

ORIGINAL ARTICLE

INDIVIDUAL HOME CARE FOR PATIENTS WITH ARTERIOVENOUS FISTULA  
CUIDADO INDIVIDUAL DOMICILIAR DE PACIENTES COM FÍSTULA ARTERIOVENOSA  
ATENCIÓN DOMICILIARIA INDIVIDUAL DE PACIENTES CON FISTULA ARTERIOVENOSA

Denise Melo de Meneses Matias<sup>1</sup>, André Ribeiro de Castro Júnior<sup>2</sup>, Eugênia Filizola Salmito Machado<sup>3</sup>, Renata Pereira de Melo<sup>4</sup>, Terezinha de Jesus Lima Tavares<sup>5</sup>, Daniele Vasconcelos Fernandes Vieira<sup>6</sup>

ABSTRACT

**Objective:** to analyze the individual home care of patients with arteriovenous fistula to prevent complications. **Method:** it is a qualitative, descriptive and exploratory study, with chronic renal patients, oriented and above 18 years of age, using arteriovenous fistula in hemodialysis. A semi-structured questionnaire was used, analyzing the data using the Content Analysis technique in the Thematic Category Analysis modality. **Results:** three categories were listed: << Individual home care of the patient with arteriovenous fistulas >>; << Self-care strategies for the prevention of complications in patients with arteriovenous fistulas >>, and << Self-care of patients with arteriovenous fistulas: guidelines received by health professionals and challenges of daily home practice >>. **Conclusion:** it becomes necessary for health professionals to adopt more effective intervention strategies in relation to the guidelines given to chronic renal patients using arteriovenous fistulas, aiming to awaken new skills to exercise their home care. **Descriptors:** Nursing, Individual Home Care, Chronic Kidney Disease, Arteriovenous Fistula, Self-Care, Nursing Care.

RESUMO

**Objetivo:** analisar o cuidado individual domiciliar de pacientes com fístula arteriovenosa na prevenção de complicações. **Método:** trata-se de um estudo qualitativo, descritivo e exploratório, com pacientes renais crônicos, orientados e acima dos 18 anos de idade, em uso da fístula arteriovenosa em hemodiálise. Utilizou-se um questionário semiestruturado, analisando os dados pela técnica de Análise de Conteúdo na modalidade Análise de Categoria Temática. **Resultados:** elencaram-se três categorias: << Cuidado individual domiciliar do paciente com as fístulas arteriovenosas >>; << Estratégias de autocuidado para a prevenção de complicações em pacientes com as fístulas arteriovenosas >>, e << Autocuidado dos pacientes com as fístulas arteriovenosas: orientações recebidas pelos profissionais de saúde e desafios da prática domiciliar diária >>. **Conclusão:** torna-se necessário, ao profissional da saúde, adotar estratégias de intervenções mais efetivas em relação às orientações repassadas aos pacientes renais crônicos em uso de fístulas arteriovenosas, visando ao despertar de novas habilidades para exercer seus cuidados domiciliares. **Descritores:** Enfermagem; Cuidado Individual Domiciliar; Doença Renal Crônica; Fístula Arteriovenosa; Autocuidado; Cuidado de Enfermagem.

RESUMEN

**Objetivo:** analizar la atención domiciliar individual de pacientes con fístula arteriovenosa para prevenir complicaciones. **Método:** es un estudio cualitativo, descriptivo y exploratorio, con pacientes renales crónicos, orientados y mayores de 18 años, utilizando fístula arteriovenosa en hemodiálisis. Se utilizó un cuestionario semiestructurado, analizando los datos utilizando la técnica de Análisis de Contenido en la modalidad de Análisis de Categoría Temática. **Resultados:** se enumeraron tres categorías: <<Atención domiciliar individual del paciente con fístulas arteriovenosas >>; <<Estrategias de autocuidado para la prevención de complicaciones en pacientes con fístulas arteriovenosas >>, y << Autocuidado de pacientes con fístulas arteriovenosas: pautas recibidas por profesionales de la salud y desafíos de la práctica diaria en el hogar>>. **Conclusión:** se hace necesario que los profesionales de la salud adopten estrategias de intervención más efectivas en relación con las pautas dadas a los pacientes renales crónicos que usan fístulas arteriovenosas, con el objetivo de despertar nuevas habilidades para ejercer su cuidado en el hogar. **Descriptor:** Enfermería, Atención Domiciliar Individual, Enfermedad Renal Crónica, Fístula Arteriovenosa, Autocuidado, Atención de Enfermería.

<sup>1,2,3,4,5,6</sup>State University of Ceará/UECE. Fortaleza (CE), Brazil. <sup>1</sup><https://orcid.org/0000-0001-9624-797X> <sup>2</sup><http://orcid.org/0000-0002-3681-3607>  
<sup>3</sup><https://orcid.org/0000-0002-0602-3591> <sup>4</sup><https://orcid.org/0000-0001-9111-9426> <sup>5</sup><https://orcid.org/0000-0003-3547-8998> <sup>6</sup><https://orcid.org/0000-0002-2731-112X>

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## INTRODUCTION

Chronic Kidney Disease (CKD) is described, correlating situations of vulnerability, such as the progressive and irreversible deterioration of renal function in which the body's ability to maintain metabolic and hydro-electrolytic homeostasis fails, directly affecting the structure and function of the kidneys, having variable clinical presentation, depending on the cause, severity and speed of disease progression, in general, resulting in uremia, which is defined by the retention of urea and other nitrogenous products in the blood.<sup>1</sup>

CKD is characterized by reduced glomerular filtration, usually associated with diseases such as diabetes and hypertension. Due to its chronic and degenerative character, it is necessary to keep this filtration controlled throughout the treatment, including the practice of self-care, in order to prevent or minimize possible complications. It should be noted that, if control measures do not exist, it can be seen, as a consequence, in its most advanced phase, the inability of the kidneys to maintain normal functioning, requiring renal replacement therapies.<sup>2</sup>

It is observed that the pictures of complications involving CKD are frequent, which have constant recurrences in specialized treatment clinics, due to the complex procedures to which patients are submitted. This research has, as a photo, in the meantime, the treatment of Arteriovenous Fistulas (AVF) and the complications that affect patients with CKD, since this option is pointed as a technique that provides better access for longevity and less association with morbidity and mortality, thus becoming a highly recommended technique in the clinic.<sup>3</sup>

It is explained that AVF is an efficient permanent vascular access, which provides duration and safety of dialysis treatment, with low incidences associated with morbidities and rates of infections and strictures. This permanent access is performed in the operating room with local anesthesia, where the vascular surgeon promotes anastomosis, junction of the radial artery and basilic vein or brachial artery and basilic vein.

It is reflected, by the clinical condition of the patients who return for the performance of procedures, directly in the information that they had access in the home context and in the care that they establish daily in this environment. It is cautioned that, in view of that, just performing the procedures safely, respecting protocols, using equipment, providing controlled rooms with different devices in specialized clinics may not meet all the criteria to guarantee an adequate and successful treatment.

In this view, education and health promotion actions become valuable strategies capable of generating attitudes that place the subjects at the center of care, valuing and recognizing their knowledge and experiences, therefore, also promoting their citizenship in health.

In this role, the nurse stands out and, among his numerous attributions, behold, he develops the role of health educator in order to encourage self-care for adherence to treatment, reducing morbidity and mortality during the treatment of CKD, and minimize fear, anguish and insecurity.<sup>1</sup>

It becomes necessary, therefore, to reach the universe outside this "hard" environment, bringing, as a basic and fundamental aspect, the assessment of possible causes at home that lead to hospitalizations as a consequence.

The patient's quality of life can be increased by encouraging self-care. Therefore, the nursing and medical teams must provide support and train the patient through health education, informing them about their disease, limitations, signs and symptoms and, mainly, about care with access to hemodialysis as potential. The study was guided, therefore, by the following question: "How does the patient with chronic kidney disease perform their individual home care with arteriovenous fistula?".

## OBJECTIVE

♦ To analyze the individual home care of patients with arteriovenous fistula in the prevention of complications

## METHOD

It is a qualitative, descriptive and exploratory study. In this type of study, the characteristics of a given population or phenomenon are defined, establishing goals to be adopted and confronted with the studied social reality.<sup>4</sup>

This work was cut from the Course Conclusion Work research entitled "The empowerment of home self-care by patients with arteriovenous fistula", presenting it to the Postgraduate Department at the State University of Ceará - UECE, in the Nursing Specialization Course in Nephrology, being carried out in a reference hemodialysis clinic in Fortaleza-Ceará, Brazil. This clinic was founded in 1981, having recognition and a gold standard in adult and pediatric hemodialysis care. Public, philanthropic and private-sector hospitals are assisted by referrals, with the assistance provided by a multidisciplinary team.

Data was collected from November to December 2017. The population chosen by CKD patients using AVF was constituted. Inclusion criteria were adopted: patients aged over 18 years and guided. Patients who were using peritoneal dialysis or had some disorientation were excluded.

Data was collected through the application of a semi-structured questionnaire covering objective criteria: sociodemographic data; life habits; history of chronic diseases; time of diagnosis and treatment of chronic renal failure; and subjective: self-care practice with fistula at home. Initially, the profile of patients at the clinic was raised, with medical records active during the collection period, so that they could be approached and invited to participate in the research at random and with elective consultations during the coverage period.

Thematic Analysis was chosen,<sup>5</sup> thus dividing into three stages: pre-analysis, which consists of the organization and aims to operationalize and systematize the initial ideas. The initial hypotheses and objectives of the research are taken up, reformulating them in relation to the material collected and in the development of indicators that guide the final interpretation. This phase is broken down into three tasks: floating reading, constitution of the corpus and reformulation of hypotheses and objectives. In the exploration of the material, the operation of analyzing the text systematically according to the categories previously formed was carried out. In the treatment of the results, inference and interpretation were formulated, the raw results, that is, the categories that were used as units of analysis, not requiring statistical analysis. After that, inferences and interpretations were made foreseen in the theoretical framework.

Participants were invited to participate in the study at random and for convenience. It is informed that the researcher was present every day (Monday to Saturday) during the collection period, covering the different shifts (morning, afternoon and night) of care. The research was approved according to the opinion of 2,381,006 / 2017 by the Ethics and Research Committee of Universidade Estadual do Ceará (UECE). The use of the criteria adopted in the research, the Declaration of Helsinki, is highlighted, whose ethical and legal standards of the research promoted and guaranteed respect to all study participants. The approach carried out in the research was authorized only with the free consent of the participants after signing the Free and Informed Consent Term (FICT), proceeding with a recorded interview during the research activities.

## RESULTS

Three categories emerged from the analysis of the interviews: I - Individual home care of the patient with arteriovenous fistulas; II - Self-care strategies for the prevention of complications in patients with arteriovenous fistulas and III - Self-care of patients with arteriovenous fistulas:

guidelines received by health professionals and challenges of daily home practice.

Thus, a view of the voices heard here is represented, and such categories refer to the speeches of the research actors in line with the literature, which reflect the projection of the ideas and interpretations exposed here.

## DISCUSSION

### ◆ Individual home care of the patient with arteriovenous fistulas

The care adopted with the fistula becomes fundamental for the adequate access to hemodialysis, the main ones being: elevation of the limb in the first days; periodic dressing changes by the caregiver and manual compression exercises to promote the maturation of venous access.<sup>6</sup> The team must pay attention, during the hemodialysis treatment, to the need to implement other care, such as: monitoring the functioning of the access through palpation and perception of the thrill; observe signs and symptoms of infection; perform hygiene; avoid venous punctures and check blood pressure in the fistula arm; avoid sleeping on the access arm and any compression. Such care is needed to be patient-oriented, leaving the team with a sensitive view of such demands and the implementation of a practice that favors the client's self-care.<sup>7</sup>

However, it was reported, as perceived in the statements below, by some participants, that they do not practice this care, although they had already been instructed.

*I can't follow the diet, if I did, I would already be dead. (E2)*

*I had a problem with the fistula because I itched a lot, it had the shape of a tunnel, then, before I used to pull it out when it itched, it even bleed a little. (E5)*

*Sometimes, I take it off with the nail (laughs); sometimes, I wait for her (nursing technician) to come here for her to take it out with the needle. She washes it before, but I take it off with my nail ... because I am like that (laughs). (E1)*

*I compress it, but it's difficult. I only do it when it is weak and gives a bruise, then I put the ice cream and then the lukewarm the other day. I always start with the cold one, because if you put the lukewarm on first, it's a problem. (E19)*

*I never did the compresses because I never had that thing that turns the purple arm [...]. Cleaning, I use acetone, wash with soap and water just in the bath. (E22)*

*If I am born, I will shave with razor. (E62)*

*If I'm in a hurry and I have to pick up a bag with the fistula arm, I take it anyway, even though I know I shouldn't. (E1)*

*The AVF is in the arm that I use the most, I write, I need to get water from the bottle and everything. (E30)*

It was noticed, based on the records of the participants, that, despite being guided, they have difficulties in practicing daily care. It is felt, although many have the support of family and caregiver, the need for them to be autonomous and independent in the practice of their care. It is also noted that they do not respect their personal limitations, associated with risk factors, and, because they are chronic renal insufficiency and have to practice specific care with the AVF, they need continuous attention from their family members.

In addition, the speeches include the knowledge that these individuals had about their previous basic chronic diseases and how much they influenced the emergence of CKF with which they currently need to live:

*I am diabetic and ended up getting an infection on my foot because I had an accident and I had to take a lot of antibiotics, because the wound was very open and would not close at all and it ended up affecting my kidney [...] my diabetes is discharged and, at I take insulin four times a day. (E39)*

*I can't do it at the moment because it formed a thrombus, then the doctor said that, for now, it can't be done so that there is no risk of the fistula not working anymore, then, you see. (E23)*

*I lost a fistula because of low pressure; the new FAV is about 16 years old and I don't care anymore, only at the beginning I did, but today I don't do it anymore. (E30)*

*I try to do the exercise with the ball despite having difficulty because I have my muscular dystrophy problem, then it gets a little complicated, but even so, I do it my way. (E43)*

AVF complications are associated with risk factors, such as previous chronic diseases of decompensated diabetes and hypertension, causing hypertension or hypotension, low blood output, aneurysms or even the lack of daily self-care practices, causing infection, dehydration and factors external and internal problems related to thrombosis, such as the inappropriate use of anticoagulants.<sup>8</sup>

It is known that vascular accesses (VA) are indispensable for HD therapy. Its quality is represented by the provision of adequate blood flow, ensuring effective dialysis, reducing the causes of complications and allowing a better approach. It is possible to mention, among other possible complications, ischemia of the distal blood flow, which occurs through a very characteristic clinical condition, and the choice of the puncture site should be considered as an ally to avoid this complication, this choice being individualized, considering the venous map of the client. This type of complication of surgical intervention is required for a distal revascularization, rendering the fistula unusable.<sup>9</sup>

#### ◆ Individual care strategies for the prevention of complications in patients with arteriovenous fistulas

For the maintenance of the arteriovenous fistula, a series of care is required by health professionals and the patient, requiring guidance for self-care in the management of their new vascular access. From this joint care, the possibility of greater durability of that fistula is provided. It is necessary for the patient to implement care, among them, those mentioned here: perform daily compression exercise with a rubber ball for fifteen minutes three times a day, helping to keep the fistula functioning; observe any change in the fistula site, such as heat, pain, erythema, edema, palpation and perception of the thrill (noticeable vibration resulting from the mixture of arterial blood with venous blood).<sup>10</sup>

It was noticed, during the responses of the study participants, the practice of daily care as strategies to prevent complications with AVF, being noticeable, in the facial expressions and emphasis of the answers, that they understood that there could be unexpected responses (complications), based on the erroneous practice of continuous care at home, with the beginning of care still essential in the clinic.

*In fact, what I do most is just washing, cleaning with soap and water every time I shower, at least three times a day, sometimes more; I don't lift weight at all because I know it can stop, right [...] then, I don't do extravagance because it's already swollen once [...] I also protect the blow fistula. (E3)*

*I do the exercise, but I don't do it with the ball anymore, I do it like this (simulates the flexion of the arm) and the hand opening and closing; my fistula is well taken care of. (E5)*

*I do the exercise with that soft ball, wash it well and hydrate. (E9)*

*I clean her in the bath, every day, I bathe about four times, I do the exercise properly, I take care of it every day in the morning and at night I look at her movement (the thrill). When there is a problem at the clinic and you have to take the needle out and it turns purple, I keep putting ice, putting a little warm water. I think that the three factors for a good fistula functioning are three factors: 1) not using the arm to carry any weight, it can be a bottle of soda; 2) you have to be careful to clean it 3) and, when it causes a small bruise, be careful to control it (compresses) and, lastly, you observe everything. (E11)*

*I am careful not to get hit, clean it (fistula) very clean, with soap and water, to avoid infection, these things, you know; I always look to see if it works, especially after I had thyroid surgery, that sometimes my blood pressure drops a lot, then I have to take some medication. (E12)*

In several speeches, the use of compresses as a care practice right after hemodialysis is

mentioned, both cold and hot compresses, the former being analgesic and the latter as circulation protectors. It is revealed that, although each one reports in their own way and according to the accessibility of resources for daily cleaning, a significant part of the participants stated that they clean with soap and hydrate the skin.

It is pointed out that care to avoid infection, both local and general, was present in the participants' quotes, demonstrating that they understood the risks and the importance of daily care post-confection of the arteriovenous fistula.

*I always do the compresses. On the first day of dialysis, I do the ice cream, on the other day, I do the lukewarm to improve circulation. I wash my fistula arm thoroughly with soap and dry it well; afterwards, I even use a moisturizer there with bepantol, I have maximum care with it, as it is very important to avoid infection. (E15)*

*I massage with anesthetic gel at home, before coming to the clinic, because my fistula is new and, when they go to puncture, I feel less discomfort [...] and, after I leave here, at home, I do the cold compress and only the other day I do the warm. (E59)*

*I remove the hairs that are in the access, I trim with the scissors because it bothers a lot before taking off the dressing, it hurts and ends up pulling, then, I trim because I'm a little afraid to pull at once and ignite, I think it's better to trim. (E67)*

Any doubts or abnormalities should be communicated to the multi-professional team, thus leading to self-care strategies in another sense. The nurse must provide openness to learn information from the client, guiding their acquisition of skills to act in situations of complications with their vascular access, being able to perform self-care actions such as: monitor the functioning of the access through palpation and perception of the thrill; observe signs and symptoms of infection; perform hygiene; avoid venous punctures and check blood pressure in the fistula arm; avoid sleeping on the access arm and any compression. It can be inferred that it is not enough just for the multidisciplinary team to be careful with this patient and his vascular accesses, understanding and the subject's assistance are necessary both in the care provided in the treatment unit as well as in the home environment.<sup>11</sup>

#### ◆ The care of patients with arteriovenous fistulas: guidelines received by health professionals and challenges of daily home practice

The team of professionals that acts as a chronic renal patient conducts, in large part, assistance to the elderly, requiring specific approaches in this therapeutic modality. It is warned that the

treatment causes a series of physical, functional and emotional limitations in old age due to the aging process, thus, these patients are prone to episodes of injuries and increased comorbidities.

Nursing is closely linked to the quality of care provided to patients undergoing renal replacement therapy, with emphasis on Chronic Kidney Disease (CKD), as pointed out in the literature, and this still emerges as an important cause of morbidity and mortality as it occurs, especially in older population. The literature points out the need for professionals to seek ways to motivate, from the orientation to the practice of self-care as a way also to meet the demands and wishes of the client, thus aiming at their satisfaction.<sup>12</sup>

Then, when analyzing the responses of the participants about behavior change and daily self-care practice, based on the guidance of the professionals, a figure (Figure 1) highlighting the behavior changes of some interviewees.

Thus, the participants' perceptions about care were portrayed after the professionals' guidance, as well as their feelings regarding daily care.

| Interview No. | Perceptions about guidance and home care   |
|---------------|--|
| E4            | From the beginning, I received these guidelines, I think that as a nurse ... they are always reinforcing this issue, if I'm washing my arm with soap and water. I always do it right, the exercises too...   |
| E5            | I was guided by a doctor and nurses, by both, I started to be guided at the clinic ... they advised that they had to be very careful so that I don't lose the AVF, so as not to go back to that thing in the neck, which was horrible. I couldn't take a shower, I couldn't do anything with the catheter, then, with this one (AVF), I had to be very careful, I was very careful, I always exercised, I always sanitized a lot, in the beginning, I used that liquid soap, which it is antiseptic, then, they said I couldn't use it much because it dries out the skin a lot, it gets dry, and I use neutral and moisturizing soap. They explained how to do exercises... |
| E33           | I don't let (anyone) check the pressure on that arm here (he pointed to the arm with the AVF); here you can't! I learned like this ... blood test, these things, I also don't allow on this arm of the fistula, I say they can't.  |
| E17           | It was explained, yes, when I'm at home, I massage around with (Hirudoide) daily, I use moisturizer here and on the whole body; there, I also compress when the bruises appear, I do it like this: I take the cold bag, put it on top, leave it there; only then do I make it warm. I do the hygiene, cleaning with baby soap (neutral), to prevent bacteria.  |
| E54           | Doctors, nurses, technicians and social workers too ... always explain how to be careful not to infect or "make it worse" (complicate) it here. They say that if there is any change in the skin or feel something, get sick, return here, that they evaluate as soon as possible.   |

Figure 1. Perception and self-care of research participants with Arteriovenous Fistula registered in a clinic in Fortaleza. Fortaleza (CE), Brazil, 2017.

It was observed that care in general is explained and repeatedly cited by patients. Some have shown more guidance than others. Care in the home is spread because they understand the importance of avoiding complications that make CKD treatment unviable and, consequently, hemodialysis.

It is inferred that, although the understanding and persuasion of care was something that professionals were able to pass on to the research participants, some challenges are established in their responses to the practice of their daily care, such as demotivation and lack of interest, as noted in the excerpts below.

*I don't do it because I don't want to. But it is not for lack of guidance, I started receiving guidance there at the hospital. (E1)*

*At the beginning, there is a lot of care, but, over time, we end up reducing this care a little. I do not exercise, when I realized I was very dilated (developed), I stopped doing it. I am afraid something will happen. Honestly, I don't think it contributes much anymore, only at the very beginning. (E45)*

*I do not do the exercise, due to lack of motivation, laziness. (E54).*

*When I don't feel very well, then I don't come for dialysis, but only when I'm really bad. (E68)*

The health team becomes highlighted, the Nursing team, responsible for most of the care actions, being in a central position in the role of preventing incidents from reaching the patient, detecting complications early and performing the necessary actions to minimize the damage.<sup>13</sup>

Health professionals need to have a different perspective on the complex care of patients with renal failure, as it is a disease that presents personal and professional contexts due to the change in the individual's daily routine. Learning about individual care should, at this moment, be part of the processes of education, guidance and

understanding of the peculiarity of the subject's life, seeking strategies for adherence and changing behavior / habits.

This research presented some challenges for the researcher, who tried to abstain from her own impressions about the service and sought to understand only the participants' records. The described record was carried out according to the patients' knowledge and according to their understanding, trying to be directed as much as possible to the focus of the instrument's guiding question.

## CONCLUSION

It was observed, according to the participants' reports, the importance of the proximity of nursing assistance with regard, especially, to health education with patients using AVF. This care must occur in order to improve the quality of life of chronic kidney patients using the renal replacement therapy service through the AVF.

It was also noticed that, although the participants report specific care and understand the home care process guided by health professionals, the challenge remains for these professionals to adopt more effective intervention strategies with patients, considering, as essential, the subjective aspects of their relationship with the disease, in view of the existence of a distance between knowledge and doing.

Among the practices of care with the AVF, the use of compresses as care practices soon after hemodialysis was mentioned, both cold and hot compresses, the first with painkillers and the second with protection of circulation. Insignificant part of the participants described themselves, although each individual reports their own way, and according to the accessibility of resources for daily cleaning, soap cleaning and skin hydration.

It is concluded, regarding care to avoid infection, both local and general, that these were present in the participants' quotes, demonstrating that they understood the risks and the importance of daily care after the preparation of the AVF. Therefore, it is warned that, although the understanding and persuasion of care was something that professionals were able to pass on to the research participants, some challenges remain established in their responses to the practice of their daily care, such as demotivation and lack of interest.

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### Corresponding author

André Ribeiro de Castro Júnior  
Email: [andrecastrorcj@gmail.com](mailto:andrecastrorcj@gmail.com)

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