

Model of nursing technical care for kidney transplant patients

Modelo técnico-assistencial de cuidados de enfermagem ao paciente de transplante renal

Kelen Patrícia Mayer Machado¹ , Simone Lysakowski¹ , Bárbara Rodrigues Araujo² ,
Rita Catalina Aquino Caregnato² , Carine Raquel Blatt² 

ABSTRACT

Objective: to develop a model of nursing technical care for kidney transplant patients. **Method:** development of a technical care model based on the theories of Orem and Watson based on convergent care research. The setting was a Transplant Center in southern Brazil. Data collection - diagnosis of activities performed in the kidney transplant service; semi-structured interview with patients; and three focus groups with nurses. Nine kidney transplant patients and ten nurses who work in the perioperative period participated. Content analysis was performed. **Results:** categories emerged from patients - expectations of kidney transplantation; information about treatment after transplantation; lifestyle changes after illness; importance of self-care; feelings involved in kidney transplantation; and transplant center improvements. **Conclusion:** the developed model was based on Watson and Orem's theories and contemplated comprehensiveness, promotion of self-care and the role of nurses, as well as needs identified by patients.

Descriptors: Kidney Transplantation; Nursing Care; Healthcare Models; Kidney Failure, Chronic; Perioperative Nursing.

RESUMO

Objetivo: elaborar um modelo técnico-assistencial de enfermagem para pacientes de transplante renal. **Método:** desenvolvimento de modelo técnico-assistencial fundamentado nas teorias de Orem e Watson baseado na pesquisa convergente assistencial. O cenário foi um Centro Transplantador da região sul do Brasil. Coleta de dados - diagnóstico das atividades realizadas no serviço de transplante renal; entrevista semiestruturada com pacientes; e três grupos focais com enfermeiros. Participaram nove pacientes de transplante renal e dez enfermeiros que atuam nas fases do perioperatório. Utilizou-se análise de conteúdo. **Resultados:** categorias emergidas dos pacientes - expectativas do transplante renal; informação sobre o tratamento após transplante; mudança no estilo de vida após o adoecimento; importância do autocuidado; sentimentos envolvidos no transplante renal e melhorias do centro transplantador. **Conclusão:** o modelo desenvolvido foi fundamentado nas teorias de Watson e Orem contemplando integralidade, promoção do autocuidado e atuação do enfermeiro, bem como necessidades apontadas pelos pacientes.

Descritores: Transplante de Rim; Cuidados de Enfermagem; Modelos de Assistência à Saúde; Falência Renal Crônica; Enfermagem Perioperatória.

¹ Irmandade Santa Casa de Misericórdia de Porto Alegre (ISCOMPA). Porto Alegre, Rio Grande do Sul, Brasil. E-mails: kelenmayer@gmail.com, silysa@gmail.com.

² Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSA). Porto Alegre, Rio Grande do Sul, Brasil. E-mails: barujo24@gmail.com, ritac.ufcspa@gmail.com, carine.blatt@gmail.com.

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INTRODUCTION

In 2019, Brazil performed more than 23,000 transplants, consolidating itself in the world scenario of donation and transplants. The south of the country stands out for having 36.1 donors per million population (pmp), above the national average of 18.1 donors pmp⁽¹⁾.

Brazil presents excellent results, being the second country in the world in absolute numbers of kidney transplants, only behind the United States⁽²⁾. In 2019, 6,283 kidney transplants were performed in Brazil; 5,210 with deceased donors and 1,073 with living donors. In the same period in Rio Grande do Sul (RS), 491 kidney transplants were performed; 458 with deceased donors and 33 with living donors⁽²⁾.

Worldwide, the organ with the largest number of patients on the waiting list is the kidney, a reality also in Brazil, where more than 25,000 people were waiting for a kidney transplant in 2019. In the same period, the state of RS had a waiting list of 1,100 people for the same type of transplant⁽²⁾.

Choosing a model of care for patients is related to the knowledge and skills of professionals, as well as to the availability of human and economic resources in the institution⁽³⁾. Nursing plays an important role in perioperative care, and nurses are required to develop detailed and systematized care and act in all stages of this process⁽⁴⁻⁵⁾.

The conceptual foundation of this research were the theorists Dorothea Orem and Jean Watson. The first given the encouragement of self-care, as the transplant patient will remain in follow-up for life⁽⁶⁻⁷⁾. The second by the focus on

the integrality of human beings, considering body, mind and spirit⁽⁸⁾.

By acting as nurses in the Hospital Transplant Coordination, the lack of a systematized model of nursing care for kidney transplant patients was identified as a research problem. The fact that this model enables comprehensive care justifies the interest in developing a technical care model with the purpose of standardizing and optimizing nursing care, thereby favoring treatment adherence and success in graft implantation. Thus, the guiding question of the study was outlined: what should be considered in the development of a model of nursing technical care for patients in the perioperative period of kidney transplantation? This question led to the search for information, allowing for a diagnosis of the situation in order to reach the outlined objective - to develop a model of nursing technical care for kidney transplant patients.

METHODS

This is a convergent care qualitative research (CCR) that proposes innovative changes to the care practice associated with research⁽⁹⁾, allowing the coordination of professional practice with theoretical knowledge⁽¹⁰⁾. This research followed the five steps recommended by the CCR, namely: conception, instrumentation, scrutiny, analysis and theorizing⁽¹⁰⁾. Figure 1 presents the steps of the CCR and describes the steps taken in the study.

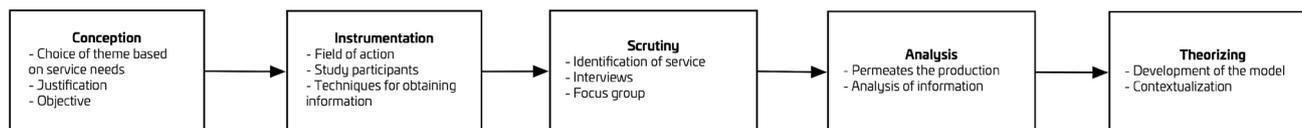


Figure 1. Steps of principal convergent care research analysis adapted from Trentini and Paim (2017). Porto Alegre, RS, Brazil, 2020.

In the conception, the area of interest, theme selection and objective were chosen, related to the researchers' daily practice and inquiries about the care process.

In instrumentation, we chose the field of action of a transplant center located in southern Brazil, considered a reference for transplants in Latin America. In 2019, 218 kidney transplants were performed, 300 patients were on the waiting list, and 2,500 patients were in follow-up treatment. In this step, participants were defined: renal transplant patients and nurses working in the perioperative period of this type of surgery. Exclusion criteria were patients unable to answer the interview questions and those under 18 years of age. Exclusion criteria for nurses were those on leave of absence or away from work for any other reason during the time of data collection.

The strategies for obtaining information for the development of the model of nursing technical care were: diagnosis of activities developed in transplant outpatient clinics and units that provide care to kidney transplant patients through field observation carried out by one of the researchers during patient care in the field of action; semi-structured interview with patients in follow-up treatment at the kidney transplant service, transplanted or on a waiting list; and a focus group (FG) with nurses who provide care to patients in the pre, intra and post-transplant periods.

In the scrutiny, the strategies for obtaining information allowed the convergence of research to care in an integrated manner. In the diagnosis of the service, an assessment of the profile of patients and processes and care routines of the department was performed, and the factors facilitating

and/or hindering their execution were identified in order to understand the functioning of the service and identify the main barriers faced by patients.

Semi-structured interviews with kidney transplant patients were performed in November and December 2018 to assess their understanding of the proposed treatment, i.e., their main doubts and fears regarding treatment. The choice of participants was intentional. An invitation was made on three different occasions within the perioperative period: preoperatively, while they were waiting for an appointment at the clinic; intraoperatively, in the transplant preparation room; and postoperatively, in the inpatient unit. At the time of the invitation, the purpose of the study was explained and doubts were clarified. Those who agreed to participate signed the Informed Consent form. Participants were identified by the nomenclature PRE, INTRA and POST, followed by the number corresponding to the order in which interviews were performed. The interview script was organized into: 1) sociodemographic data of participants; and 2) issues related to transplant expectations; care before, during and after transplantation; doubts regarding care; and suggestion for improvements in the service.

For the FG, nurses were initially selected by face-to-face invitation to supervisors of the units involved, who suggested nurses from their teams. The clinical nurses appointed and the hospital's nursing coordinator received an official invitation. Participants were identified by the acronym NUR, followed by a number according to the order of participation in the group. The FGs occurred during three meetings in November and December 2018.

The analysis step permeated the entire data production process and was developed together with the scrutiny step. Both analyzes (interviews and FG) were performed manually using Bardin⁽¹¹⁾ as a theoretical framework. After transcribing the interviews and the FG, the analysis began by reading and rereading the transcribed content, identifying the record units and grouping them in maps by thematic similarities.

In theorizing, the information transfer process was developed in association with the study results and the theoretical framework of Dorothea Orem and Jean Watson for developing the model of technical care to be used in the institution.

The study was submitted to the Research Ethics Committee (REC) of the institution and approved under opinion number 2.830.483. Ethical principles were in accordance with resolutions number 466 and 510⁽¹²⁻¹³⁾.

RESULTS

The results refer to the last three steps of CCR; scrutiny, analysis and theorizing of data.

The model of nursing technical care was developed based on the theories of Orem and Watson, contemplating comprehensiveness, self-care promotion and the role of nurses based on the needs evidenced in the diagnosis of the kidney transplant service; on data collected in interviews with renal transplant patients cared for in the service; and on data collected in FGs carried out with nurses who provided care to these patients during the perioperative period, as presented below.

Diagnosis of the kidney transplant service

At this step, the flow of patient care from arrival at the service until discharge, the professionals who provide care in outpatient clinics and the role of nurses in all steps of transplantation were identified, and facilitating and hindering factors in the execution of care were determined.

The profile of patients on the waiting list was highlighted: 51% (n=196) male; predominant age group, 43% (n=166) between 31 and 50 years. A considerable quantity of patients was awaiting retransplantation, 29% (n=113), with the main diseases being diabetes mellitus (DM), systemic arterial hypertension (SAH) and glomerulonephritis.

The kidney transplant team is composed of: two medical coordinators; ten nephrologists; a psychiatrist; a social worker; a pharmacist; a nurse (part time); ten nursing technicians.

When the patient is referred to the institution's kidney transplant program, a thorough evaluation is necessary to determine the inclusion or not on the waiting list. This assessment is done through consultation with a nephrologist, laboratory and imaging exams, consultation with a nurse, social worker and psychiatrist. After evaluation by the multidisciplinary team, the patient may be included on the transplant waiting list, returning to the outpatient clinic every six months for a nephrologist consultation, and every two months in the laboratory for cross-matching tests for compatibility.

Semi-structured interviews with patients

At this step, patients were divided into three groups: pre-transplant, intraoperative period and post-transplant. As for socio-demographic profile: five male subjects; age group between 44 and 65 years old; level of education between incomplete primary education and complete higher education. The waiting time for transplantation ranged from one month to two years and six months. Previous diseases: six with SAH (66%), three with DM (33%) and three with polycystic kidney (33%).

After transcription and analysis of the interviews, 270 record units were identified, grouped by thematic similarities, which resulted in six final categories: expectations of kidney transplantation; information about treatment after transplantation; lifestyle changes after illness; importance

of self-care; feelings involved in kidney transplantation; and transplant center improvements.

In the **“expectations of kidney transplantation”**, participants explained their expectations, highlighting the waiting for the organ, the possibility of leaving the dialysis machine and return to make plans with the family, as reported in the speech:

Improve my life and take back the reins of my life, work, college, study, family, it is my dream, it is my goal in life, to take back the reins of my life, exactly. (PRE 3)

In the **“information about treatment after transplantation”**, patients demonstrated lack of knowledge about kidney transplantation. Some experience a lack of information regarding care and treatments, which generates fears, insecurity and difficulty in adapting to a new life, as mentioned in the statements:

The biggest problem is misinformation [...] I don't know anything, unfortunately. (PRE 1) [...] I don't know, but she [physician] said that when I am discharged, she will tell me what I need to take care of. (POST 3)

In **“lifestyle changes after illness”**, the impact of changes after illness is highlighted. Generally, the patient affected by Chronic Kidney Disease (CKD) has little or no symptoms in the early stages of the disease. When diagnosed, the kidney is already compromised, which demands an abrupt change in lifestyle. A testimony stands out:

I think this hemodialysis process renews your life values, even though I'm from the area and I know [...] I ended up doing it wrong, because I was eating wrong, I slept poorly, I self-medicated, I did some silly things. (PRE 3)

The **“importance of self-care”** reflects patients' ways of caring for themselves, becoming their own responsibility and not only the health team's responsibility. This perception is related to more chances of success in recovery, as observed in the speech:

It's useless to have the transplant and throw myself now because I'm fine, the kidney is something that depends a lot on us. There are people who undergo transplantation and it lasts a year, two years, my care is permanent, I won't throw myself into anything, I know it's difficult, you have to take care of yourself. (PRE 2)

In **“feelings involved in kidney transplantation”**, multiple feelings were found, such as anxiety about not knowing when it will be your turn to undergo transplantation

and whether you will get a compatible donor. At the same time, uncertainty about the success of the transplant, social isolation and family abandonment, as expressed:

I have ten brothers with me, when I got sick, everyone was terrified, taking tests to give me the kidney, the physician told me, this is excitement, everyone is terrified to give you the kidney, and he was right, it's been all these years and none has come to my house to pay me a visit. (INTRA 2)

In **“transplant center improvements”**, patients talked about the professionals involved in care and possible improvements to the service. After the transplant, patients must remain under constant monitoring and have to feel safe and confident in relation to the team, as they say:

[...] from the functional part, I guess more training for the team, like, there are wonderful people, but there are many people who are really raw. (PRE 3)

[...] regarding the approximation of the surgery, in the first moments, being with the closest family would make all the difference to me. (POST 2)

Focus group with nurses

Three FG sessions lasting between an hour and a half to two hours were held. They included integration between nurses, exchange of knowledge, reports of the difficulties faced in relation to the care provided, and definition of the skills of each nurse for care provision to kidney transplant patients.

The profile of participants showed eight females (80%); age group between 28 and 46 years old; training time between two and 17 years; eight had specializations; five completed more than one specialization course; two held a master's degree and two were master's students; one had a PhD degree, another was a PhD student. The length of experience in the area of kidney transplantation ranged from two months to 10 years.

In the first FG, we noticed that professionals did not know each other and were unaware of the care provided in the other phases of care, as reported:

When the patient is in the ICU, I do not know the nurse's orientation. Will you talk to the patient? Will you guide the aspect of entry and exit? Also in the room, when they arrive with the patient, before entering the room, are these family members required to wash their hands on their way in and out? (NUR 3)

Table 1. Participants, activities and duration of focus groups with the nursing staff involved in the development of the technical care model for kidney transplant patients. Porto Alegre, RS, Brazil.

Focus Group	Meeting 1	Meeting 2	Meeting 3
Date	23/11/2018	30/11/2018	07/11/2018
Duration (minutes)	120	90	105
Participants (n)	10	8	9
Performed activities	Presentation of the study; Presentation of Nursing Theories; Signature of the consent form; Presentation of participants; Beginning of the construction of the technical care model.	Synthesis of the first FG; Presentation of some interviews performed with patients; Evaluation of the material built in the first FG.	Synthesis of the second FG; evaluation of the material built in the second FG; Presentation of the technical care model.
Answered questions	What information should the transplant patient receive in pre-, intra- and post-transplant periods in the institution?	What possible barriers to access the institution's transplant center may be faced by patients? By which professionals should the patient be seen? How is the Nurse's care at each step in the pre, intra and post-transplant periods in the institution?	Evaluate the construction of the suggested model of technical care, identifying non-conformities and suggesting what one deems necessary.

A group discussion was developed, encouraging nurses to list information about patients in the pre, intra and postoperative periods. It was found that some guidelines were given repeatedly at different times and information was lacking, because they believed that it had already been given.

In the second FG, some excerpts from patients' interviews were presented for the group's reflection and debate, emphasizing the relevance of their role in the contribution to patients' treatment, recalling some situations experienced in their work units. The group unanimously discussed that patients and family members should receive information about the transplant and the necessary care at different times while they are in the institution, such as in the waiting room, inpatient unit and others, not only during consultations at the clinic.

They go to a certain floor to undergo collection, perhaps guide the professional in that place and leave some information so this professional can reinforce at the time of collection. Or create educational material and leave it in these places, in these waiting rooms where they circulate. (NUR 7)

In this meeting, nurses could suggest ways to conduct care with kidney transplant patients. This was only possible after they learnt about the performance of their colleagues in each

step of the process, meeting the needs reported by patients themselves. This allowed us to design a flow of nursing care for pre, intra and post-renal transplant patients, illustrated in Figure 2.

In the third FG, the group reviewed all the considerations made so far, using the notes made since the first meeting, which made it possible to view and change information between all steps. A lack of standardization of care was evident in a specialized area that demands constant updating from professionals, as well as knowledge of the other processes involved.

There is a lack of standardization, we work at the same institution, but each one does it differently. (NUR2)

The completion of the FG along with the other steps of the study was essential for the development of the model of technical care based on the literature and nursing theories of Oren and Watson, shown in Figure 3.

As shown in Figure 3, the developed model was structured in three pillars. The first pillar means the departments where the patient transits in the institution. The second corresponds to activities to be performed by nurses in the care for patients in the respective department. The latter corresponds to the

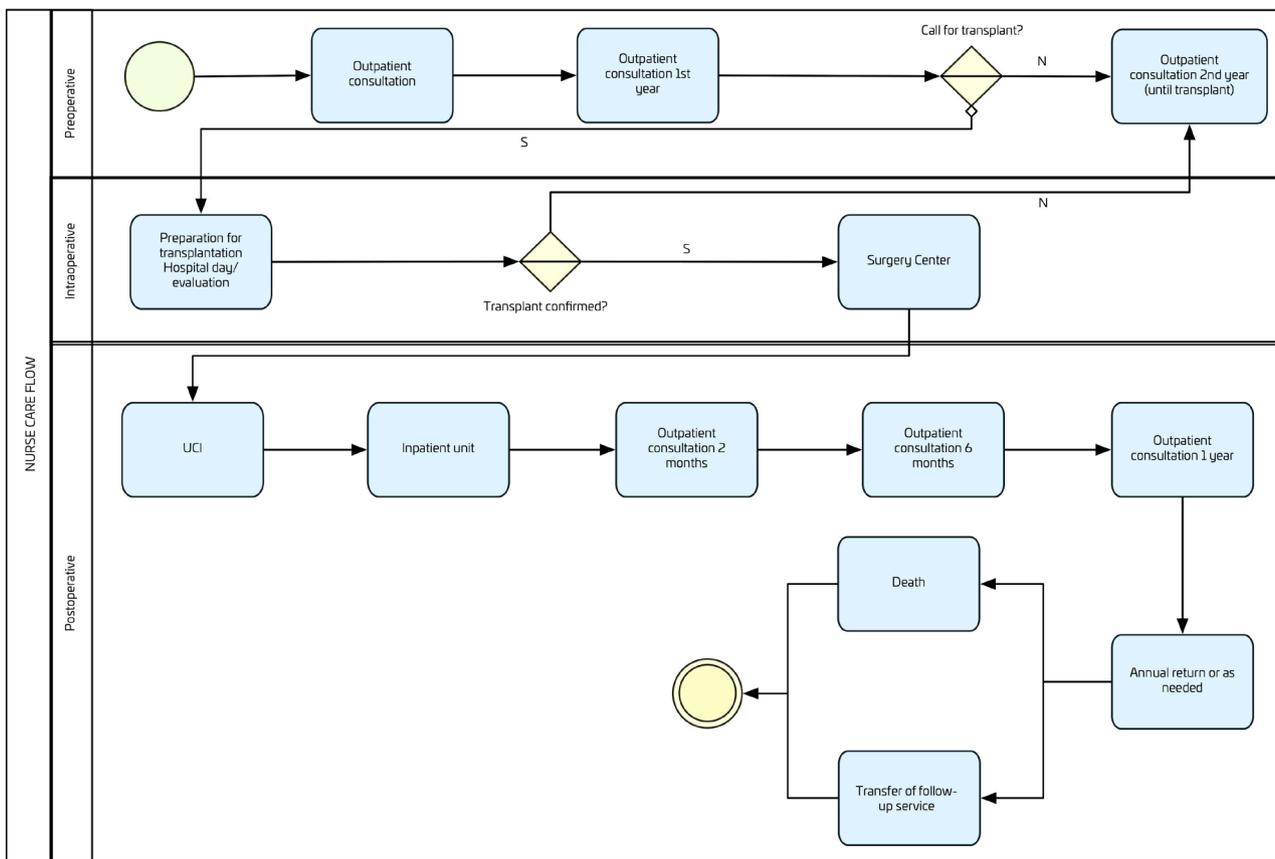


Figure 2. Flowchart of nursing care for kidney transplant patients at the institution studied. Porto Alegre, RS, Brazil, 2020.

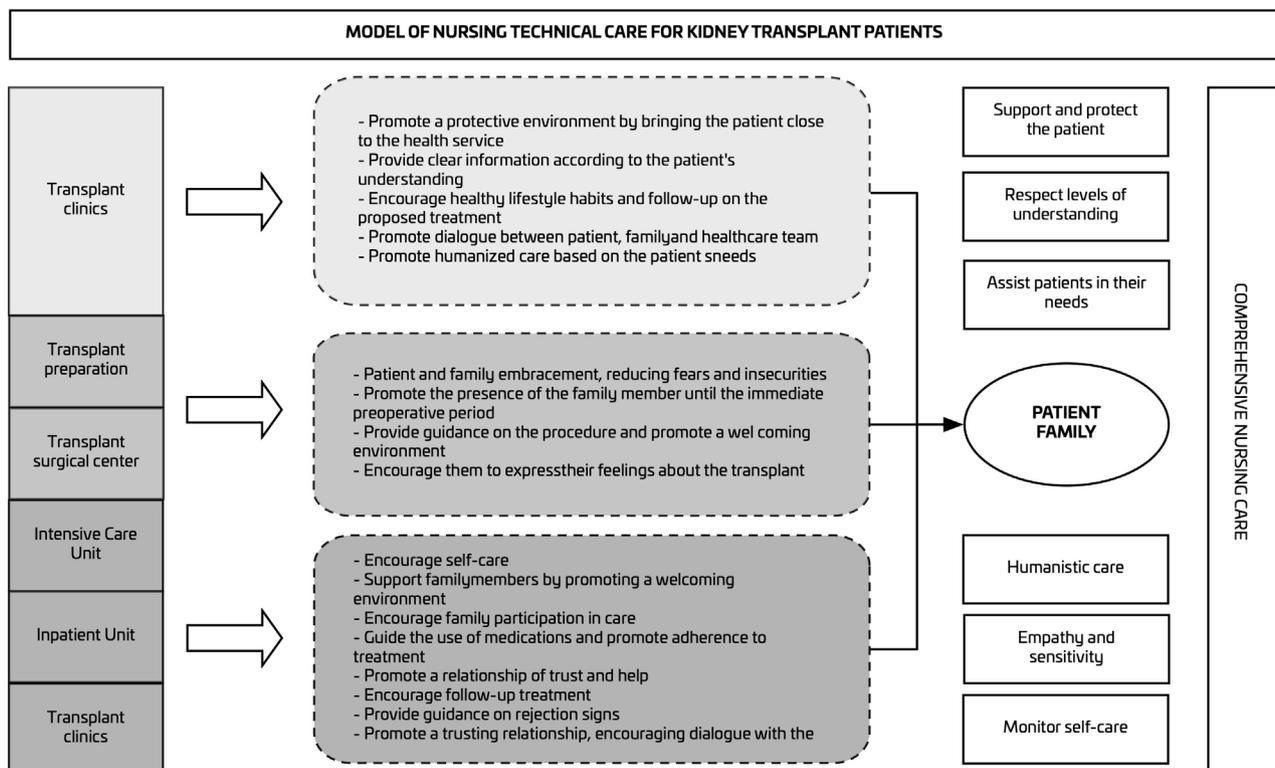


Figure 3. Model of nursing technical care for kidney transplant patients. Porto Alegre, RS, Brazil, 2020.

premises of the two chosen theories that supported the model and should guide patient care in the different departments.

DISCUSSION

Models of nursing care can be defined as a way of organizing the technologies and materials used in work processes, aiming at facing individual and collective problems in order to bring theory and practice closer together and meet the identified health needs⁽⁹⁾. By using the CCR methodology, it was possible to combine science with improvements in care practice needed for the evolution of care. Likewise, the choice of theoretical foundation directed to self-care with a focus on human beings and their comprehensiveness strengthens the proposed model with quality and humanized care. It emphasizes the importance of nursing in the constant search for qualified care and the nurse as a professional in the multidisciplinary team with technical knowledge based on nursing theories.

The steps of the study allowed to evidence a high number of patients awaiting a retransplantation. In a study⁽¹⁴⁾ conducted in a post-renal transplant outpatient clinic, 41.4% of patients did not adhere to immunosuppressive therapy. In such a scenario, nursing should act in the assessment and guidance of adherence throughout care provision.

A positive aspect identified was that patient care was provided by a greater multidisciplinary team than that required in the technical regulation of the National Transplant System⁽¹⁵⁾. The non-exclusive nature of nurses for kidney transplantation affects their availability to dedicate themselves to this care. A study⁽¹⁶⁾ conducted in the southeast of Brazil highlighted the role of nurses in the steps of transplant and care of patients and family members, highlighting the pre-transplant as a key moment to work on educational actions by solving doubts, reducing anxiety and strengthening the commitment to adherence to treatment, essential for its effectiveness.

From the categories that emerged from interviews with patients, the similarity in expectations regarding transplantation stands out. Thus, health education is essential to fill the lack of information, demystify beliefs and emphasize the importance of treatment. In a study⁽¹⁷⁾, the patient undergoing a transplantation process goes through a phase of freedom and improvement in the quality of life, reinforcing the relevance of nurses' role for the convergence of efforts in adapting to life changes and self-care.

Dialogue and reflection with nurses in the FG made it possible to identify the lack of standardization of nursing care and define the tasks in each step of the process, aspects that require the implementation of models and care protocols. This information corroborates data from another study⁽¹⁸⁾

that evidenced the lack of protocols for health education and of standardization of nursing care in renal transplantation.

The development of the model of technical care enables a conception of standardized and organized care, contemplating a perspective of comprehensiveness and health needs. The development of care models transposes political and social aspects, breaking biomedical perspectives and considering the dynamism of health processes, such as interpersonal relationships and the humanization of care⁽¹⁹⁾. A technical model allows the performance of care conducts and the service organization to meet this process⁽¹⁹⁾.

The model based on self-care and comprehensiveness and supported by nursing theories allows expanding the co-responsibilities of the care process for the transplant patient with a focus on autonomy and quality of care. For Orem^(8,20), self-care is a central and indispensable aspect for human survival. In a time of need, nurses should act by developing health education and encouraging individuals to take care of themselves. To this end, Watson's theory⁽²¹⁻²²⁾, as a philosophical and ethical model, emphasizes that health care transcends the disease itself, promoting the understanding of each individual's subjectivity and experience.

CONCLUSION

A model of nursing technical care for kidney transplant patients was developed based on the diagnosis of the existing care process, on information collected about essential care, and on expectations and needs of patients and nurses. The model was based on the theories of Orem and Watson directed to patient self-care with a focus on comprehensiveness, strengthening the role of nurses as professionals in the multidisciplinary team responsible for the education of patients and family members, contemplating comprehensive, humanized and quality care. Its care flow will allow that patients better understand the steps involved in transplantation.

As limitations of this study, the product developed requires validation by experts and evaluation of its implementation in renal transplantation services.

REFERENCES

1. Associação Brasileira de Transplante de Órgãos. Dados numéricos da doação de órgãos e transplantes realizados por estado e instituição no período: janeiro / setembro - 2019 [Internet]. São Paulo: ABTO; 2019 [cited 2022 jan 18]. Available from: <https://site.abto.org.br/publicacao/ano-xxv-num-3-jan-set-de-2019/>.
2. Associação Brasileira de Transplante de Órgãos. Dimensionamento dos transplantes no Brasil e em cada estado (2012-2019) [Internet]. São Paulo: ABTO; 2019

- [cited 2022 jan 18]. Available from: <http://www.abto.org.br/abtov03/Upload/file/RBT/2019/RBT-2019-leitura.pdf>.
3. Lima MB. Modelo assistencial de enfermagem primária: uma análise por Miss Care-Brasil [dissertation]. [Teresina (PI)]: Universidade Federal do Piauí; 2017 ; [cited 2022 jan 18]. Available from: <http://hdl.handle.net/123456789/1020>.
 4. Pimentel MRS, Cavalcante GF, Pimentel RRS. Desempenho do enfermeiro no processo de doação e transplante de órgãos e tecidos. Revista Eletrônica Acervo Saúde [Internet]. 2021 [cited 2022 jan 18];13(3):e6438. Available from: <https://doi.org/10.25248/reas.e6438.2021>.
 5. Ferreira SAMN, Teixeira MLO, Branco EMSC. Relação dialógica com o cliente sobre transplante renal: cuidado educativo de enfermagem. Cogitare Enferm [Internet]. 2018 [cited 2022 jan 18];23(1):e52217. Disponível em: <https://doi.org/10.5380/ce.v23i1.52217>.
 6. Silva RR, Carlos JF, Vieira MJO, Sousa JGS, Silva IC, Pereira RS, et al. As teorias de enfermagem de Roy e Orem Intrínsecas à sistematização da assistência de enfermagem para promoção da saúde. Brazilian Journal of Development [Internet]. 2020 [cited 2022 jan 18];6(7):52049-59. Available from: <https://doi.org/10.34117/bjdv6n7-741>.
 7. Brandão MAG, Barros ALBL, Primo CC, Bispo GS, Lopes ROP. Nursing theories in the conceptual expansion of good practices in nursing. Rev. Bras. Enferm. [Internet]. 2019 [cited 2022 jan 18];72(2):577-81. Available from: <https://doi.org/10.1590/0034-7167-2018-0395>.
 8. Santos BP, Sá FM, Pessan JE, Criveralo LR, Bergamo LN, VCS, et al. The training and praxis of the nurse in the light of nursing theories. Rev. Bras. Enferm. [Internet]. 2019 [cited 2022 jan 18];72(2):566-70. Available from: <https://doi.org/10.1590/0034-7167-2018-0394>.
 9. Trentini M, Paim L, Silva DMGV. O método da pesquisa convergente assistencial e sua aplicação na prática de enfermagem. Texto contexto - enferm [Internet]. 2017 [cited 2022 jan 18];26(4):e1450017. Available from: <https://doi.org/10.1590/0104-07072017001450017>.
 10. Trentini M, Paim L, Silva DMGV. A convergência de concepções e práticas de saúde: uma reconquista da Pesquisa Convergente Assistencial. Porto Alegre: Moriá; 2017.
 11. Bardin, L. Análise de conteúdo. São Paulo: Edições 70; 2016.
 12. Ministério da Saúde, Conselho Nacional de Saúde. Resolução Nº 466, de 12 de dezembro de 2012. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos [Internet]. Diário Oficial da União. 13 jun. 2013 [cited 2022 jan 18]. Available from: http://bvsm.sau.gov.br/bvs/sau/legis/cns/2013/res0466_12_12_2012.html.
 13. Ministério da Saúde, Conselho Nacional de Saúde. Resolução Nº 510, de 07 de abril de 2016 [Internet]. Diário Oficial da União. 24 mai. 2016 [cited 2022 jan 18]. Available from: https://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/22917581.
 14. Leite RF, Silva ACM, Oliveira PV, Silva LMG, Pestana JMA, Schirmer J, et al. Mensuração da adesão aos medicamentos imunossupressores em receptores de transplante renal. Acta Paul Enferm [Internet]. 2018 [cited 2022 jan 18];31(5):489-96. Available from: <https://doi.org/10.1590/1982-0194201800069>.
 15. Ministério da Saúde. Portaria nº 2.600, de 21 de outubro de 2009. Aprova o Regulamento Técnico do Sistema Nacional de Transplantes [Internet]. Diário Oficial da União. 30 out. 2009 [acesso em: 16 out. 2020]. Disponível em: http://bvsm.sau.gov.br/bvs/sau/legis/gm/2009/prt2600_21_10_2009.html.
 16. Cunha TGS, Lemos KC. Assistência de enfermagem às fases do transplante renal: uma revisão integrativa. Health Residencies Journal [Internet]. 2020 [cited 2022 jan 18];1(8). Available from: <https://doi.org/10.51723/hrj.v1i8.143>.
 17. Ribeiro MNS, Santo FHE, Simões BS, Diniz CX, Bezerra HCA, Santos L. Feelings, experiences and expectations of kidney transplant individuals and challenges for the nurse. Rev. Bras. Enferm. [Internet]. 2021 [cited 2022 jan 18];74(1):e20200392. Available from: <https://doi.org/10.1590/0034-7167-2020-0392>.
 18. Santana RS, Silva FJA, Santos JS, Batista CA, Frota CA, Morais MJA, et al. Nursing care to patients in postoperative renal transplant. Revista Prevenção em Infecção e Saúde [Internet]. 2019 [cited 2022 jan 18];5:9064. Available from: <https://doi.org/10.26694/repis.v5i0.9064>.
 19. Campos KFC, Marques RC, Ceccim RB, Silva KL. Educação permanente em saúde e modelo assistencial: correlações no cotidiano do serviço na Atenção Primária a Saúde. APS em Revista [Internet]. 2019 [cited 2022 jan 18];1(2):132-40. Available from: <https://doi.org/10.14295/aps.v1i2.28>.
 20. Ribeiro OMPL, Trindade LL, Silva JMAV, Faria ACA. Prática profissional no contexto hospitalar: visão de enfermeiros sobre contribuições das concepções de Dorothea Orem. Revista de Enfermagem da UFSM [Internet]. 2021 [cited 2022 jan 18];11:e28. Available from: <https://doi.org/10.5902/2179769254723>.
 21. Fantin M, Buzzacaro E, Aguiar DCM, Zenevicz LT, Moser GAS, Souza S. Patients' perception in hospital environment: a look at nursing care in perioperative

period based on Jean Watson conceptions. Scientific Electronic Archives [Internet]. 2019 [cited 2022 jan 18];12(6):102-9. Available from: <https://doi.org/10.36560/1262019937>.

22. Caring Science & Theory - Watson Caring Science Institute [Internet]. Boulder: Watson Caring Science Institute; c2022. The Theory of Human Caring. History & Evolution; [cited 2022 jan 18]. Available from: <https://www.watsoncaringscience.org/jean-bio/caring-science-theory/#theory>.

