Rev Rene. 2024;25:e93917.
DOI: 10.15253/2175-6783.20242593917
www.periodicos.ufc.br/rene

Original Article

Experiences of patients undergoing hemodialysis treatment during the COVID-19 pandemic

Vivências de pacientes em tratamento hemodialítico frente à pandemia da COVID-19

How to cite this article:
Costa LS, Santos ECB, Galindo Neto NM, Silva CRDT, Sá GGM, Silva MVB, et al. Experiences of patients undergoing hemodialysis treatment during the COVID-19 pandemic. Rev Rene. 2024;25:e93917. DOI: https://doi.org/10.15253/2175-6783.20242593917

Leonardo Silva da Costa[1]
Ellen Cristina Barbosa dos Santos[1]
Nelson Miguel Galindo Neto[2]
Cynthia Roberta Dias Torres Silva[3]
Guilherme Guarino de Moura Sá[2]
Matheus Vinicius Barbosa da Silva[1]
Juliana Lourenço de Araújo Veras[1]

[1]Universidade Federal de Pernambuco. Recife, PE, Brazil.
[2]Instituo Federal de Educação, Ciência e Tecnologia de Pernambuco. Pesqueira, PE, Brazil.
[3]Instituto Federal de Educação, Ciência e Tecnologia do Piauí. Teresina, PI, Brazil.

Corresponding author:
Matheus Vinicius Barbosa da Silva
Rua Princesa Isabel, CEP: 55604-360.
Vitória, PE, Brazil.
E-mail: enfmatheusvinicius@outlook.com

Conflict of interest: the authors have declared that there is no conflict of interest.

ABSTRACT

Objective: to reveal the experiences of patients undergoing hemodialysis treatment during the COVID-19 pandemic. **Methods:** this is a qualitative study conducted with 18 patients undergoing hemodialysis treatment, from the perspective of the Chronic Conditions Care Model. Data collection was performed through semi-structured interviews, the content was recorded and processed using the *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* software. **Results:** six classes emerged from the statements which addressed the following: challenges in building a new life routine; the fear of self-contagion and the family; mental suffering due to clinical vulnerability in facing the pandemic scenario; strategies for preventing COVID-19; the impacts of the immunization process against COVID-19; and the negative aspects of the experience of hemodialysis treatment during the pandemic. **Conclusion:** the experiences were permeated by challenges, especially in aspects related to mental health. **Contributions to practice:** this study provides an opportunity for applying targeted actions with a view to proposing contributions for planning nursing care aimed at patients undergoing hemodialysis treatment in possible future pandemic periods.

Descriptors: Nursing; Renal Dialysis; Coronavirus Infections; Pandemics.

RESUMO

Objetivo: desvelar as vivências de pacientes em tratamento hemodialítico frente à pandemia da COVID-19. **Métodos:** estudo qualitativo, realizado com 18 pacientes em tratamento hemodialítico, sob a ótica do Modelo de Atenção às Condições Crônicas. A coleta foi realizada por meio de entrevista semiestruturada, o conteúdo foi gravado e processado por meio do *software Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*. **Resultados:** emergiram das falas seis classes, que abordaram os desafios na construção de uma nova rotina de vida; o medo do autocontágio e a família; o sofrimento mental, pela vulnerabilidade clínica, frente ao cenário pandêmico; as estratégias para prevenção da COVID-19; os impactos do processo de imunização contra a COVID-19; e os aspectos negativos na vivência do tratamento hemodialítico frente à pandemia. **Conclusão:** as vivências estiveram permeadas por desafios, sobretudo em aspectos relacionados à saúde mental. **Contribuições para a prática:** este estudo oportuniza a aplicação de ações direcionadas, com vistas a propor contribuições para o planejamento do cuidado de enfermagem voltado aos pacientes em tratamento hemodialítico em possíveis futuros períodos pandêmicos.

Descritores: Enfermagem; Diálise Renal; Infecções por Coronavírus; Pandemias.

Received: Aug. 9th 2024; Accepted: Oct. 2nd 2024.

Introduction

Chronic Kidney Disease (CKD) consists of the progressive and irreversible loss of kidney function to the point of causing irreversible damage to the patient, which leads to dialysis treatment[1]. Brazil has the third largest population undergoing dialysis treatment, so that the number of patients undergoing chronic hemodialysis treatment showed an exponential increase between 2005 and 2019, from 65,129 to 139,691 affected individuals. Estimates indicate that the number of patients undergoing chronic dialysis is expected to continue to grow in the coming years[1-2].

Peritoneal dialysis, kidney transplantation and hemodialysis stand out among the therapeutic modalities aimed at CKD, with the latter being used in 92.3% of treated patients[3] given the need for dialysis treatment to maintain the lives of CKD patients. In view of the pandemic scenario, it was observed that they present extra risk factors for coronavirus disease 2019 (COVID-19)[4]. Most of them are older adults with high blood pressure, diabetes mellitus, previous heart disease and other complications of inflammatory origin secondary to the accumulation of metabolites[3-5].

In this sense, it is important to note that healthcare aimed at this public is based on the premises of the Chronic Conditions Care Model, whose self-management strategies involve self-care supported by healthcare professionals, especially in the face of the COVID-19 pandemic scenario in which multiple challenges arose, in addition to the adversities which may emerge in the post-pandemic context[6].

Such a scenario represented a great challenge for people with CKD, as well as for their families and caregivers. The need to travel for periodic hemodialysis sessions conflicted with the recommendation of social isolation, which aimed to reduce the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)[7].

In this context, it was observed that the pandemic could interfere with and alter subjective aspects, such as feelings and impressions in the experience of hemodialysis patients. Such aspects are relevant for scientific research, as they can support restructuring organizational and care processes during and after the pandemic period in order to consider extraclinical peculiarities, which go beyond the demands of renal support treatment that the patient requires[8].

From this perspective, it is essential to understand mental suffering as a complex phenomenon, resulting from a combination of biopsychosocial factors. It manifests itself differently among individuals and significantly impacts people's quality of life, although it does not characterize a mental disorder[9].

Therefore, as important care providers in the context of hemodialysis, nursing professionals are committed to meeting the patient's diverse needs, as well as developing empathetic personal relationships that provide harmony and safety in this experience[10]. Thus, scientific evidence on the experiences of hemodialysis patients during the pandemic can help collect data, plan and implement nursing interventions which support qualified care and advance nursing practice in nephrology, guided by knowledge and recognition of the difficulties faced by hemodialysis patients that go beyond merely clinical aspects. Since the experiences of these patients during the pandemic are unique and still little explored, understanding them is essential to improve care and create more effective public policies in times of crisis.

In view of the above, the present study aimed to reveal the experiences of patients undergoing hemodialysis treatment during the COVID-19 pandemic.

Methods

Study type and location

This is a qualitative study conducted following the recommendations of the Consolidated Criteria for Reporting Qualitative Research (COREQ). It was developed in a large public hospital, a reference for hemodialysis treatment in the city of Recife, PE, Brazil. Data were collected during the month of May, 2022.

Study population and participants

The study population consisted of people with CKD who were undergoing hemodialysis during the COVID-19 pandemic. The sample consisted of 70 participants. Of these, 18 people were invited to participate in the study, receiving explanations regarding its objective and voluntary participation. After agreeing by signing the informed consent form, they were selected and interviewed. Thus, the sample was based on convenience, followed the predefined selection criteria and was closed after data saturation[11]. It should be noted that the data collection was performed in a private environment.

Selection criteria

The inclusion criteria were having a diagnosis of chronic kidney disease for at least six months and being on hemodialysis treatment in the dialysis unit for the same period. It was defined that patients with an inability to communicate verbally would be excluded.

Data collection instrument

For data collection, a semi-structured script was used to characterize the subjects consisting of sociodemographic and clinical questions related to chronic kidney disease and contagion/immunization with regard to COVID-19. The following guiding questions were also used: How have you experienced the COVID-19 pandemic? And How have you experienced hemodialysis treatment during the COVID-19 pandemic?

Data collection

Data collection was conducted in person according to the days and times of the patients' hemodialysis sessions, after prior agreement regarding their availability. The interviews were conducted individually, in a reserved area within the service itself. Each interview lasted approximately 30 minutes.

Data treatment and analysis

The audio-recorded content was transcribed in full, and the text resulting from the transcription composed the textual corpus processed in the software Interface de *R pour lês Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ) 0.7 Alfa 2.3.3.1. A multivariate analysis was performed following the Descending Hierarchical Classification, with the segments grouped, using the chi-square test, into groups called "classes", presented visually as a dendrogram in order to demonstrate a relationship between the classes and the words that compose them.

The compatibility of the corpus processing in IRAMUTEQ was corroborated by the fact that the text had 1,595 forms distributed in 9,186 occurrences, for which the utilization was 88.39%.

The Chronic Care Model (CCM) was used as a conceptual basis for this study, described in the Guidelines for the Care of People with Chronic Diseases in the Healthcare Network and in the Priority Care Lines[12].

Ethical aspects

All participants signed the Informed Consent Form after being informed about the objectives, benefits and risks of the research. It was decided to replace the names with the letter I (interviewee), followed by numbers randomly assigned to the participants to protect their identities.

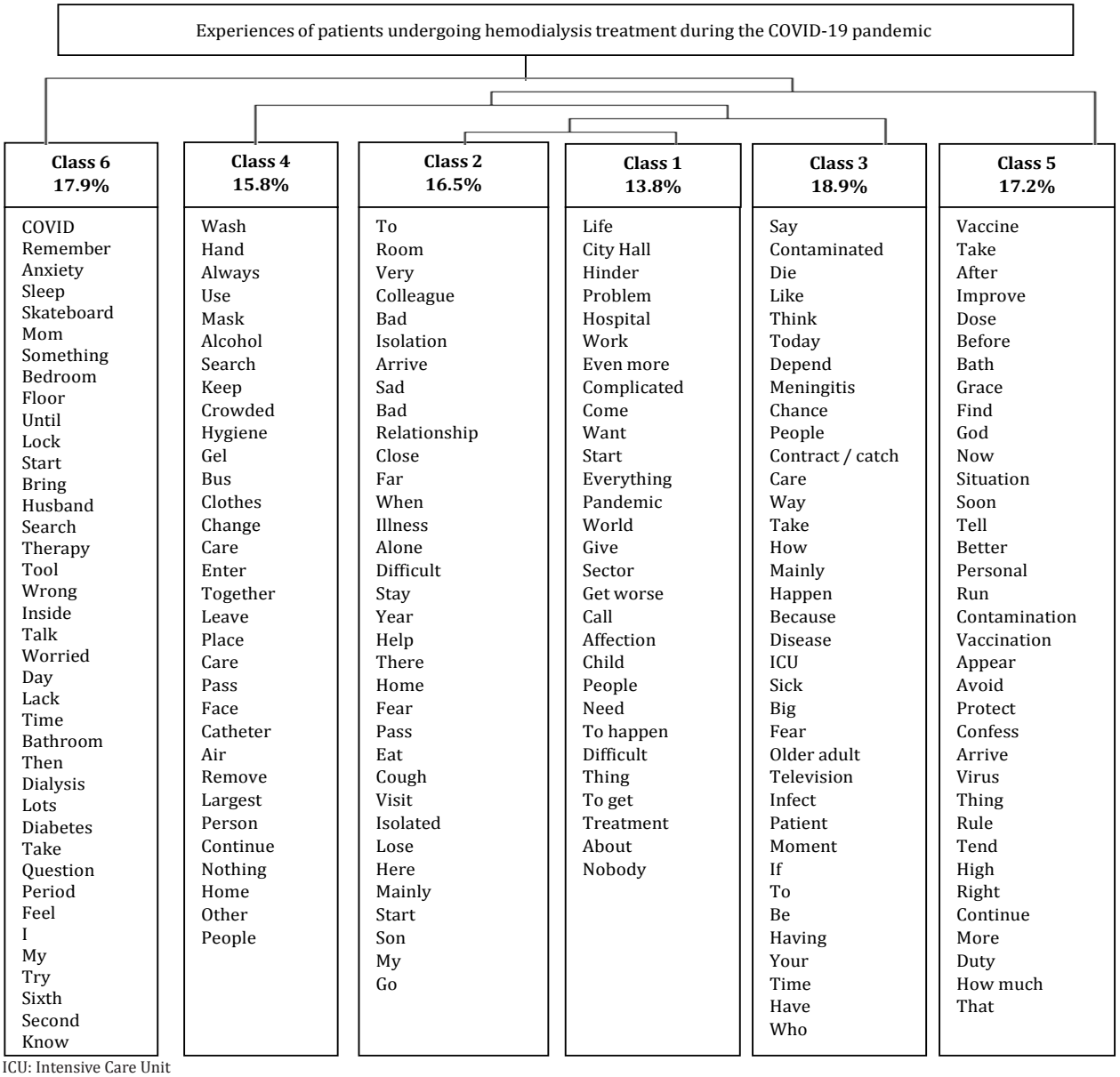
The study was approved by the Research Ethics Committee of the Academic Center of Vitória the Federal University of Pernambuco under a Certificate of Submission for Ethical Assessment no. 55361721.0.0000.9430 and opinion no. 5.364.378/2021.

Results

Of the 18 subjects, 10 were women. Nine were between 50 and 69 years old, two were ≥70 years old, and the others were between 30 and 49 years old. The majority declared themselves to be brown, with incomplete elementary education, with some religious belief, but not practicing a specific religion.

Ten were married and lived with their spouse and/or children, six lived with children, and only two lived with a caregiver and/or other family members. Family income ranged from one to two minimum monthly salaries. Moreover, 11 had presented a positive result regarding their history of testing for SARS--CoV-2. Finally, all study subjects had been vaccinated with at least three doses for immunization against COVID-19.

IRAMUTEQ grouped the textual corpus into 336 segments, resulting in six classes, shown in Figure 1.



ICU: Intensive Care Unit

Figure 1 – Dendrogram of word classes about the experiences of patients undergoing hemodialysis treatment facing COVID-19. Recife, PE, Brazil, 2024

Class 1: Challenges in building a new life routine due to the pandemic scenario

In class 1, comprising 13.8% of the corpus, it is observed that the patients' experience was permeated by adherence to a new routine of work and family life outside the home. Patients reported difficulties in managing the clinical condition of CKD associated with the pandemic, as can be seen in the following statements: *It changed my life in general, as a whole, you have to be more careful, all types of contact ended* (I9). *Managing the kidney problem that you have together with the pandemic, everything became difficult* (I11).

It is also noted that they experienced an exacerbation of concerns and some panic situations with the advent of the pandemic. It is observed in the statements that there was a need for new adaptation and coping to follow the imposition of social isolation: *We were all careful and here at the hospital in a sector practically stuck with the COVID staff, it was very complicated to manage this* (I11). *Speaking of adapting, the pandemic came to teach me how to get used to yet another new reality. At first, it was a huge panic, I even contracted COVID and I felt very ill* (I17). *I still haven't gotten used to this treatment. With it came other problems. We feel weak, we feel like we're going to die when we get sick on the machine. It's a very bad feeling. Then the pandemic came and things only got worse* (I7).

Class 2: Fear of self-contagion and the family

Class 2, with 16.5% of the words, was related to the fear of self-contagion. Feelings of fear and worry were reported, often followed by crying at the possibility of becoming infected, or infecting family members with SARS-CoV-2, as can be seen in the following statements: *It was a very difficult period, I spent a lot of time isolated, unable to see my children and grandchildren, I didn't want anyone to get close to me so as not to harm myself or anyone else... so we followed, let's say, this isolation diet, today we wear a mask when we go out on the street, when we go to treatment* (I5). *I was very afraid that my daughters would catch and be infected with this Covid, I was very worried, especially because here, the Covid sector was on the same floor as the hemodialysis and we watched everything happen and just prayed to God to deliver us* (I6).

Participants expressed feelings of loneliness related to the need for social distancing imposed during the pandemic, which seems to have intensified their suffering: *You feel very sad about not being able to be close to your classmates, not being able to hug or shake hands, all of that was cut off... But I don't discriminate against the people who distanced themselves from us, they were taking precautions for themselves and for us too, since we are kidney patients with low immunity* (I9). *The experience of undergoing hemodialysis separately from all my colleagues was very bad, although the nursing technicians and nurses helped me a lot, always being attentive to me, always wearing special protective clothing and equipment, but the treatment itself became even more difficult due to the absence of my colleagues, because here we help each other, because it's a very difficult treatment...* (I17).

Class 3: Mental suffering due to clinical vulnerability in facing the pandemic scenario

Class 3, represented by 18.9% of the words, denoted mental suffering due to clinical vulnerability in facing the pandemic scenario. The following statements indicate greater concern among the subjects when considering their clinical conditions of immunity and comorbidities: *For those of us on hemodialysis, it was more difficult to face this disease, because we are already weakened, with low immunity, and facing something like this, seeing so many people die and risking our infection, I felt a little shaken, I even went to this separate room twice, but I did the test and it showed nothing* (I2)... *I remember this same patient coughing twice very hard and the nursing technician who was taking care of him ran away, that made me desperate in such a way that I started to cry, thinking that I would catch COVID and die, or have severe after-effects, because what we saw were people with hypertension developing other types of problems and ending up with aggravating factors, going to the ICU and everything else* (I10).

Feelings of despair and the emergence or worsening of anxiety/insomnia were reported as frequent and had negative implications for sleep and eating routines, obviously reflecting on quality of life and clinical conditions: *All of this added to the anxiety related to the COVID-19 era. I couldn't sleep, I couldn't eat. When I ate, I ate too much and felt sick. My anxiety attacks peaked more during the night. My wife usually goes to bed early, so I ended up with no one to talk*

to. Insomnia set in (I10). *I remember the first few days. It was kind of desperate. I was already going through a period of psychological distress, some emotional difficulties, and that was a boost. It multiplied what I was feeling tenfold. I didn't leave my room* (I10).

Class 4: Strategies for preventing COVID-19

Class 4, with 15.8% of the words, revealed knowledge and adherence to strategies for preventing COVID-19, as they referred to adopting measures such as washing hands, wearing a mask, using alcohol gel and social distancing as strategies used to prevent SARS--CoV-2 infection: *We did everything that was recommended, washing our hands, wearing a mask, maintaining social distancing and sanitizing our bodies well, washing our hair* (I1). *To this day I still wear a mask, because it keeps us safe, we are already sick, we cannot trust ourselves, we have to take care of ourselves, sanitize ourselves, use a mask, alcohol gel and everything the nurses ask us to do* (I18).

Patients expressed in their statements also adopting such measures outside the hospital, which in turn required adopting adaptation strategies and changes in the routine of family life: *Before entering the house, I would take off all my clothes, put them in a bag, take an alcohol bath, then go straight to the bathroom to take a shower with antibacterial soap, which they said had a certain function, clean my cell phone, take off the cover and everything and use alcohol. I tried to bring the minimum amount of things for dialysis, sometimes I didn't even bring a bag* (I10). *So I changed everything, maintaining hygiene in everything at home, not piling up dirty clothes. When I got home, I had to put these clothes in a bucket with soap, so I could wash them the next day. All of this has changed. People who come into my house have to wear a mask, and I don't leave the house without a mask* (I9).

Class 5: The impacts of the immunization process against COVID-19

Class 5, represented by 17.2% of the words, presents the impacts of the immunization process against COVID-19. The relevance of immunization against COVID-19 was highlighted, which led to advances and improvements in hemodialysis treatment, since patients felt safer when immunized. It was observed that epidemiological control and the reduced number and severity of cases contributed to alleviating anguish and concern: *After the vaccine came, things got better, although care must continue, but after the vaccine arrived we started to relax a little, after we got the vaccine* (I1). *After this vaccine came out, things got better, most people were dying before that, and now we have seen the situation ease a little. Thank God everything went well, I only saw the reports before that a lot of people had died, but now it has decreased* (I4).

It was possible to demonstrate dissatisfaction and discontent regarding the late inclusion of chronic kidney patients in the list of priorities for immunization against COVID-19, according to the statements: *A lot has changed since the vaccines, in my opinion it should have started right at the beginning of the pandemic, they took a long time to prioritize people who undergo hemodialysis to get vaccinated and that is why many of us lost our lives, after the vaccination I realized that many people were spared from catching the virus* (I6). *Things improved after the vaccination, if it weren't for the vaccines, many people would have died, they took a long time to prioritize us for vaccination, even though we have low immunity* (I9).

Class 6: The negative aspects of the experience of hemodialysis treatment during the pandemic

Class 6, with 17.9% of the words, elucidates negative aspects related to hemodialysis treatment during the COVID-19 pandemic. In this class, it was possible to observe facing several challenges for implementing periodic hemodialysis sessions. Among these challenges, the difficulties with transportation to the health institution and the lack of empathy and understanding from other users of public transportation stand out, in addition to the disregard for the recommended rule for the continuous use of masks in public environments: *People see the catheter hanging around your neck, on the crowded bus and they don't give up their seat, you have to stand up after hemodialysis, often weak and tired, not everyone wore a mask, it was very difficult* (I13). *We were like this, depending on the transportation, since I am a wheelchair user, it was even more difficult, because not every driver, taxi driver or Uber driver wanted to bring the wheelchair, I was calling all the time and explai-*

ning that I am a wheelchair user, until someone agreed to come and pick me up, but thank God I was able to continue with the treatment (I06).

Other elements mentioned concern the limitations that emerged during the time of hemodialysis. Complaints were made about the prohibition of eating during the hemodialysis session at the institution, in addition to the difficulty in complying with the recommendation of continuous use of the mask throughout the treatment time: *What was difficult was the issue of wearing the mask during the entire dialysis, and suspension of eating during dialysis, many times I even felt sick, because I couldn't eat* (I12). *Wearing a mask was also very difficult, in addition to everything I have a deviated septum, there are times when I feel very suffocated, and I ended up feeling sick and having to take the mask off for a while, even knowing the extreme need to keep it on* (I17). *We had a difficult thing which was having to wear a mask all the time, and sometimes I felt suffocated* (I11).

Discussion

This study demonstrated that individuals with CKD undergoing hemodialysis experienced numerous challenges of various natures during the COVID-19 pandemic. There was an increase in anxiety and depression symptoms, impaired sleep, drug use, psychosomatic symptoms, and fear of becoming infected or transmitting the virus to family members during this period[13]. It is noted that fear of the unknown increases anxiety levels, as well as potentiates preexisting health problems, which occurred more frequently in the context of the COVID-19 pandemic[4].

It is important to highlight that the mental health of hemodialysis patients should be considered in the individual therapeutic plan and be the target of multidisciplinary interventions which involve the articulation of nursing and psychology[8]. Therefore, the change in routine seems to be a challenge for patients undergoing hemodialysis treatment, and it is up to the nurse to understand the needs for welcoming and planning together with the multidisciplinary team of the service, and for interventions which favor the patient's readaptation to the new reality. In this sense, what stands out is what the CCM identifies as a premise for efficient healthcare in chronic conditions: supported self-care[12]. This includes a plan agreed upon between the health professional and the patient, in which the needs/difficulties can be overcome or minimized through guidance provided by the health professional.

Regarding the fear of contagion directed at themselves and their families, it was noted that the participants presented feelings of anguish and fear at the possibility of contagion by SARS-CoV-2. It is also worth noting that several recommendations during the pandemic aimed to reduce transmission of the disease, and social isolation was the most strongly disseminated and demanded worldwide among these recommendations. However, social isolation is not a real possibility for people undergoing hemodialysis treatment, since they need to go to hemodialysis units at least three times a week to undergo the procedure. Many of those who require hemodialysis to survive needed transportation to undergo the procedure, and therefore were exposed to a greater contamination risk when using public transportation to get around, or shared transportation with several patients and companions during the pandemic[14]. In this regard, it is important to highlight the importance of the operational structure of the Healthcare Networks proposed by CCM that includes the health transportation system in the logistics systems, which must also be strategically designed and implemented in order to safely meet the specific needs of its users[6,15].

Evidently, opposition between compliance with social isolation and the mandatory continuation of hemodialysis treatment, even with the fear of contagion by SARS-CoV-2, contributed to increase the negative impacts on the mental health of this population. Therefore, it is necessary that this demand be taken into account when readjusting institutional routines in the post-pandemic scenario, so that interventions can be planned through supported self-care to mitigate the negative repercussions in these patients, with a view

to achieving empowerment and preparing individuals for self-management of their health conditions[7].

Studies have shown similar results regarding mental suffering caused by clinical vulnerability to the pandemic scenario, as presented in class 3[16-17]. The apprehension resulting from fear of contagion, with possible worsening of the condition in the event of contamination, resulting from immunological weaknesses or the presence of comorbidities, leading to a clinical outcome with death, can also be identified in the Italian older adult population, in which the main feeling experienced during the COVID-19 pandemic was the fear of dying[15]. The fact that they are classified as a population at risk with possible unfavorable outcomes culminated in generating significant psychological burdens which are related to the presence of psychological suffering, which highlights the need for interventions to promote and treat mental health within the scope of health services and guided by support for care with a view to alleviating this type of suffering arising from the experience of hemodialysis treatment during the pandemic.

Regarding knowledge and adherence to prevention strategies against COVID-19, it was observed that there was knowledge about the importance of adopting such measures. Thus, frequent hand washing, use of 70% alcohol and social distancing stood out among these measure as being effective in reducing viral transmission since the pandemic was declared in March 2020[18]. It is noted that in addition to knowing the effective strategies for preventing and controlling infection, it is important to identify which are the most effective strategies for improving the knowledge, attitudes and practices of the population in relation to COVID-19, which highlights the importance of health communication being clear, objective and direct[19].

In this regard, it is observed that a proactive and technically and scientifically prepared health team can contribute to health education by supporting decisions, ensuring that users are adequately informed and can jointly contribute to minimizing health risks[15]. The relevance of health education developed by the multidisciplinary team, especially by nurses, is highlighted, given their leading role in the care scenario, especially when aimed at a vulnerable and at-risk population, such as patients undergoing hemodialysis[5].

Furthermore, it is clear that the dissemination of fake news represents a serious risk regarding the inadequate adoption of prevention and/or treatment measures. In the meantime, it is necessary to intensify and disseminate truthful information to be adopted by the population, which supports decision-making, in order to reduce doubts or adopting practices which are not consistent with the situation or scientifically proven[7].

The fifth class refers to the impacts of the immunization process against COVID-19 on the experience of patients undergoing hemodialysis. This fact corroborates evidence found in another center, which revealed that vaccination significantly reduced SARS--CoV-2 infection among those undergoing hemodialysis treatment[20]. It is observed that the patients' speeches reaffirms numerous contributions arising from the immunization process, from the reduction in the incidence of cases to the significant decrease in the number of hospitalizations and deaths. In this context, the impact of advanced immunization beyond the biological benefits is highlighted, since it transcends them, also bringing holistic benefits which impact the mental health and coping of hemodialysis patients, creating an environment where there seems to be a little more security[19].

Furthermore, participants highlighted their concern regarding the late inclusion of patients undergoing hemodialysis as a priority group for vaccination against COVID-19, although evidence had demonstrated the promising status of chronic kidney patients after vaccination against COVID-19, confirming the need to establish this group as a priority for immunization[21]. It is noteworthy that contrary to the recommendation of social isolation, patients who were dependent on hemodialysis had no choice in the pan-

demic scenario, and had to expose themselves to the risk of leaving home, since missing dialysis sessions makes their clinical condition incompatible with life.

It is also important to emphasize that in scenarios prior to the pandemic, nursing care aimed at patients undergoing hemodialysis was based on preventive actions regarding possible complications, given the severity of CKD for the biopsychological and social balance of patients. With the advent of the pandemic, greater rigor was observed in adopting actions and in adapting to new guidelines with a view to not only prevent contagion by existing microorganisms, but also by SARS-CoV-2, given its potential for worsening in this particular population[18].

Finally, regarding the negative aspects related to hemodialysis treatment during the COVID-19 pandemic, it was found that the subjects faced several challenges in attending their periodic hemodialysis sessions. These challenges included difficulties with transportation to the health institution, with mention of the lack of empathy/understanding from other public transportation users, in addition to disregard for the recommended standard for the continuous use of masks in public environments. Furthermore, the multiplicity of challenges in public health regarding establishment of effective measures to address chronic conditions in a pandemic reality is noted. The importance of modifying the arrival flows to the hemodialysis section is also highlighted, adopting new behavioral routines, such as the use of masks by patients, care when traveling on urban public transportation or transportation outside the home, meal times, hygiene of the dialysis service, among other conditions[22].

It is important to emphasize that the theoretical approach of health professionals with the conceptual bases of the CCM is essential for qualifying Specialized Outpatient Care, seeking to overcome previous models whose practices were fragmented and disjointed from other care points in the Healthcare Network. Studies indicate that investments in the continuing education of professionals working in the Brazilian Unified Health System still present obstacles, sometimes neglecting essential aspects of working with chronic conditions[6,15].

Therefore, the importance of the CCM and implementation of its pillars, which mainly include supported self-care, decision support and reorganization through healthcare networks is highlighted, so that the necessary support is offered to these patients who emerge from the pandemic with weaknesses and difficulties, especially with regard to mental suffering.

Study limitations

As a limitation, it is worth mentioning the fact that this was a study conducted in a single center, whose results cannot be extrapolated to other realities. It is additionally worth highlighting the selection bias, since the sample only consisted of users of the Unified Health System, not including supplementary health, in which the experience of hemodialysis treatment during the pandemic may have been different. In addition, possible memory biases can be considered; however, since it constitutes a remarkable and atypical period in history, it is believed that the main facts were remembered. The findings of this study demonstrate the need for further research and to develop strategies for reorganizing health services from the perspective of the Chronic Care Model. In addition, they highlight the importance of implementing effective coping measures in the post-pandemic scenario, especially with regard to the mental health of patients.

Contributions to practice

The study provides important contributions by revealing the experiences of patients undergoing hemodialysis treatment during the COVID-19 pandemic, which enables idealizing and applying holistic actions which consider the subjectivity of the subjects in order to propose contributions for planning nursing care aimed at hemodialysis patients in possible future pandemic periods. It also contributes to understanding how care can be maintained and adapted in ti-

mes of health crisis, especially in relation to the role of nursing.

The findings presented reinforce the need to develop coping strategies after the pandemic, while deeply revealing the subjectivities and extraclinical and mental health demands that must be considered by the nursing and multidisciplinary team in the continuity of care for chronic patients, so that there is effectively additional support in the promotion/treatment of the physical and mental health of hemodialysis patients after the pandemic. Furthermore, the importance of integrating physical and emotional care following the CCM principles is highlighted in order to ensure comprehensive care for chronic patients.

Conclusion

The experience of individuals undergoing hemodialysis treatment during the COVID-19 pandemic was marked by feelings of fear and anguish in facing the uncertainties and changes, insecurity regarding the possibility of contagion and clinical worsening with death, resulting from greater immunological fragility or the presence of comorbidities. It was evident that the social distancing necessary to control the disease culminated in an increase in feelings of loneliness and worry, longing for family life and pleasurable activities before the pandemic. It was also possible to identify that the patients' experiences were permeated by challenges regarding care, especially with regard to mental health.

Authors' contribution

Conception and design or data analysis and interpretation and responsibility for all aspects of the text in ensuring the accuracy and integrity of any part of the manuscript: Costa LS, Veras JLA. Writing of the manuscript or relevant critical review of the intellectual content and final approval of the version to be published: Costa LS, Santos ECB, Galindo Neto NM, Silva CRDT, Sá GGM, Silva MVB, Veras JLA.

References

1. Silva MVB, Filho CAL, Bernardino AO, Gouveia VA. Mortalidade por doença renal crônica secundária à hipertensão no Brasil: um estudo do "Global Burden of Disease". Rev Epidemiol Control Infect. 2022;12(3):126-32. doi: https://dx.doi.org/10.17058/reci.v12i3.17522
2. Mccullough KP, Morgenstern H, Saran R, Herman WH, Robinson BM. Projecting ESRD incidence and prevalence in the United States through 2030. J Am Soc Nephrol. 2019;30(1):127-35. doi: https://dx.doi.org/10.1681/ASN.2018050531
3. Sociedade Brasileira de Nefrologia (SBN). Censo de diálise 2020 [Internet]. 2020 [cited Aug 5, 2024]. Available from: https://www.censo-sbn.org.br/censosAnteriores
4. Almeida AM, Rabinovich EP. Experiences of family members of people on hemodialysis during the novel corona virus pandemic (COVID-19). Res Soc Dev. 2020;9(8):e887986661. doi: https://dx.doi.org/10.33448/rsd-v9i8.6661
5. Basile C, Combe C, Pizzarelli F, Covic A, Davenport A, Kanbay M, et al. Recommendations for the prevention, mitigation and containment of the emerging SARS-CoV-2 (COVID-19) pandemic in haemodialysis centres. Nephrol Dial Transplant. 2020;35:737-41 doi: https://dx.doi.org/10.1093/ndt/gfaa069
6. Marques FRDM, Pires GAR, Santos JLG, Baldissera VDA, Salci MA. The chronic care model and its implications for specialized outpatient care. Rev Bras Enferm. 2023;76(1):e20210315. doi: http://dx.doi.org/10.1590/0034-7167-2021-0315pt
7. Dantas LFS, Deccache-Maia E. Scientific Dissemination in the fight against Fake News in the Covid-19 times. Res Socy Dev. 2020;9(7):e797974776. doi: https://doi.org/10.33448/rsd-v9i7.4776
8. Rodrigues KA, Silva EM, Barbosa LDCS. Repercussões biopsicossociais em pacientes submetidos a tratamento hemodialítico. Res Soc Dev. 2020;9(7):e814974931. doi: https://dx.doi.org/10.33448/rsd-v9i7.4931
9. World Heatlh Organization (WHO). World mental health report: Transforming mental health for all [Internet]. 2022 [cited Aug 5, 2024]. Available from: https://www.who.int/publications/i/item/9789240049338

10. Pretto CR, Winkelmann ER, Hildebrandt LM, Barbosa DA, Colet CF, Stumm EMF. Calidad de vida de pacientes renales crónicos en hemodiálisis y factores relacionados. Rev Latino-Am Enfermagem. 2020;28:e3327. doi: https://dx.doi.org/10.1590/1518-8345.3641.3327

11. Minayo MCS. Sampling and saturation in qualitative research: consensuses and controversies. Rev Pesq Qual [Internet]. 2017 [cited Aug 5, 2024];5(7):1-12. Available from: https://editora.sepq.org.br/rpq/article/view/82

12. Ministério da Saúde (BR). Diretrizes para o cuidado das pessoas com doenças crônicas nas redes de atenção à saúde e nas linhas de cuidado prioritárias [Internet]. 2013 [cited Aug 13, 2024]. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/diretrizes%20_cuidado_pessoas%20_doencas_cronicas.pdf

13. Shigemura J, Ursano RJ, Morganteins JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: mental health consequences and target populations. Psychiatry Clin Neurosci. 2020;74(4):281-2. doi: http://dx.doi.org/10.1111/pcn.12988

14. Nigri RB, Silva RFA. Hemodialysis in the context of COVID-19: care, nursing protagonism and quality. Rev Bras Enferm. 2022;75(1):e20201077. doi: https://doi.org/10.1590/0034-7167-2020-1077

15. Almeida PF, Giovanella L, Filho MTM, Lima LD. Redes regionalizadas e garantia de atenção especial em saúde: a experiência do Ceará, Brasil. Ciênc Saúde Colet. 2019;24:4527-40. doi: https://dx.doi.org/10.1590/1413-812320182412.25562019

16. Gomes MAC, Fernandes CS, Fontenele NAO, Galindo Neto NM, Barros LM, Frota NM. Elderly people's experience facing social isolation in the COVID-19 pandemic. Rev Rene. 2021;22:e69236. doi: http://doi.org/10.15253/2175-6783.20212269236

17. Leo D, Trabucchi M. COVID-19 and the fears of Italian senior citizens. Int J Environ Res Public Health. 2020;17(10):3572. doi: https://doi.org/10.3390/ijerph17103572

18. Demirbilek Y, Pehlivantürk G, Özgüler ZO, Meşe EA. COVID-19 outbreak control, example of ministry of health of Turkey. Turk J Med Sci. 2020;50(SI1):489-94. doi: https://doi.org/10.3906/sag2004-18

19. Adhikari SP, Meng S, Wu YJ, Mao YP, Ye RX, Wang QZ, et al. Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review. Infect Dis Poverty. 2020;9(1):29. doi: https://dx.doi.org/10.1186/s40249-020-00646-x

20. Matos JF, Peralta R, Félix C, Pinto B, Ponce P. Vaccination against COVID-19 in a network of hemodialysis units in Portugal: a promising experience. Acta Med Port. 2022;35(5):336-42 https://dx.doi.org/10.20344/amp.16250

21. Boongrid S, Chuengsaman P, Setthaudom C, Nongnuch A, Assanatham M, Phanprasert S, et al. Short-term immunogenicity profiles and predictors for suboptimal immune responses in patients with end-stage kidney disease immunized with inactivated SARS-CoV-2 Vaccine. Infect Dis Ther. 2022;11:351-65. doi: https://doi.org/10.1007/s40121-021-00574-9

22. Queiroz JS, Marques PF. Gerenciamento de enfermagem no enfrentamento da covid-19 nos serviços de hemodiálise. Rev Enferm Foco. 2020;11(1):196-8. doi: http://doi.org/10.21675/2357-707X.2020.v11.n1.ESP.3536