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Nursing assistance in peritoneal dialysis: applicability of orem theory –mixed method study[a]

Assistência de enfermagem em diálise peritoneal: aplicabilidade da teoria de orem - estudo de método misto

Asistencia em enfermería em diálisis peritoneal: aplicabilidad de la teoría de orem – estudio de método mixto

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Abstract

Objective: To understand the applicability of Orem's General Nursing Theory in assisting patients on peritoneal dialysis at home. **Method:** Mixed method study. In the quantitative stage, a cross-sectional, descriptive and exploratory study was carried out with 34 patients on peritoneal dialysis. An instrument was applied for sociodemographic and clinical characterization and the scale for assessing the capacity for self-care - Appraisal of Self Care Agency Scale Revised. Analysis of data using descriptive statistics. In the qualitative approach, Grounded Theory was used. 23 home interviews were conducted with 19 participants. Data analysis followed open, axial and selective coding. **Results:** 59% of the participants had the capacity for operationalized self-care. Patients on peritoneal dialysis met, to varying degrees, the six categories of self-care requirements for health deviation to perform therapy at home. Support and education stood out as a modality of the Nursing system. **Conclusion and implication for practice:** Orem's General Nursing Theory applies to nursing care for people on peritoneal dialysis. Its use is suggested as a theoretical support for the Nursing Process.

Keywords: Self-care; Peritoneal Dialysis; Nursing; Nursing Theory; Nephrology

Resumo

Objetivo: Compreender a aplicabilidade da Teoria Geral de Enfermagem de Orem na assistência prestada aos pacientes em diálise peritoneal domiciliar. **Método:** Estudo de método misto. Na etapa quantitativa realizou-se uma pesquisa transversal, descritiva e exploratória, com 34 pacientes em diálise peritoneal. Aplicou-se um instrumento para caracterização sociodemográfica e clínica e a escala de avaliação da capacidade para o autocuidado - *Appraisal of Self Care Agency Scale Revised.* Análise dos dados por estatística descritiva. Na abordagem qualitativa, utilizou-se a Teoria Fundamentada nos Dados. Realizaram-se 23 entrevistas domiciliares com 19 participantes. Análise dos dados seguiu as codificações aberta, axial e seletiva. **Resultados:** Dos participantes, 59% tinham capacidade para o autocuidado operacionalizado. Os pacientes em diálise peritoneal atenderam, em diferentes graus, às seis categorias de requisitos de autocuidado de desvio de saúde para a realização da terapia em domicílio. O apoio e a educação destacaram-se como modalidade de sistema de Enfermagem. **Conclusão e implicação para a prática:** A Teoria Geral de Enfermagem de Orem se aplica na assistência de Enfermagem a pessoas em diálise peritoneal. Sugere-se sua utilização como suporte teórico para o Processo de Enfermagem.

Palavras-chave: Autocuidado; Diálise Peritoneal; Enfermagem; Teoria de Enfermagem; Nefrologia.

Resumen

Objetivo: comprender la aplicabilidad de la teoría general de enfermería de Orem para ayudar a los pacientes en diálisis peritoneal en el hogar. **Método:** estudio de método mixto. En la etapa cuantitativa, se realizó un estudio transversal, descriptivo y exploratorio con 34 pacientes en diálisis peritoneal. Se aplicó un instrumento para la caracterización sociodemográfica y clínica y la escala para evaluar la capacidad de autocuidado - Evaluación de la escala de la agencia de autocuidado revisada. Análisis de datos mediante estadística descriptiva. En el enfoque cualitativo, se utilizó la teoría fundamentada. Se realizaron 23 entrevistas domiciliarias con 19 participantes. El análisis de datos siguió una codificación abierta, axial y selectiva. **Resultados:** de los participantes 59% tenían la capacidad de autocuidado operacionalizado. Los pacientes en diálisis peritoneal cumplieron, en diversos grados, las seis categorías de requisitos de autocuidado para la desviación de salud para realizar la terapia en el hogar. El apoyo y la educación se destacaron como una modalidad del sistema de enfermería. **Conclusión e implicación para la práctica:** la teoría general de enfermería de Orem se aplica a los cuidados de enfermería para personas en diálisis peritoneal. Su uso se sugiere como soporte teórico para el Proceso de Enfermería.

Palabras clave: Autocuidado; Diálisis Peritoneal; Enfermería; Teoría de Enfermería; Nefrología.

INTRODUCTION

Peritoneal dialysis (PD) is a type of renal replacement therapy performed as a treatment for chronic kidney disease (CKD) with dialytic need.[1] In Brazil, it is estimated that there are 10,410 people on PD[2] treatment, with a prevalence of 45.6 per million (ppm). This is lower when compared to countries such as El Salvador (288.7 ppm), Guatemala (221.3 ppm), Colombia (143.6 ppm), Uruguay (71.6 ppm) and Chile (61.2 ppm) and higher compared to Argentina (36 ppm) and Paraguay (4 ppm).[3]

PD has two modalities, continuous ambulatory peritoneal dialysis (CAPD), which is a manual method, in which the peritoneal cavity dialysis solution exchange is performed by means of gravity every 4-5 hours, and automated peritoneal dialysis (APD), which is performed by means of a machine responsible for the dialysis solution exchange process for 8 to 10 hours per night, leaving the patient free during the day for other activities.[4]

Regardless of the method used, PD can be performed at home by the patient himself or with the help of a caregiver.[4] For this, they must participate in the therapeutic education for self-care, which includes: the dialysis procedure, the performance and recognition of intercurrences, the weight gain between PD sessions and the adequate diet.[5] Therefore, she needs to have the capacity for operational self-care, that is, to have the capacity to perform her self-care.[6]

In addition, this is a home treatment, in which the patient in PD should periodically attend the Nursing appointments for follow-up.[5] Both in nursing consultations and in therapeutic education, the nurse is a facilitator of PD patient care. Because, besides performing nursing procedures, he guides and evaluates the cognitive, social, emotional, environmental aspects and those related to treatment, such as diet, correct use of medication and manual dexterity.[7] In this sense, the assistance offered should be systematized through the Nursing Process anchored in a theoretical support,[8] in order to avoid gaps and conceptual divergences that impede the efficiency and quality of care.[9]

In this context, Orem's Nursing Theory has been used in nursing assistance to patients with chronic diseases.[9,10] It should be noted that this is a theoretical construct that encompasses three theories, the Self-Care Theory, the Self-Care Deficit Theory, and the Nursing Systems Theory,[6] and its applicability can be expanded to various individuals and groups with self-care needs.[9]

The theory of self-care encompasses concepts necessary for its understanding, they are: self-care, self-care actions, therapeutic requirements and requirements for self-care.[6,11]

Self-care is defined as "the practice of activities that individuals initiate and perform on their behalf in the maintenance of life, health and well-being".[6:104] Self-care actions, also called the agency of self-care, refer to the power and capacity that the individual possesses to engage in self-care.[6,12]

The actions performed by people with the objective of taking care of themselves are called therapeutic requirements and must be carried out for a specific period in order to satisfy the requirements of self-care. Among the requirements are: the universal requirements, which include the processes necessary for the integrity of the body, such as breathing and feeding; the developmental requirements that are geared to the development of the person and change according to the different stages of life; and the requirements of deviation from health that refer to the care or decision-making that is required in cases of illness, with the aim of recovery, rehabilitation and control. It is worth noting that nursing interventions generally focus on the requirements of health deviation and that these require therapeutic self-care.[6]

There are six self-care requirements for health deviation:[6:201-202]

1) Seek and ensure appropriate medical assistance in cases that may compromise health such as exposure to biological agents or physical, environmental, genetic and/or psychological conditions that may be associated with human pathologies.
2) Be aware of the effects and results of the pathological condition.
3) To effectively carry out the prescribed diagnostic, therapeutic and rehabilitation measures aimed at the prevention, recovery and control of certain types of pathologies.
4) Be aware of, observe and regulate side effects and uncomfortable effects coming from medical treatment measures, including the effects on development.
5) Accept and adapt positively to their health adversities and, consequently, adhere to specific forms of care.
6) Learn to live with the effects of their pathological conditions, promoting personal development in a systematic and continuous way.

It is noteworthy that the demand for therapeutic self-care refers to the type and amount of care that is prescribed, for a period of time, aiming at maintaining life.[6] In the Theory of Self-Care, when the need for therapeutic self-care is greater than the individual's capacity to perform self-care actions, then there is the self-care deficit, in which nursing assistance is required.[11]

In this research, to verify the applicability of Orem's Nursing Theory, the focus was on the demand for therapeutic self-care and the requirements of self-care for health deviation, since patients who were on home PD performed activities prescribed by health professionals for the maintenance of life.

The Self-Care Deficit Theory deals with cases in which the individual is unable to meet all the demands necessary to satisfy his self-care or when he is faced with limitations, highlighting the need for Nursing. Thus, it must use one of the five methods of help, namely: acting or doing for the other; guiding or guiding; physical and psychological support; providing and maintaining a supportive environment for personal development or teaching the other.[6,12]

In its turn, the Nursing Systems Theory describes the possibilities of assistance to people with self-care deficits, according to the classification of the Nursing systems, being them: the totally compensatory system: when Nursing is responsible for satisfying all the demands that will guarantee human existence; partially compensatory system: in cases where both Nursing and the person perform self-care activities; support-education system, which occurs when the person is able to perform self-care

activities, but needs to learn the therapeutic self-care activities that are taught by nurses.[6,12]

In this context, when the application of this construct as a theoretical framework for the Nursing Process in nephrology is analyzed, part of it can be used, using one or two theories or concepts imbued in them, such as the concept of self-care,[13-15] or referring to hemodialysis patients.[16]

Therefore, it is relevant to explain its applicability in this area, enabling the Systematization of Nursing Care, the construction of collective projects and speeches proper to the discipline of Nursing.[9] This study was justified, therefore, by the potential of the theoretical construct of Orem to give visibility and ground the process of care, related to the disease and treatment, which aims at the promotion of self-care and autonomy of the chronic renal patient and family.

So, the following guiding question was raised: how does Orem's Nursing Theory apply to nursing care provided to patients in PD? The objective was to understand the applicability of the General Nursing Theory of Orem to the care provided to patients in home PD.

METHOD

The results published in this article were extracted from the Master' s dissertation in Nursing entitled: "Home Peritoneal Dialysis: Abilities to perform the therapeutic ritual".

This article presents a study with a mixed method by the sequential transformer strategy, in which the research occurs sequentially in two phases, adopting a theoretical lens to guide the study and overlapping the sequence since the data collection.[17]

In this study, the first phase was with a quantitative approach and the second with a qualitative one, with priority from the qualitative perspective (quan QUAL), guided by the Doroteia Orem Theory as a theoretical perspective for the integration in the analysis/discussion of results. Thus, in the first phase a transversal, descriptive and exploratory research was carried out in order to evaluate the capacity of self-care of the participants in face of the demand for home PD. A structured questionnaire was applied, with its own elaboration, for socio-demographic and clinical characterization and a scale for evaluating the capacity of self-care, the Appraisal of Self Care Agency Scale Revised (ASAS-R). The ASAS-R was validated for use in Brazil and is a Likert type scale, which contains 15 questions with 5 possibilities for answers, which varies from totally disagreeing to totally agreeing. The scoring range goes from 01 to 75, and the higher the score the higher the operationalization for the self-care capacity.[18,19] In the quantitative phase, the analysis of the data was done by means of descriptive statistics, being calculated the mean, standard deviation, relative and absolute frequency. The Statistical Package for the Social Science (SPSS) software version 20.0 was used. The data of this phase also made it possible to select and characterize sample groups for the qualitative phase.

In the second phase, the qualitative approach followed the guidelines of Straussian Grounded Theory (GT), a method of post-positivist tradition that aims, instead of testing, to develop theory derived from systematically analyzed data, in constant comparisons between them. It is characterized by using theoretical sampling, constant comparative analysis of the data, elaboration of memos and differentiating substantive theory from formal theory.[20] The Straussian strand allows the use of theoretical reference; the collection, analysis of data and theory are intrinsically imbricated, extracting an innovative scheme that better reflects the reality studied.[21] The objective of this stage was to understand the compliance with the requirements of self-care deviation by patients in PD.

Considering the two phases, data collection took place between June 2015 and June 2016 and in two scenarios. The first was the dialysis service of a public teaching hospital in the State of Minas Gerais, with capacity to care for up to 50 patients in PD, where study participants were registered for treatment. The second scenario was the home of the research participants.

Before the data collection, the researcher made weekly visits to the dialysis service for a period of five months, because she understood that in these moments interpersonal relationships would be created and improved that would favor the subsequent collection of empirical data at home. At those moments, the patients registered in the PD service were informed that the researcher was a nurse and that she would do a research, being the same ones aware of the objectives of the research, besides carrying out the reading and signing of the ICF.

In the PD service, of the 37 people registered, three were excluded: one for cognitive deficit reported by the caregiver and confirmed by the researcher, which prevented her from answering the interview, and two people for death. Thus, 34 patients participated in the first phase.

Inclusion criteria were adopted: people over 18 years of age, who were able to express themselves through verbal language; who performed PD at home and were registered with the PD service, scenario of this investigation. They were excluded to those who did not have conditions to answer the survey, according to the evaluation made by the interviewer in the act of the survey and ratified by the caregiver who accompanied him; and for the second stage of the survey, to those who lived in another municipality.

In the second phase, among the possible participants, 14 were excluded because eight lived in another municipality, three died, two were transferred to hemodialysis, and one did not accept to receive the home visit (HV) for the interview. In this one, data were collected at home using the techniques of open interview, participant observation, field diary records and preparation of memos. The interviews lasted approximately 30 minutes, were recorded and later transcribed.

Nineteen people participated in the second phase. They were distributed in three sample groups. In the first, ten people participated and the interviews were guided by the questions: "For you, what is peritoneal dialysis like at home?"; "Tell me what are the steps you take to perform a dialysis session?"; "For you, if they exist, what are the facilities to perform peritoneal dialysis?"; "Are there difficulties? What?"; "What care do you have to improve

your treatment?"; "Do you receive, or have you already received a visit from the Family Health Team or the Multi-professional Home Care Team? If so, how was it?".

With the analysis of the data and in order to obtain the theoretical saturation, the need arose for a second sample group, for which the following guiding questions were used: "What is your day to day like? Tell me, what do you do from the time you wake up to the time you sleep"; "How do you organize and fit dialysis into your daily life?"; "What helps you to live with PD and to make it happen? This was composed of four participants.

Thus, theoretical saturation was obtained during data collection by home visits and interviews with 14 participants. With the need for theoretical validation, the third sample group was created, composed of nine people, and of these, four also composed the first group, totaling 23 interviews with 19 participants. It is highlighted that the sample size was guided by the theoretical saturation criterion, that is, data were collected until the categories were well developed regarding their properties and dimensions.[21]

The analysis was performed concomitantly with the collection and occurred according to three types of coding: open, axial and selective. The first consisted in the identification of the concepts expressed in the data and was performed through the microanalysis technique of the interview transcriptions. The axial coding sought to establish a relationship between the categories and their subcategories and, through selective coding, a substantive theory on the phenomenon researched was integrated and refined, presented in the form of a diagram in which the relationship between the central category and the subcategories was identified.[21]

After separate analysis of the quantitative and qualitative data, they were integrated by the sequential transformation strategy.[17] The similarities and differences in the data of the qualitative stage were identified, according to the classification of the patient regarding his capacity of self-care operationalization, that is, a complementary analysis was performed. The purpose of this analysis was to compare the fulfillment of the self-care requirements of patients with capacity for operationalized self-care with those classified as capacity for non-operationalized self-care. Enabling the understanding of how Orem's Nursing Theory applies to nursing care provided to PD patients. For the organization of the empirical database, text editing and coding support, OpenLogos ® software was used.

All the ethical requirements were met, according to Resolution n. 466/2012 of the Conselho Nacional de Saúde.[22] The research was approved by an Ethics Committee under the opinion no. 1,004,325 and, to preserve the anonymity, the participants were called by means of flower names.

RESULTS

Characterization of participants

The socio-demographic and clinical characteristics are listed in Table 1. It is noteworthy that 79.5% are women, 53% are illiterate or have incomplete elementary education, 94.1% are beneficiaries of the Instituto Nacional de Seguro Social (INSS). The age ranged from 32 to 89 years, the average being 56.62 (±14.62) years. The other socio-demographic and clinical data are found in Table 1.

As for the operationalization of self-care, the ASAS-R scale score varied between 44 and 64, with an average of 54 (± 6.47) points. Thus, 59% (20) of the participants had capacity for operationalized self-care and 41% (14) did not have capacity for operationalized self-care. It should be noted that among the seven male participants in the survey, four (57%) had capacity for non-operationalized self-care. Among the 27 women, 37% (n=10) had no capacity for operationalized self-care.

Applicability of the General Theory of Nursing of Orem in assisting people in PD: meeting the requirements of health deviation and classification as to the Nursing system

So that the person can perform home PD, it is necessary to perform therapeutic self-care activities, and, for this, the person must have the capacity to engage in self-care. It is important to emphasize that, even counting on a helper or person in charge of the dialysis procedure, living with the disease and its demands requires the patient to maintain other therapeutic self-care activities, such as, for instance, performing a daily dressing in the catheter ostium, as reported by Dália.

> [...] I dress every day. Since I came home, I have never abandoned the task of making the dressing. At bath time, I wash well, I pass 70% alcohol and ointment, I put on. The doctor gives it to me, and I put [...] (Dália).

When considering the capacity to perform self-care with the demands of therapeutic self-care, it was perceived that the participants classified as having the capacity for non-operational self-care needed the help of a relative or reported greater concern in performing dialysis at home, in addition to presenting greater difficulty in reporting the steps necessary for the installation of dialysis, when compared to those considered to have the capacity for operational self-care.

Regarding the health deviation requirements, it was learned that all participants engage in the therapeutic requirements of self-care and meet, to different degrees, the six categories of health requirements. To meet the first requirement, the individual needs to seek and secure appropriate medical assistance when needed. In this one, it was noticed that the patients in PD, by performing the treatment at home, are aware of their health needs and seek specialized help, as reported by Amarilis and Orquídea, and thus fulfill the requirements of this requirement.

> [...]If there is a problem with the machine, I turn the machine off and go to sleep, then, the next day, I call or come here [nephrology service], because here it does not work at night [...] (Amarílis).
>
> [...] A couple of times, at night, I already called XXX [company that supplies the cycler and materials for the

Table 1. Sociodemographic and clinical characterization of people on peritoneal dialysis, Juiz de Fora, Minas Gerais, Brazil.

Sociodemographic data	% N		Average	PD
Female Sex	79.5%	27	-	-
Male Sex	20.5%	7	-	-
Schooling				
Basic illiterate/incomplete education	53%	18	-	-
Complete Elementary School	5.8%	2	-	-
Complete High School	35.3%	12	-	-
Complete higher education	5.9%	2	-	-
Occupation				
Labor activity	5.9%	2	-	-
Beneficiaries of the Instituto Nacional de Segurança Social	94.1%	32	-	-
Personal Income				
Less than 1 minimum wage	2.9%	1	-	-
1 to 2 minimum wages	85.4%	29	-	-
3 to 4 minimum wages	8.8%	3	-	-
Clinical Data				
Type of Dialysis				
Automated Peritoneal Dialysis	94.1%	32	-	-
Continuous Ambulatory Peritoneal Dialysis	5.9%	2	-	-
Time in months	-	-	25.5	+18
Peritonitis in the last year				
No	94.1%	32	-	-
Yes	5.9%	2	-	-
They need help to perform peritoneal dialysis	64.7	22	-	-

Source: Research data.

> realization of DP that has a customer service phone], but it didn't work, they couldn't solve the problem, so I turned off the machine and the next day I brought it here [nephrology service] [...] [(Orquídea).

The second requirement of health deviation concerns the consciousness related to the effects and results of the disease. And, with the analysis of the data, it was learned that living with the need to perform PD makes patients experience discomfort and fears related to treatment, as reported by Centáurea.

> [...] At first, we were very worried, I was afraid, I wasn't sure if I was doing it right, if the treatment was going to work, because it was a new treatment. Today no, it's all quiet [...] (Centáurea).

In addition, participants realized that CKD limited them physically. It was understood that the limitations varied according to the patient and that they made adaptations according to the statement of Crisântemo.

> [...] Even doing the treatment, I don't stop doing certain activities, because I think it clears up and so on. Of course, I won't keep picking up weight, knowing that I can't keep picking up weight, but I do some activities [...] (Crisântemo).

Besides the reported adaptations, the participants affirmed to develop therapeutic self-care activities that include, among others, the care with the PD catheter, which is exemplified in the speech of Centáuria, the drug and non-drug treatment, in which the accomplishment of an adequate diet, the management of the ingestion of liquids and the accomplishment of physical activity stand out, according to the reports of Tulipa and Azaleia.

> [...] I take a bath and wash well, with soap, the hole. I sometimes play alcohol [...] (Centáurea).
>
> [...] I even go to the Farmstead to do gymnastics, but once a week [...] (Tulipa).
>
> [...] Oh, I avoid eating too much, but I don't diet. I avoid eating too much, I eat everything, but I avoid eating too much [...] (Azaleia).

The PD procedure was also included in the therapeutic self-care activities. It was realized that it is a systematized process, according to Lírio statement, which involves much more than the connection of the patient with the PD system, but a whole preparation of the environment, material resources and people involved until the dialysis itself is finished.

> [...] First, I separate all the material, it is not, then I clean the machine with a damp cloth and then I clean the table with alcohol. Then I clean all the material, the bags, the tape, the drainage access, all the pieces with alcohol and a towel. And then I wash my hand again and I connect to the machine, then I connect the bags, right? I put to fill the lines, I come, and do the last hygiene and lie down to wait for the line to fill so I can call [...] (Lírio).

The development of these therapeutic self-care activities makes the patients comply with the third requirement of health deviation, since they deal with the realization of the therapeutic measures of CKD.

The fourth requirement concerns learning to live with adversity, in addition to promoting personal development. And, with the analysis of the data, the peculiarity of the care that should be provided to the patient is ratified, because the participants in PD are aware of their health situation and try to develop some activity and/or maintain some occupation, in order to attenuate the coexistence with the disease, besides promoting personal development, as reported by Crisântemo.

> [...] Of course I won't be picking up weight, knowing that I can't be picking up weight, but I do some activities. I like cooking; I go to the kitchen to do things. And extra jobs that need to be done, I do [...] (Crisântemo).

It is clear from the statement of Crisântemo that, besides having learned to live with adversities, he has adapted to the activities he develops, because he does not carry out activities that involve "picking up weight" and in this way, the fifth requirement of health deviation is also fulfilled.

As far as adaptations are concerned, it was possible to notice that all the participants needed to adapt their residences, either by building bathrooms and removing curtains, or with decorative objects, according to the lines of Calas and Dália.

> [...] He put a wall in the room, put a door, the curtain had to be changed [...] (Calas).
>
> [...] I made a little square, a bathroom, a vase with a sink, understand? [...] (Dália).

The commitment of the patients to make the adaptations both in their daily life and in their homes shows that they have met the fifth and sixth requirement of the health deviation, which are, respectively, to accept and adapt positively to their health adversities, have regular knowledge and observe the side effects of the treatment.

In view of the above, it is reiterated that people in home PD meet, to different degrees, all the therapeutic self-care requirements defined by Orem and, to this end, they have qualified through the therapeutic education provided by the PD service nurse. In this sense, it is understood that the Nursing System present in this context is that of support-education.

It should be noted that if the patient does not have the capacity for operationalized self-care and does not have a responsible for performing the dialysis procedure, he should be submitted to treatment in the PD service under the care of the responsible nurse. In these cases, the present Nursing system will be the Partially Compensatory System.

DISCUSSION

The socio-demographic and clinical profile of the sample was similar to those described in other national[23,24] and international surveys. However, in the international literature CAPD patients to the detriment of APD.[25,26]

Regarding the operationalization of self-care, in this sample, the average points on the ASAS-R scale was 54 (±6.47), similar to that found in Brazilian research, which adapted and validated the scale for the Brazilian context and performed with 240 diabetic patients (56.8±0.48)[19] and in Spanish research with 106 patients with spinal cord injury (50.87+6.83).[27] However, this was higher than the result in a sample with 309 hypertensive patients in Ethiopia (27.8±7.0).[28] This finding exposes the existence of a relationship between the repercussions of the underlying disease and the local connection of the patient in the operationalization of self-care.

Already in a research conducted in Brazil, with 100 patients in hemodialysis treatment, the average score on the scale was 60.64 (±8.24).[29] As far as we know, there are no national or international studies on self-care capacity in PD patients, and new research is needed to expand this understanding.

In this research, 59% of the participants presented capacity for operationalized self-care. There is evidence that among hypertensive patients there is, also, the predominance (52.8%) of people with good agency of self-care.[28] It is apprehended that there is important space for the performance of nursing together with people with capacity of the self-care not operationalized, aiming at improving it through the process of systemized care.

It should be noted that the use of the ASAS-R scale can be a strategy to be used by nurses in order to direct the assistance provided and prescribed, since a good capacity for self-care increases the probability that the patient has good practices of self-care.[28] In this context, when using the Nursing Theory of Orem as a theoretical basis in the Nursing Process, in the care of patients in PD, it becomes interesting to apply the ASAS-R scale.

Regarding the self-care requirements in health deviation, it was learned that patients in PD meet, to different degrees, the six categories of requirements. And, when analyzing the capacity for self-care investigated in the first phase of the research and the

fulfillment of the demands for therapeutic self-care resulting from the qualitative stage, it was found, when integrating the results, that the patients with capacity for non-operational self-care, when compared to those with capacity for operationalized self-care, depended on the assistance of a family member or caregiver to perform the dialysis procedure. In this sense, it is understood that these did not effectively meet the third requirement of health deviation, which concerns the performance of diagnostic and therapeutic measures, requiring more attention and the inclusion of support and education actions in the nurse's care plan.

This finding expressed the integration of the analyses of the two phases of this research, making it possible to understand the differences and similarities in the attendance to the requirements of health deviation by patients in PD.

The fulfillment of the health deviation requirements was also investigated in research involving people with breast lymphodemas and in this research three self-care requirements of health deviation were identified, they were the two, three and six requirements.[30]

Although no other studies have been found regarding the fulfillment of the health deviation requirements by PD patients, there are reports in other samples that PD patients seek professional help when needed, as they travel as early as possible to the dialysis service,[31] which allows to infer that they also meet the first health deviation requirement.

The fear of the need to live with dialysis and the awareness of the need for treatment, which entails changes and adaptations imposed on the individual and his illness, were reported in this and other studies,[32,33] confirming that the patients were aware of their illness and the results from the illness, also demonstrating that they learned to live with the disease to promote personal development, thus meeting the second and fourth requirements of health deviation.

Managing the treatment of CKD goes beyond the performance of dialysis treatment itself, since there are other demands for therapeutic self-care, which include catheter care, drug and non-drug treatment, in which liquid restriction, maintenance of an adequate diet and physical activity are highlighted. The fulfillment of these requirements, either partially or totally, have been reported in other studies,[14,31] which allows us to infer the fulfillment, in other samples, of the third requirement of health deviation.

The need to adapt the residence for the performance of PD at home and the adequacy of the treatment requirements to the routine of the patients in PD and their relatives were described in the on-screen study and in other researches.[31,34-36]

In this context, it is noticeable that patients in PD, with the help of their relatives, learn to live together and adapt positively to their health adversities and demonstrate that they have knowledge about the disease and regulate the side effects of treatment and, in this way, meet the fourth, fifth and sixth health deviation requirement. It is worth mentioning that the adaptation aims to overcome the difficulties experienced in the daily life of people in PD and these should be evaluated and stimulated by the nurse in therapeutic education for PD.[37]

It is important to emphasize that therapeutic education, being the nurse's responsibility, is an imperative resource to meet the requirements of health deviation, because it aims to make the patient independent and able to perform the treatment at home.[38,39] Furthermore, since it is the patient who performs the dialysis procedure at home, the Nursing system of support-education is identified.

In view of the above, the applicability of the General Nursing Theory of Orem in the nursing care of PD patients is apprehended, since this construct instrumentalizes professionals for quality care, considering the binomial health-disease.[40] In addition, it has proved adequate for use in the Nursing Process, making the Systematization of Nursing Care possible for people in PD, contributing to the practice of evidence-based nursing.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

It was apprehended that patients in PD make efforts to ensure the performance of self-care therapeutic activities prescribed by health professionals. Thus, they demonstrate to satisfy, in different degrees, the six categories of self-care requirements of health deviation. Those who have the capacity for non-operationalized self-care meet these requirements to a lesser degree, when compared to patients with operationalized self-care. Also, regarding the Theory of Nursing Systems, considering the whole context of home dialysis, the support-education system is present.

The Orem's Nursing Theory encompasses all the complexity that involves the patient's care in PD, because it defines which are the health deviation requirements to be met and classifies the Nursing system to be adopted in each case. Thus, it is suggested to use it in nephrology services as theoretical support for the Nursing Process.

It should be noted that this study contributes to the practice of nurses in dialysis services, since it identified the applicability of the Nursing Theory of Orem in assisting patients on peritoneal dialysis. It can guide these professionals on the choice they should make, becoming a theoretical contribution capable of substantiating the Nursing Process and supporting the systematization of care, which is relevant to reduce risks, alleviate suffering, raise the quality of care offered and the satisfaction of patients and families. In addition, the systematized care contributes to give visibility to the resolutive action of the nurse in the care context of this modality of health service.

As a limitation of this study, we have the sample for convenience that did not allow the comparison with other realities for statements and generalizations. Besides the restriction of studies that deal with the self-care requirements of deviation from health and that hindered the discussion of the capacity of self-care of patients in PD.

The need for new researches that address the relationship between the capacity of operationalization of self-care and the fulfillment of the requirements of self-care of health deviation, especially in other realities is pointed out, in order to broaden

the discussion on this topic and verify the applicability of the use of the Nursing Theory of Orem in other populations and, thus, generalize these findings.

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