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Original Article

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Education in health for people with diabetes mellitus in the hospital

Educação em saúde à pessoa com diabetes mellitus no hospital

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Abstract
OBJECTIVE: To describe the nurses' actions in favor of education in health for people hospitalized with diabetes mellitus. MATERIALS AND METHODS: This is a qualitative research study, carried out in a teaching hospital in southern Brazil. The intentional sample consisted of 15 nurses who worked in the sectors of medical clinic, surgical clinic and urgency and emergency networks. The data were produced using semi-structured interviews from September to November 2019 and subsequently managed by means of the Ethnograph v6 program; after that, they were submitted to content analysis. RESULTS: Five categories were identified, namely: Guiding and (re)adapting: avoiding complications; Education for foot and skin care; Guidelines on the use of drugs; Food care; and Education in health with family members. Nurses claim that education in health inside the hospital plays a key role and that their educational process has included some actions that covered both people with diabetes mellitus and their family members. CONCLUSIONS: In the hospital, the nurse can promote actions such as the implementation of groups for people with diabetes, creating an enhanced place in order to share guidelines and life experiences and to discuss the way in which they take care of their health.
Keywords: Non-communicable diseases. Adult. Education in health. Qualitative research.

Resumo
OBJETIVO: Descrever as ações de enfermeiros para a educação em saúde da pessoa com diabetes mellitus hospitalizada. MATERIAIS E MÉTODOS: Pesquisa qualitativa, realizada em hospital de ensino no Sul do Brasil. Participaram 15 enfermeiros por amostragem intencional, que atuavam nos setores de clínica médica, clínica cirúrgica e redes de urgência e emergência. Os dados foram produzidos entre setembro e novembro de 2019, por meio de entrevista semiestruturada, gerenciados pelo programa Ethnograph v6 e submetidos à análise de conteúdo. RESULTADOS: Foram construídas cinco categorias, sendo elas: Orientar e se (re)adequar: evitando complicações; Educação para o cuidado com os pés e com a pele; Orientações quanto ao uso dos fármacos; Cuidados com a alimentação e Educação em saúde com os familiares. Os enfermeiros consideram a prática de educação em saúde no hospital como importante e, o processo educativo dos enfermeiros realizado contemplava ações que abrangeram às pessoas com diabetes mellitus e familiares. CONCLUSÕES: O enfermeiro, no hospital, pode impulsionar ações incluindo a implementação de grupos, criando espaço potencializado para compartilhar orientações e experiências de vida de pessoas com diabetes e o modo como cuidam da saúde.
Palavras-chave: Doenças não transmissíveis. Adulto. Educação em saúde. Pesquisa qualitativa.

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Introduction

Diabetes mellitus stands out among chronic non-communicable diseases due to its growing incidence, prevalence and morbidity and mortality, which makes it be considered as an important public health problem in the national and global scenario. It is estimated that today, in the world, 387 million people live with the disease, with an expectation of 471 million for 2035, mainly adults and older adults[1,2,3].

In Brazil, there were 668,111 hospitalizations due to Diabetes Mellitus in the 2015-2019 period[4]. This is a disease responsible for countless complications, including heart disease, neuropathy, nephropathy and eye diseases, generating an economic impact on the health systems for presenting higher hospitalization rates and longer hospital stays[2,3,5]. Given the above, it is necessary to prioritize actions related to health promotion and to the prevention of complications, making education in health fundamental in the context of hospital care[6,7].

Education in health becomes essential and enhances self-care and quality of life in people with diabetes and their family members[6,8] and, consequently, it reduces the number of complications[6]. Education in health is considered as a "set of practices which contributes to increasing people's autonomy in their care and in the debate with professionals and managers to achieve health care according to their needs"[9,19]. From it, the person learns to take care of their health, which is the result of multiple factors inherent to the health-disease process, based on the knowledge of their reality[10]. It is a fundamental strategy for care, as it facilitates learning and promotes people's knowledge so that they improve their ability to intervene in their lives[11].

Nurses can be considered as educators and education in health, as an intervention strategy inherent to the profession[12]. As members of the multidisciplinary team, in the care of people with diabetes, they play an essential role in health promotion and disease prevention, through the education of people at risk of complications arising from their health condition[5]. They are professionals with competences and skills capable of promoting the individuals' autonomy and empowerment inside the hospital[17,12,13].

However, when consulting the literature, it was evidenced that studies on education in health in hospitals are incipient[17,12] and that there are even fewer studies on education in health for people with diabetes in this scenario[13,14]. When developed in the hospital, education in health represents an emerging trend in Nursing[12]. In this sense, the need for studies developed with this population is evidenced, which can serve as a subsidy for future actions from the perspective of promoting self-care and the quality of hospital care. Given the above, the research question which guided the study was the following: What are the nurses' actions for education in health of hospitalized people with diabetes mellitus? Based on the above, this study aimed at describing the nurses' actions for the education in health of hospitalized people with diabetes mellitus.

Materials and Methods

Study sample and type

A descriptive study with a qualitative approach. The choice of this research approach is justified, as it makes it possible to study the phenomenon in its intensity and for concerning the sociocultural aspects that are expressed through relationships, values, beliefs, symbologies, behaviors, opinions, representations and practices, in addition to understanding aspects of the reality and context. In this sense, qualitative research

answers particular questions about the individuals' experience in its full magnitude, which corresponds to a deeper space of relationships, processes and phenomena[15].

Research design

The study was conducted in hospitalization units for adults from a Teaching Hospital of Rio Grande do Sul, Brazil. The Hospital has 175 beds, and serves 28 municipalities exclusively through the Unified Health System. The choice of such a Hospital is justified by the fact that it has a link with a Diabetes and Hypertension Center, a reference in the care of people with diabetes in the Region, both under the responsibility of a Public University. Data production took place in September and October 2019.

Inclusion and Exclusion Criteria

The study participants were nurses, chosen by means of intentional sampling, based on the following inclusion criteria: being a nurse at the institution for more than six months and having experience in the care of patients with diabetes mellitus. The exclusion criterion was being on leave or on vacation. Of these 15 participants, 13 were female and two were male. Data collection and sample size were subsidized from the information saturation proposal[15]. In this way, as the collected information was repeated, it was removed from the research field and, in parallel, a theoretical scheme to respond to the object under study was elaborated.

Procedures

The semi-structured interview was used as data production technique; and a guide was developed containing open and closed questions, seeking to meet the research objective. The first question was open, "Can you tell me about your experience in caring for people with diabetes during hospitalization?", later followed by others that gradually made it possible to deepen the topic. This instrument contained questions that enabled the professionals to talk about experiences they had with the care of patients with diabetes mellitus, the care measures that were taken, and the actions and guidelines provided during hospitalization. In addition to that, at what time the family participated in the care of this patient during hospitalization and which practicalities and difficulties were experienced by the nurses in caring for these patients.

The interviews were carried out individually, at times previously defined with the participants and in a reserved room of the hospital, as chosen by the participant. These were recorded with a digital recorder, in order to allow for a literal transcription of the audio content, which was performed by the first author of the study.

The data from the interviews were managed by means of the Ethnograph v6 Program in its demo version and submitted to content analysis as proposed by Laurence Bardin, which comprises the stages of pre-analysis, material exploration, treatment of the results and interpretations[16]. In this study, such stages took place as follows: initially, the interviews were transcribed weekly, according to the order in which they were conducted, by the first author, in the Microsoft Word text editor. At the end of this stage, the interviews were skimmed and later indexed in the Ethnograph v6 program. From this, the reading took place in a detailed manner, in order to identify the key points of the participant's discussion, with codes being elaborated. Subsequently, the codes were compared and text fragments selected to identify the themes, which later gave rise to the categories. A total of 24 codes were created and five categories were elaborated from them.

To ensure the participants' anonymity, the first letter for Nurse in Portuguese ("*Enfermeiro*" – E) was used; followed by the order in which the

interviews were conducted, using cardinal numbers (01, 02, 03 ...). Given the above, the participants were named as follows, for example: Nurse, interview 01 - E01.

This research observed Resolution No. 466 of December 2012 of the National Health Council, which sets forth the ethical aspects involving human beings, aiming at guaranteeing the rights and duties of the research participants, the scientific community and the State[17]. Approval was obtained from the Research Ethics Committee of a public University, under CAAE number 19579519.8.0000.5317. In addition to that, the principles set forth in the Ethics Code for Nursing Professionals approved by Resolution 564/2017 were also respected[18]. All the participants signed the Free and Informed Consent Form.

Results

The study participants were 15 nurses, 13 female and two male, aged between 31 and 47 years old. Their time working in the hospital varied from one to four years and their training time, from two to 23 years. In terms of specializations, they correspond to the areas of Intensive Care; Palliative care; Psychosocial Care; Women's, Children's and Adolescents' Health; Mental Health; Public Health; Health of the Older Adult; Oncology; Health Audit; Public Health Administration; and Hospital Administration.

Categories were elaborated from data analysis, namely: Guiding and (re)adapting: avoiding complications; Education for foot and skin care; Guidelines on the use of drugs; Food care; and Education in health with the family members. In the study, the nurses consider the practice of education in health inside the hospital as important, and the nurses' educational process included actions that covered people with diabetes and their family members.

Guiding and (re)adapting: avoiding complications

For the nurses participating in the study, guiding people regarding the signs and symptoms and about what diabetes could cause regarding complications is part of education in health. These guidelines were, for example, about loss of sight and foot injuries due to increased glucose in the body. They also contemplated care with insulin administration. For this, the nurses reported using accessible, clear and easy-to-understand language. They also described that it was necessary to adapt the "vocabulary" to the patient's, since they described that there are sociocultural differences between one patient and another, as evidenced in the reports:

I always try to guide them and make them understand that they have either a reduction in insulin production or non-production of insulin and I try to guide them within their vocabulary, how important it is for them to control so that they don't have other problems. So I try, as best I can, in the simplest possible way, to explain why this happens, what, which precautions they have to take, and what the consequences are of not taking care of this glucose because glucose is something that people don't take very seriously (...). [E02]

And [I advise] be aware of any changes in your body, whether at dawn, when it has any changes. Anyway, there are several questions and guidelines that we give, it will depend a lot on the patients themselves, on their guidance too. [E04]

[...] care with the feet, depending on whether they use insulin or not, diet, sight, many of them complain that they already have diabetic retinopathy function. [E011]

Nurses understand the importance of guiding people with diabetes during hospitalization about possible changes that they may present as a result of diabetes. For this, they use dialog to share information with a view to preventing complications.

Education for foot and skin care

The nurses reported educating the patients regarding foot care. They highlighted the importance for the patients

to watch their feet and identify signs and symptoms, such as decreased sensitivity, circulation, and presence of calluses and/or lesions. They also provided information on cleaning/hygiene and foot care, in addition to reinforcing the importance of protecting them by wearing comfortable socks and shoes during hospitalization, thus preventing falls and injuries. Due to some nurses' previous experience in primary care, this scenario was pointed out as a relevant and prominent space to develop education in health.

The use of proper shoes for walking in the hospital, asking them to wear closed shoes, this is already done as a routine (...). [E05]

I also work in public health and we talked a lot, a lot about foot care, so you come to the hospital unit, you automatically think about their feet so, because of seeing the circulation, seeing the nails, to guide about this, right? [E011]

Always guide them to be very careful that they don't hit their feet, on the beds or chairs when they're going to walk, be careful when taking a bath too, when they go to the bathroom. So these things, be careful with the extremities mainly, because the diabetic patient has a very high risk of getting hurt and not even noticing, because they end up not feeling the extremities, it's usually the thing I do the most, right, kind of guide them as for this care they need to have. [E014]

Regarding the skin, the nurses emphasized guidance regarding the use of moisturizers in order to strengthen it and prevent skin lesions. They provided these moisturizers for use during hospitalization. Other guidelines corresponded to the encouragement to walk for patients who were able to do so. In the case of those with mobility difficulties, they emphasized bed preparation, advising to keep the sheets without folds to avoid friction with the skin, using pillows and/or a blanket to keep the lower limbs elevated, so as to stimulate circulation and avoid the emergence of pressure ulcers. These findings can be identified in the following reports:

[...] if the patient walks, we ask them to walk more, right, for them, to improve circulation, which they can do here in the hospital, take a shower, dry well between the toes, dry their nails, be careful, wear comfortable socks, socks that do not cut off circulation. And also for the sheets to be stretched so as not to have friction, not to have creases, things like that, to keep high when possible, a pillow, a blanket underneath so that they don't touch the heel so much, especially, these are precautions that we can suggest while they're here, for them to do here. [E011]

We also take care of the issue of injuries, because the healing function is impaired, so we advise, don't wear those flip-flops because sometimes you trip, it hurts. The skin hydration that we provide, the [name of the moisturizing cream], whatever is necessary to strengthen that skin. [E012]

The nurses recognized foot and skin care among the actions to develop education in health inside the hospital. Therefore, they highlighted the importance of providing guidelines preferably aimed at preventing complications in the feet and skin.

Guidelines regarding use of the drugs

The nurses showed concern regarding medication use by the people with diabetes during hospitalization. This concern was related to the type of medication, its amount, and its schedule. They also pointed out the importance of instructing the patient about the medication schedule, favoring interaction and providing room for the clarification of doubts. Surveillance regarding the administration of medications coming only from the hospital was also mentioned by the participants. Such findings are evidenced in the following excerpts:

I think it's important for the patient to know the medications' administration time, the time that happens in here, because then you can require, or ask, or

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clear any doubts about that, interact with the team, this I think is important. [E010]

But here for us it's calm, right, we take care if they 're only using the medications that are being given here. There are many patients who sometimes come, they're already used to taking that medication at their homes. We already look in the drawers with their permission to see if they aren't associating their medication with ours, we always watch, what's on that little table there, on the side, sometimes there's this game, right, "ah but it's not mine, it's my daughter's, it's the companion's", but we keep watching, we know who those patients are, who don't respect treatment very much. [E015]

For the patients discharged from the hospital, the nurses used an easy-to-understand language to instruct and guide them on the use of daily medications at their homes. Among those guidelines, identification, the use of symbols that represent day and night, sun and moon, respectively, as facilitators to associate the time and shift when they must use the medications. These findings can be identified in the following report:

We put the identifications when they need to take the medication, what time it is, or if it is, the same thing I used to do in primary care, I came to do it here, putting sun and moon, you know? [E05]

Another guideline identified in the interactions with the nurses was providing information regarding insulin. They reported that it is necessary to provide guidance in advance about the purpose, the effects that may emerge as a result of its use, how to store it, which the application sites are, the way of administration, the amount to be administered, and the importance of using it at the prescribed times. The guidelines were intended to promote knowledge and clarify doubts, and were intensified when the patients were expected to be discharged. This can be evidenced in the following reports:

The difficulty of the medications themselves, we try to guide a lot because, because many of them, either never took it or when they already did so, both type 1 and 2 diabetes, they have difficulty understanding what insulin is and what it is for, we explain a lot because they're also sick sometimes, they have hypoglycemia due to the amount of insulin itself, insulin needs to be adjusted several times, right. (...) So we guide all this, instruct on insulin, where they're going to leave it, how many degrees it has to be in the environment to leave that exposed, so we give all this guidance for them to leave [discharge]. [E03]

It's a lot of responsibility today for Nursing, insulin administration, how to do it, how they [patients] do it directly, the application sites, the amount. [E08]

Guidance regarding the way of administration, which is very much like that, the patients, they don't know how to administer insulin. They don't know how to store insulin. (...) So they don't know how to condition it, they don't know how to aspirate, they don't know how to administer, the homogenization, none of this they know, the time they have to wait before removing the needle, none of this the patients know, right, it's uncommon to find patients that in fact know right. The best administration sites. (...) Administration sites, the importance of using oral hypoglycemic agents, right, there's a lot that, "ah today I'm not going to do it, I'm going to eat sweets, I'm not going to use it", as if it would nullify the effect, so these are guidelines in this regard, right, trying gives them more autonomy, right, in search of their own care, right. [E09]

As you see it, it's like the patient, right, there are patients who already do it, use a lot of time, then you ask, "ah, but how much do you do?", sometimes even ask to show how much they do, right, because sometimes they they say it's 4 but at the time they're not showing the 4 on the syringe. Right, because the syringe is more complicated, each dot is two units so it all depends on the patient for you to give the

guidelines, there are some that really know well, right. [E011]

For the nurses, rotation of insulin administration is one of the necessary precautions to avoid complications such as abscess and edema. For them, it is guidance and practice that people with diabetes have resistance to do and follow. One of the reasons for this resistance is justified by the patients, as being places with greater pain sensation. They also reported that the guidelines are provided according to each patient and their particularities. This is identified in the following report:

You're always doing [insulin] *in your abdomen, why are you always doing it in your abdomen? Sometimes, they [patients] show resistance. Ah nurse because I feel less pain here. But have you tried it here on your forearm, on that little fat on your arm? Here on the flab, here on the thigh? "Oh no nurse, I've tried it and it really hurts." So okay, so do it in the abdomen, but with rotation in the abdomen, in the upper right and left quadrant and then you go rolling around the umbilical region, two fingers, and then we give these guidelines. Because they also have to know about their care, because in a little while they'll go home and they'll have to continue, they'll be diabetics, they'll have to take insulin at their homes, so they also have to understand why Nursing does this rotation. We go there and explain the function of being biting in the same place all the time, soon there is an edema, an abscess may even happen, then we explain everything to the patient in the guidelines.* [E012]

Given the above, it is understood that nurses develop, in their practice at the hospital, actions with the purpose of educating and monitoring the patient using hypoglycemic agents and insulin therapy. When educating, they emphasize the importance for the patient to follow the medication schedule, of demonstrating insulin administration, the rotation scheme and sites for application, as well as how it must be performed and the possible complications that can occur when inappropriately used. In addition to that, nurses inform about storage and conservation when at home.

Care with food

Regarding the diet, the nurses mentioned educating the patients about the exclusive consumption of the food offered by the hospital. The guidelines described by the participants aimed at promoting "healthy eating", considering that the patients show insufficient knowledge about what they can and cannot eat. The nurses also reinforced that the guidelines are provided according to each patient and their needs. Such findings can be identified in the following excerpts:

You have to keep watching the diet. For example, post-surgical patients need to have an adequate diet, they need to maintain their blood glucose levels, and then we often see that they don't have it, they receive home diet, things like that. Or they go down themselves, as here is the lunchroom, the lunchroom here under the Santa Casa, they go down there and get it, buy something. [E01]

[...] the only thing that I generally ask like this, but actually for almost all patients, but for diabetics what I ask in particular is for them [family members] not to bring food from home, for them to eat only what is coming from the hospital, for us to have greater control and improve their HGT, I know that no one is supposed to bring food from home, but some do, and then we always ask them not to bring it. [E013]

One of the big doubts I see from them, I think that almost everyone who comes here, I think it's not so much about medication and care, it's about the diet. Because sometimes we say, no, don't eat this bread because the flour is white. And they say "no, but no one ever told me I couldn't eat this bread". [E03]

So, within the unit that I use the most, the information that I most pass on, especially when he's already hospitalized,

is that he only eat hospital food, because there's the whole issue of the eating habits that patients decompensate at times. Because there is a whole situation of social cause, of sometimes it's not the patient who cooks at home, it's the family member, it's a whole question of bonds and social, of the structure of the family, of the patient. So, we always ask them to only eat hospital food while they're here, because sometimes it takes us time to notice all the patient's habits. [E05]

Some nurses request support from the hospital's nutrition team for assessment and guidance, especially in cases of patients with greater difficulty understanding or those who live alone. This can be identified in the following statements:

When I see that there is any doubt, or the patient is a little confused or lives alone, has some difficulty at home, I always call the nutrition staff. [...] only when I notice that they're on a different diet, other than the hospital's, but I also always ask for help with nutrition to do this approach. [E015]

I'm very happy with the other side, which is the nutritional part, there's always nutrition guidance (...) [E02]

In this category, it was possible to identify that taking care of the diet and food consumed by the patients in the hospital is one of the actions that represent a challenge for nurses, considering its importance in the control and monitoring of capillary blood glucose. For this, they sometimes rely on the hospital's nutrition team to approach and guide patients.

Education in health with the family members

Health education actions aimed at the family members were identified in the statements. They referred to the importance of patient care. The nurses highlighted that, when the family members have already been instructed, care becomes easier, as they assume that they have knowledge and understanding about the care measures to be developed during hospitalization and later at home. It was reported that the family members sometimes need to be included in hospital care. Therefore, nurses sought to interact, dialog and build bonds with them, inserting them in health education actions. These findings can be verified in the following excerpt:

Normally, we also at the time, when you identify a change in something, you guide, reorient this family member, right, talk about the importance of care, of attention as the patient, right, it's normally that. They already have some previous guidance, right, so I think that this already facilitates care, because often we end up not paying so much, paying so much attention to this, because when they get here they already say: "he's diabetic, uses metformin, uses glibenclamide, uses insulin, the patient is this and that", they already have a previous experience of this, right, you assume that they already have knowledge, right. [E014]

However, in the nurses' dialogs it was evidenced that, sometimes, the understanding of the "*family is difficult*", so they instructed on the use of food products such as those that are "*sweet*" and that are "*not sweet*", to explain that both contain sugar, as well as carbohydrates. For the nurses, knowing what a sugar is and differentiating one food product from another was considered fundamental in the preparation and choice of the food products to be used in the meals and, consequently, assisting people in controlling blood glucose, whether at their homes or during hospitalization. One aspect of major concern for the participants regarding the diet was the food brought from home by the family members. For them, these food products are responsible for the difficult treatment management, consequently complications, and longer hospital stays.

We notice that there are families which, sometimes even understanding of the family itself is difficult, sometimes the guidelines I give, the food, nutrition, it's

more like that for the family, to explain that certain foods have a lot of sugar. So, for them to understand why I think that the diagnosis of diabetes, the diagnosis, with my experience at the BHU was the most difficult diagnosis I had to give, because people thought that, they didn't think, right, they understood that they were going to have to change all the food and they would never be able to eat sweets, ever again, and in a way yes, but other foods that are not sweet also have a lot of sugar that they would have to reduce and they didn't understand that because the food is not sweet, right, rice, flour right, everything that has complex carbohydrates, and they don't understand it as sugar, they understand it as salt food, so this is all very
difficult for you to tell the person and here in the hospital some people we notice that they still can't fully understand the diagnosis, others do not, or they have been doing this for many years, right, others already deal with it well (...) [E013]

The diet we have to keep saying, "look, try to eat what comes from the hospital", because we have very active nutrition here in the hospital. You eat what's in the hospital because we're doing your blood glucose control and soon they bring [the family member] a pudding from home and something, and then the endocrine staff doesn't understand. [E012]

In this category, the nurse's interaction with the family of the person with diabetes was presented. In this interaction, the professionals describe their experience and point to the influence of the family on the care of their hospitalized relative and that it sometimes represents an obstacle for the Nursing team.

Discussion

In this study, the health education actions developed by the nurses with people with diabetes during hospitalization contemplated a teaching-learning process with emphasis on guidelines regarding the prevention of complications. The nurses who participated in the research understand and recognize as important the practice of education in health for people with diabetes in the hospital.

The education in health activity was described as parallel to the care process. The same was identified in a study: that there is no specific time to teach, but that nurses need to consider from the moment they enter the hospital and detect the needs[13]. However, a study points out that the moment of doing the Nursing history is the ideal time to initiate educational care[7].

In addition to that, the guidelines were characterized in a prescriptive manner in which the position of the person with diabetes was directed towards complying with the guidelines/prescription. Given the above, the guidelines' emphasis was centered on the person's behavior and on valuing their biological dimension as central axis.

This prescriptive modality in the health professional's approach describes the patient's behavior in terms of compliance, in which it is seen as problematic and disobedient, and that treatment success depends exclusively on following the medical and nursing prescription. This biomedical approach does not consider subjective experiences and practices from the perspective of people who are ill[19], which can hinder the care and self-care process and treatment conduction. Similar findings in a study identified that nurses replicate an education model aimed at hygienist practices, in which knowledge is transmitted vertically, ignoring the integration and articulation of different knowledge and practices[12].

Education in health has been predominantly developed under hygienist practices, prescriptive lectures on habits, behaviors and conducts, considering individuals passively, with an emphasis on diverse technical knowledge about the disease and how to take care of health, without considering popular knowledge and the individuals' life context[20]. The

appreciation of the biological body permeating the nurses' conduct at the expense of understanding human beings as biopsychosocial-spiritual beings is one of the findings in a study conducted with nurses, pointing to the need to transform the Nursing practice in the hospital[12]. However, in health education, it is important to value the individuals' knowledge and not only scientific knowledge[21].

Also on this aspect, a study carried out with nurses working in primary health care identified positive results after the development of health education actions, through blood glucose control and patients' reports on changing habits. However, the nurses relate the low participation of people with diabetes in the health education activities offered to the way in which they are organized and offered, to people's lack of knowledge about the disease and to the culture of the patients who, in general, value the actions that are compatible with the biomedical model[22].

The guidelines were provided by the nurses individually to the person with diabetes and/or to the family members in a collective manner in the wards. Group actions with both peers and family members were not identified in the setting of the hospital's inpatient units, as well as the use of teaching materials for such guidelines was not evidenced. Diverse evidence in the literature indicate that educational guidelines in groups of people with diabetes can be carried out in the hospital; in addition to integrating their families, this can be a space for building knowledge, exchanges and sharing experiences with each other[7]. In this space, the importance is emphasized for nurses to use educational material, in a playful and educational manner and in the form of videos or folders in the actions. In addition to that, group activities must include the collaboration of health professionals from various multiprofessional health areas[7]. Effective education in health is characterized by offering an educational intervention that is based on real problems, that is, on the person's reality and daily life for the purpose of applicability of the content learned, an example of this approach being group actions[23]. Group intervention is necessary for preventive and self-care behaviors, in addition to promoting greater dissociation of the information, mutual learning, social interaction and emotional support[23].

The hospital was described as a space to train the person with diabetes and the family members. This action was focused, with greater emphasis, on insulin use, its administration time been favorable for action and learning. The participation of people with diabetes and family members in care allows them to become protagonists in the care process, ensuring safe practices for home self-care. Teaching is described as an action that occurs with the connection between nurse and patient in which, at the same time, care is provided and teaching is done at home[13]. Difficulty in self-administering insulin at home was identified in a study as an obstacle to continuity and adherence to the treatment for diabetes[24]. Therefore, it becomes necessary to separate the patient and/or family member from the observer position since, in this way, they will feel more confident to conduct the treatment at their homes after hospital discharge[7].

In this sense, a systematic review study evaluated the effectiveness of using the “Teach-back” method - the one in which the patient confirms the information received to the professional, in order to ensure effectiveness of communication - in adherence to the treatment and self-care of people with chronic diseases. In the aforementioned review, it was verified that four studies confirmed the improvement of disease-specific knowledge in the participants, that one study showed a statistically significant improvement in medication and diet adherence among the patients with diabetes, that two studies found statistically significant improvements in self-efficacy, that five

studies found a reduction in the readmission and hospitalization rates, but not always statistically significant, and that two studies showed an improvement in adherence to diet, exercise and foot care among people with diabetes[25].

Health education actions can train individuals, family members or groups, with the purpose of contributing to the improvement of the living conditions, as well as stimulating critical reflection on their health needs and actions required for their resolution[12,26]. For this reason, it is necessary to create a bond, with a view to bringing together the different subjects involved in care, even the family member, who is often forgotten in hospital care, but indicated by the subjects as an important strategy that enhances health education in this scenario[12].

Knowledge of the health status and the means that can be used to provide care continuity at home is fundamental for people with diabetes to be able to undergo treatment, avoid complications and maintain quality of life. A number of studies indicate that people with diabetes present certain knowledge deficit regarding the disease and the treatment, which impairs self-care[11,24]. Associated with the knowledge level, inadequate literacy level exerts a negative influence on the person to perform self-care, mainly in following a healthy diet, dietary guidance and blood glucose assessment[27]. People with low schooling levels present greater difficulties in understanding and adhering to the treatment; the schooling level proves to exert an influence on learning in relation to self-care, as patients have knowledge about diabetes causing complications, but do not understand its concept and do not know how to accurately identify such complications[28]. There is diverse evidence in the literature that the greater the knowledge level, the greater the quality of life and autonomy regarding the treatment[29].

Individual education in health has the care of the individual as a potential instrument. Thus, the educational intervention in this modality takes the form of individualizing care, covering a single individual and establishing a greater bond[23]. The information on diet, foot care and capillary blood glucose provided by the nurses as a social process centered on people with diabetes aims at raising awareness and encouraging home self-care. Both for people with diabetes and for family members, information for such purpose helps to foster their participation and make decisions about care[13]. In this context, in addition to informing about the disease, the guidelines help the patients to recognize the signs and symptoms of changes in the glycemic level, both related to diet and to other factors. In addition, to the side effects of the medications used, as the circumstances that occur before and after administration can lead to adverse events and the patient needs to be aware of them[11]. Education in health was focused on guiding patients and family members, with greater emphasis on care with the feet, skin, diet, and medication use. The results of this study indicate that nurses seek to adapt the guidelines to a language that is "easy to understand" for people with diabetes, mainly for those with lower socioeconomic and literacy levels. Non-pharmacological treatment, healthy eating habits and physical exercise were identified as conflicting for the patients[24].

Among the reasons for not following the treatment is the one related to the financial issue as an impediment to following the guidelines provided, mainly those referring to healthy eating[24]. The literature describes the need for health professionals to use neutral and non-judgmental language, so that the person who is listening does not creating a different perception in relation to the disease or feels in a position of being judged. With this, there can be social distancing of the patients from their support network due to shame, guilt and feeling of failure, as well as they can be considered "a burden" for the health

system[30].

A study points out that one of the tools to develop education in health are the conversation maps. They are used as an educational strategy by the health professionals[14,23]. This instrument has proved to be internationally effective for the self-care for people with diabetes. By using it in a group in an outpatient clinic, it allowed people with diabetes, in addition to sharing experiences, to identify the lack of knowledge regarding which food products they can eat, as well as the amounts and quality for a nutritious meal that does not result in future complications[14].

It is emphasized that nurses use dialog as a tool to sensitize patients with diabetes to gradually build their own knowledge, which will be more meaningful and lasting for the self-care of the disease and treatment in an autonomous way. Given the above, the nurse plays a fundamental role in providing guidelines that motivate and mobilize people with diabetes to perform self-care. Thus, it is understood that communication is constructed and used by the nurses as an aspect of fundamental importance for patients and their family members considering the self-care process, as it will be able to influence the perception of people with diabetes during the disease. Ineffective communication can cause stress and discouragement in relation to the disease and the treatment, which, associated with fear and guilt for not having “followed through with the guidelines and care”, can result in a reduction in the demand for care in the health services and, consequently, will more aggressively lead them to develop complications.

Conclusion

The health education actions for people with diabetes developed by nurses during hospitalization were individual and collective guidelines for people with diabetes mellitus and their family members, respectively. They dealt with the theme of the disease, that is, what diabetes is, and which signs, symptoms and complications it can cause. They also sought to teach what insulin is used for in the context of diabetes and how to administer it.

Education in health is seen as the information provided by health professionals to the patients and family members, contributing to the prevention of complications and to health maintenance. The hospital is one of the health care spaces in which the patient remains 24 hours a day; therefore, it is necessary to encourage and invest in actions that train and qualify the Nursing team, and that this theme is included in the institution's activities as part of continuing and permanent education.

The importance of educating the patient is highlighted, as it will be necessary to continue the treatment at home. Therefore, it is necessary for the professionals to consider the patients in their emotional, social, economic and cultural condition, since they are inserted in a context that can influence the treatment success and, consequently, quality of life considering living with a chronic disease.

In relation to the research, it is desirable to complement this perspective with the voices of other actors, such as managers, family members and other health professionals. As a limitation, the collection technique used was the semi-structured interview, which means that the voice of the participants was prioritized in relation to other elements that would make it possible to provide information for a better understanding of education in health, such as, for example, participant observation and articulating and asking if the statements correspond to the practices carried out in the hospital.

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