6. Ministério da Saúde (BR), Conselho Nacional de Saúde. Resolução nº 466 do Conselho Nacional de Saúde de 12 de dezembro de 2012 (BR). Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos [Internet]. Brasília: Ministério da Saúde; 2012 [cited 2015 Dec 14]. Available from: http://conselho.saude.gov.br/ultimas_noticias/2013/06_jun_14_publicada_resolucao.html
7. Bardin L. Análise de conteúdo. Lisboa: Edições 70; 2010.
8. Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes [Internet]. São Paulo: AC Farmacêutica; 2015 [cited 2016 Feb 12]. Available from: <http://www.diabetes.org.br/images/2015/area-restrita/diretrizes-sbd-2015.pdf>
9. Conselho Nacional de Secretários de Saúde (BR). Planificação da Atenção primária à Saúde nos Estados [Internet]. Brasília: CONASS; 2011 [cited 2016 Feb 15]. Available from: http://www.conass.org.br/conassdocumenta/cd_23.pdf
10. Lyra R, Silva RS, Montenegro Jr. RM, Matos MVC, Cézar NJB, Silva LM. Prevalência de diabetes mellito e fatores associados em população urbana adulta de baixa escolaridade e renda do sertão nordestino brasileiro. Arq Bras Endocrinol Metab [Internet]. 2010 Aug [cited 2015 Jan 15];54(6):560-66. Available from: <http://www.scielo.br/pdf/abem/v54n6/09.pdf>
11. Bortoletto MSS, Viude DF, Haddad MCL, Karino ME. Caracterização dos portadores de diabetes submetidos à amputação de membros inferiores em Londrina, Estado do Paraná. Acta Sci [Internet]. 2010 [cited 2016 Jan 16];32(2):205-313. Available from: <http://periodicos.uem.br/ojs/index.php/ActaSciHealthSci/article/view/7754/7754>
12. Amaral AS, Tavares DMS. Cuidados con los pies: conocimiento entre personas con diabetes mellitus. Rev eletrônica enferm [Internet]. 2009 [cited 2016 Mar 16];11(4):801-10. Available from: https://www.fen.ufg.br/fen_revista/v11/n4/pdf/v11n4a05.pdf
13. Pedrosa HC, Vilar L, Boulton AJM. Neuropatias e pé diabético. São Paulo: AC Farmacêutica; 2014.
14. Caiafa JS, Castro AA, Fidelis C, Santos VP, Silva ES, Sitrângulo Jr. CJ. Atenção integral ao portador de pé diabético. J Vasc Bras [Internet]. 2011 [cited 2016 Jan 16];10(4 Suppl 2):1-32. Available from: <http://www.scielo.br/pdf/jvb/v10n4s2/a01v10n4s2.pdf>
15. Fernandes JD, Machado MCR, Oliveira ZNP. Prevenção e cuidados com a pele da criança e do recém-nascido. An Bras Dermatol [Internet]. 2011 Jan/Feb [cited 2016 Jan 16]; 86(1); 102-10. Available from: <http://www.scielo.br/pdf/abd/v86n1/v86n1a14.pdf>
16. Urasaki MBM. Cuidados com a pele adotados por gestantes assistidas em serviços públicos de saúde. Acta Paul Enferm [Internet]. 2011 [cited 2015 Nov 15];24(1);67-73. Available from: <http://www.scielo.br/pdf/ape/v24n1/v24n1a10.pdf>
17. Mercadante R, Assumpção L. Massa base para sabonetes: fabricando sabonetes sólidos [Internet]. Curitiba: UNIOESTE; 2009 [cited 2015 Nov 15];7(2);1-21. Available from: <http://projetos.unioeste.br/projetos/gerart/apostilas/apostila8.pdf>
18. Overhaussen PE. Úlceras do pé diabético: causas, diagnósticos e tratamento. New York: Lusociência; 2012.
19. Carvalho G, Barreto AF, Carlos D. Pé diabético e assistência de profissionais de

saúde: revisão. Ensaios Cienc, Cienc Biol Agrar Saúde [Internet]. 2011 [cited 2015 Nov 15];15(3);197-208. Available from: <http://www.redalyc.org/pdf/260/26021120016.pdf>

20. Anselmo MI, Nery M, Parisi MCR. The effectiveness of educational practice in diabetic foot: a view from Brazil. Diabetol metab syndr [Internet]. 2010 June [cited 2016 Jan 16];2(45);1-4. Available from: <http://www.dmsjournal.com/content/2/1/45>

21. Cordeiro RC, Jardim JR, Perracini MR, Ramos LR. Factors associated with functional balance and mobility among elderly diabetic outpatients. Arq Bras Endocrinol Metab [Internet]. 2009 [cited 2015 Oct 15];53(7);834-43. Available from: <http://www.scielo.br/pdf/abem/v53n7/07.pdf>

22. Ochoa-Vigo K, Torquato MTCG, Silvério IAS, Queiroz FA, De-La-Torre-Ugarte-Guanilo MC, Pace AE. Caracterização de pessoas com diabetes em unidades de atenção primária e secundária em relação a fatores desencadeantes do pé diabético. Acta Paul Enferm [Internet]. 2006 July/Sept [cited 2016 Jan 16];19(3);296-303. Available from: <http://www.scielo.br/pdf/ape/v19n3/a07v19n3.pdf>

Submission: 2016/06/07

Accepted: 2017/08/10

Publishing: 2017/09/15

Corresponding Address

Luciana Catunda Gomes de Menezes
Rua Valdetário Mota, 1514, Ap. 701
Bairro Papicu
CEP: 60175-740 – Fortaleza (CE), Brazil