Screening chronic kidney disease in nursing professionals

Rastreio de doença renal crônica em profissionais de enfermagem.

Tamizaje de la enfermedad renal crónica en profesionales de enfermería.

RESUMO

Objetivo: rastrear o risco do desenvolvimento da Doença Renal Crônica na equipe de enfermagem atuante no setor de nefrologia de um Hospital Universitário. Método: estudo transversal, descritivo e de abordagem quantitativa. Utilizou-se o Screening for Occult Renal Disease (SCORED) relacionando os dados sociodemográficos e fatores de risco associados à para avaliação. Resultados: Participaram 27 profissionais de enfermagem, sendo 88,89% enfermeiros, idade média 37,81 anos; 81,48% mulheres; etnia branca 55,56%; renda familiar maior que 2 salários mínimos 51,85%; sedentários 59,26%; nunca fumaram 88,89%; ingerem bebida alcoólica socialmente 70,37%; comparecem a consultas médicas regularmente 70,37% e não possuem comorbidades 59,26%. Histórico familiar da doença 92,59% e fizeram exame de creatinina 81,48% no último ano 51,85%. Dos participantes, 7,41% (n=2) apresentaram risco para desenvolver a doença. Conclusão: É notório que os profissionais possuem autocuidado a saúde renal, evidenciado pela frequência às consultas e realização de exames de creatinina.

DESCRITORES: Equipe de enfermagem; Insuficiência renal crônica; Autocuidado.

ABSTRACT

Objective: to track the risk of developing Chronic Kidney Disease in the nursing team working in the nephrology sector of a University Hospital. Method: cross-sectional, descriptive study with a quantitative approach. The Screening for Occult Renal Disease (SCORED) was used, listing sociodemographic data and risk factors associated with the evaluation. Results: 27 nursing professionals participated, 88.89% of whom were nurses, mean age 37.81 years; 81.48% women; white ethnicity 55.56%; family income greater than 2 minimum wages 51.85%; sedentary 59.26%; never smoked 88.89%; consume alcohol socially 70.37%; 70.37% attend medical consultations regularly and 59.26% do not have comorbidities. Family history of the disease 92.59% and creatinine test 81.48% in the last year 51.85%. Of the participants, 7.41% (n=2) were at risk for developing the disease. Conclusion: It is clear that professionals have self-care for kidney health, as evidenced by the frequency of consultations and the performance of creatinine tests.

DESCRIPTORS: Nursing team; Chronic renal failure; Self-care.

RESUMEN

Objetivo: rastrear el riesgo de desarrollar Enfermedad Renal Crónica en el equipo de enfermería que actúa en el sector de nefrología de un Hospital Universitario. Método: estudio transversal, descriptivo con abordaje cuantitativo. Se utilizó el Screening for Occult Renal Disease (SCORED), listando datos sociodemográficos y factores de riesgo asociados a la evaluación. Resultados: Participaron 27 profesionales de enfermería, de los cuales 88,89% eran enfermeros, edad media 37,81 años; 81,48% mujeres; etnia blanca 55,56%; ingreso familiar mayor a 2 salarios mínimos 51.85%; sedentarios 59,26%; nunca fumó 88,89%; consumen alcohol socialmente el 70,37%; El 70,37% acude a consultas médicas de forma habitual y el 59,26% no presenta comorbilidades. Antecedentes familiares de la enfermedad 92,59% y prueba de creatinina 81,48% en el último año 51,85%. De los participantes, 7,41% (n=2) estaban en riesgo de desarrollar la enfermedad. Conclusión: Es claro que los profesionales tienen autocuidado de la salud renal, evidenciado por la frecuencia de las consultas y la realización de pruebas de creatinina.

DESCRIPTORES: Equipo de enfermería; Falla renal cronica; Cuidados personales.

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INTRODUÇÃO

Chronic Kidney Disease (CKD) is a process of nephron injury that happens continuously, slowly, progressively, and silently, causing irreversible damage to kidney function. Most of the time, the symptoms only appear when the CKD is already in an advanced stage and this patient will need to start Renal Replacement Therapy (RRT). The treatments have a direct impact on the individual's habits and way of life, in addition to generating a lot of health expenses due to the excessive cost and dependency on therapies. CKD is considered a public health problem and the number of cases is gradually increasing. For this reason, it is extremely important to make an early diagnosis and detect risk factors for the disease, avoiding complications[1].

There are many risk factors associated with CKD: aging, obesity, hypertension (SAH), diabetes, cardiovascular diseases, smoking, poor nutrition, inadequate fluid intake, among others. In this perspective, it is necessary to invest in the most diverse levels of care so that there is an early identification of people with risk factors or already with CKD in the initial stage, to direct health actions effectively[1].

The practice of nursing professionals is complex, diverse, and multifaceted. The workers who make up this category can be inserted in different segments of the labor market and can work in different levels of health care. When carrying out their activities, these workers are continuously exposed to a series of occupational risks: physical, chemical, biological, mechanical and accidental, ergonomic and psychosocia[2].

In Brazil, nursing professionals are committed to multiple bonds, with little rest and a double workday, and sometimes forget to take care of themselves, distancing themselves from social life and neglecting their self-care, which implies illness, mainly due to chronic non-communicable diseases (CNCD). Bad eating habits and carelessness with the quality of food are factors triggered by the high complexity of nursing work.. Their time in the hospital environment is entirely focused on care, so their diet is impaired. Professionals often consume foods that are easy to prepare, with low nutritional quality, which can affect their nutritional status[3-4].

Nursing is one of the health professions whose essence and specificity is the care of human beings whether individually, in the family or in the community, developing health promotion and disease prevention activities, recovery and health rehabilitation. This profession is responsible for the care, comfort, reception and well-being of clients, whether providing care, coordinating other sectors to provide assistance or promoting their autonomy through health education.

Given this context, the objective of this study was to track the risk of developing CKD in the nursing team working in the nephrology sector of a University Hospital.

METHOD

This is a cross-sectional, descriptive study with a quantitative approach. The scenario was a university hospital located in the city of Rio de Janeiro, classified as a tertiary unit, which has the Nephrology service, consisting of kidney transplantation, hemodialysis, peritoneal dialysis, and conservative treatment.

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The research participants were members of the nursing team, day and night shifts, and nursing professors working in the nephrology service, totaling 61 professionals, including nurses, nursing residents, technicians and nursing assistants. All nursing professionals, in any of the categories,, working in the Nephrology service over 18 years old were included in the study. Professionals who had been diagnosed with CKD were excluded.

The questionnaires were sent electronically, via email and messaging application (WhatsApp) to all nursing professionals working in the Nephrology sector from March to May 2021, through a Google forms link, the participant had access to the Informed Consent Form (TCLE) to read and after acceptance, they were directed to respond to the sociodemographic characterization questionnaires and risk factors associated with CKD, produced by the researchers and the Screening for Occult Renal Disease (SCORED). The main objective of SCORED is to facilitate the tracking of people with CKD, predicting the chance that the individual will have the disease. Based on this questionnaire, an individual with more than 4 points has a one in five chance of having CKD. Its validation and translation for the Brazilian population was carried out by Magacho6, indicating sensitivity of 80%, specificity of 65%, positive predictive value of 14%, negative predictive value of 97% and accuracy of 66%.

At the end of completing the questionnaire, the participant can observe their chances of having CKD, as well as some actions to be taken in view of the SCORED result. The researchers provided adequate guidance on how and when to seek health care assistance within the questionnaire itself. Responses were treated anonymously and confidentially.

All professionals who met the inclusion criteria were invited to participate in the study, only 27 answered the survey. The data were stored and recorded in an Excel spreadsheet contained within Google Drive, directly linked to the form with the questionnaires that were completed by the participants. A specific e-mail was created for the work where the representative data and their variations were stored, with access only to the authors. Data were analyzed in Excel and presented in graph format, obtaining relative and absolute values (average), allowing important conclusions to be drawn about the population from the data survey.

The research was approved by the Research Ethics Committee, through Plataforma Brazil under opinion 4.567.511 and CAAE 42542321.9.0000.5282. All ethical precepts were respected, including the right of users to want or not to participate in the study.

RESULTS:

Of the 27 professionals who responded to the survey, none were nursing assistants, 13 (48.15%) were nurses and 11 (40.74%) were nursing residents. As for nursing technicians, who are the largest workforce and represent the majority in this sector, only 3 (11.11%) responded to the survey.

The average age of the research participants was 37,81 years old. Among the nursing technicians, ages varied between 35 and 66 years old; Nurses between 33 and 58 years old; Nursing residents between 23 and 38 years old.

The sociodemographic profile of the participants is shown in table 1. None of the participants declared themselves as Indigenous or yellow; or who had a family income of less than 1 minimum wage. There is still a female predominance in the area and people who declare themselves to be white.

Among the participants, 1 (3.70%) reported having been an alcoholic for 25 years and a smoker for 10 years. Another 2 (7.41%) reported current tobacco use and social drinking. Table 2 presents characteristics related to the health of the research participants.

Among the 11 participants who reported having some comorbidity, 3 (11.11%) had hypertension and 4 (14.82%) obesity, conditions that are risk factors for CKD Among these, 1 (3.70%) reported having more than one comorbidity.

Table 3 presents the data referring to the evaluation of the participants' renal

Table 1 – Sociodemographic profile of nursing professionals. Rio de Janeiro, RJ, Brazil, 2021.

Social Profile	n	%
Gender identity		
Female	22	81,48
Male	4	14,82
I do not identify with any of these.	1	3,70
Ethnicity		
White	15	55,56
Black	6	22,22
Brown	5	18,52
Mixed	1	3,70
You have a religion		
Yes	22	81,48
No	5	18,52
If you have a religion, you are a practitioner		
Yes	14	51,85
No	10	37,04
Not applicable	3	11,11

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function, according to self-report.

As for the professionals who reported having performed a serum creatinine test, 11 (40.74%) are nurses, 9 (33.33%) residents and 2 (7.41%) technicians.

Table 4 shows the profile of the participants' responses to the SCORED.

It was possible to evaluate the score obtained by each participant and identify those who were at risk for developing CKD, shown in table 5.

Among the 2 participants who are at risk for CKD according to the SCORED, one reported being aged between 50 and 59 years (2 points), female (1 point), had or has anemia (1 point) and has SAH (1 point). The other informed age group between 60 and 69 years (3 points), female gender (1 point) and indicated having SAH (1 point). Thus, according to the SCORED questionnaire, the participants have a 1 in 5 chance of having CKD, and the questionnaire itself indicated that they should request a creatinine test for early identification at the next visit to the doctor. Correlating the data obtained from the SCORED and the sociodemographic data, it was identified that both individuals have risk factors for the progression of CKD (one indicated that he was a smoker for 10 years, an alcoholic for 25 years, has hypertension and has or had anemia; the other another signaled that he has SAH).

Relating the profile of comorbidity and physical activity, 16 (59.26%) reported not having comorbidities. Among these, 10 (62.50%) are nurses, 4 (25.00%) are residents and 2 (12.50%) are nursing technicians; 8 (50.00%) perform physical activity. Among the 11 (40.74%) professionals who have comorbidity, 7 (63.64%) are residents, 3 (27.27%) are nurses and 1 (9.09%) is a nursing technician. Only 3 (27.27%) reported performing physical activity.

Among the 27 participants, only 1 (3.70%) of the nursing residents had a score of 3 on the SCORED, which is the closest to the possible risk of CKD Among nurses, 3 (11.11%) have a score of 3; and 1 (3.70%) has a score of 5 showing

Family income		
From 02 to 05 minimum wages	14	51,85
More than 05 minimum wages	13	48,15

Source: authors' data, 2021.

Table 2 – Health-related characteristics of nursing professionals. Rio de Janeiro, RJ, Brazil, 2021.

Health Conditions	n	%
practice physical activity		
No	16	59.26
Yes	11	40.74
Smoker		
I have never smoked	24	88.89
Yes	2	7.41
I have been a smoker	1	3.70
I have been a user of alcoholic beverages		
I only drink socially	19	70.37
I have never drunk	7	25.93
I was once an alcoholic	1	3.70
Attends medical appointments on a regular basis.		
Yes	19	70.37
No	8	29.63
Has comorbidities		
No	16	59.26
Yes	11	40.74
Family history of CKD		
No	25	92.59
Yes	2	7.41

Source: authors' data, 2021.

Table 3 – Assessment of renal health care by nursing professionals. Rio de Janeiro, RJ, Brazil, 2021.

Social Profile	n	%
Had a serum creatinine test		
Yes	22	81.48
No	5	18.52
If you had a creatinine test		
Remember the value	11	40.74
Remember the value	11	40.74
I have never taken a creatinine test	5	18.52
If you have done, how long since the last time you took the test		
Less than 6 months ago	8	29.63
More than 1 year ago	8	29.63
Between 6 months and 1 year	6	22.22
I have never taken a creatinine test	5	18.52

Source: authors' data, 2021.

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a risk of CKD. Only 1 (3.70%) technician was at risk for CKD, the others had a score of less than 1 on the SCORED.

Regarding the salary profile of each area of activity, we had in the range of more than 5 minimum wages, 10 (37.04%) nurses, 2 (7.41%) residents and 1 (3.70%) technician. Between 2 and 5 minimum wages we had 3 (11.11%) nurses, 9 (33.33%) residents and 2 (7.41%) technicians.

DISCUSSION

The self-care of the professionals interviewed is high for going to medical appointments and performing creatinine tests, but individuals have low adherence to the practice of physical exercises. Araújo[7] revealed that nursing workers know the practice of self-care, but do not prioritize it. Silva[8] indicated that they claim to have good health, however, they reported having health problems that can be alleviated with the implementation of self-care. It is already known that functional health literacy and inadequate knowledge regarding CKD are associated with worsening kidney function. Knowledge is essential to promote self-care and prevent disease progression[9].

According to the 2021 census of the Brazilian Society of Nephrology (SBN), the highest percentage of patients undergoing dialysis is mainly in the ranges from 45 to 64 years old (41.5%), followed by 65 to 74 years old (22.8%) and respectively 20 to 44 years with (21.6%), these ranges that were predominant in nursing professionals in the surveyed nephrology sector. In addition, we can see that professionals who scored above 3 points on the SCORED were mainly in the 45-64 age group. Studies show that in populations younger than 50 years, individuals are less likely to have CKD. Professionals who scored 4 or more are over 50 years old. It is already known that aging is a risk factor for CKD, as a decrease in the glomerular filtration rate (GFR) may occur over the years[10-15].

With regard to gender identity, it is

Table 4 – SCORED response profile. Rio de Janeiro, RJ, Brazil, 2021.

SCORED	n	%
What age group am I in?		
I am not in the above age ranges.	23	85.19
1. I am between 50 and 59 years old.	3	11.11
2. I am between 60 and 69 years old.	1	3.70
3. I am between 70 years old or more.	-	-
4. I am a woman		
Yes	23	85.18
No	4	14.82
5. I had / I have anemia.		
No	22	81.48
Yes	5	18.52
6. I have high blood pressure.		
No	24	88.89
Yes	3	11.11
7. I have diabetes		
No	27	100.0
Yes	-	-
8. I had a heart attack or stroke		
No	27	100.0
Yes	-	-
9. I have congestive heart failure or heart failure.		
No	27	100.0
Yes	-	-
10. I have circulation problem/vascular disease in my legs.		
No	24	88.89
Yes	3	11.11
11. My scan showed that I have protein loss in my urine.		
No	27	100.0
Yes	-	-

Source: authors' data, 2021.

Table 5 – Score of participants in the SCORED questionnaire. Rio de Janeiro, RJ, Brazil, 2021.

SCORED Score Profile	n	%
Got 1 point	13	48.13
Got 2 points	4	14.82
Got 3 points	4	14.82
did not score	4	14.82
Got 4 points or more	2	7.41
Total participants with risk of CKD	2	7.41

Source: authors' data, 2021.

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notable that the number of women in nursing is significantly higher than the number of men and, for this reason, it is difficult to establish a relationship. In the survey, no man scored on the SCORED, only women scored, scoring more than 4 points. A recent study also shows a higher prevalence of CKD in stages 1 to 4 in the female population, however the disease progresses faster in the male population, which increases the prevalence of men on dialysis therapy, as pointed out by the SBN census[10-11].

Religion is not directly related to the prevalence of CKD, although studies attribute spirituality as beneficial in improving kidney function, we did not identify studies that say that religion prevents the disease or helps to prevent its development[16-17]. In this study, we could not relate religion to the risk of CKD.

The level of education is related to the individual's ability to know and understand underlying diseases, including some that can lead to CKD, improving prevention and control capacity. Research shows that most patients with CKD have low education[10,12,18]. Most of the participating professionals have a good level of education. This may show the low prevalence of CKD, in addition to the fact that all of them work in a nephrology sector at a university hospital where care is linked to research.

Regarding income, the low prevalence of CKD in this group may be related to higher wages, as it is known that CKD is associated with greater prevalence in groups where income is less than 2 minimum wages. Low income hinders a good quality of life and access to health services[12].

For Bezerra18, ethnicity is generally associated with a risk factor for the development of CKD. Studies place African descent as a risk factor as it characterizes a faster evolution of CKD. In the research, black professionals presented obesity and brown professionals presented SAH. There is in the literature the relationship of comorbidities that lead to CKD in Afro-descendants with low income[10,19-20].

We evidenced a low adherence to the performance of physical activities. Participants who are at high risk of developing CKD reported not performing physical activity We reinforce that physical exercises can directly help prevent injuries and improve quality of life, as they help with weight loss, avoiding obesity, in addition to helping to control NCDs such as SAH.

Fukushima[21] indicated that inadequate control of blood pressure, diabetes, smoking, obesity, among others, are traditional risk factors for the development and progression of CKD, where the practice of physical activity can be a protective factor capable of mitigating the changes caused by the disease and the treatment, reducing its rate of progression. Another study revealed that individuals who perform physical activities are 10% less likely to develop CKD than sedentary individuals[22].

For Souza Júnior et al.[23] , in addition to the great damage to the individual's health, the impairment of the renal system also causes an impact on the economic system, since the drug and dialysis treatment results in a high cost for the public coffers and still causes the removes individuals of productive working age from the market, thus affecting the public pension and social security system.

3 articles were listed that used the SCORED questionnaire and these refer to its ability to predict the risk of developing CKD and suggest its implementation in the context of public health, since it is a simple screening method[12,24-25].

The data obtained in our research corroborate the findings in the literature, where the final impression reveals that the questionnaire is easy to handle and implement, presents the ability to indicate risks to kidney health and allows knowing pathologies that directly or indirectly are linked to the baseline diagnosis of CKD.

Due to the COVID-19 pandemic, there were some limitations in the study in relation to attracting a larger number of participants, as the recommendations for social distancing ended up breaking the researchers' direct communication link with the target audience. An inexpressive response was obtained, where only 44.26% of the invited population responded to the questionnaire. Perhaps a face-to-face approach to raising awareness and encouraging research could resolve this deficit.

CONCLUSION

Despite the small number of participants, it was possible to collect data that demonstrate the susceptibility of the nursing team to developing CKD, thus provoking reflection with their self-care. This reflection indirectly encourages an improvement in care, as it is understood that by knowing how to avoid a certain pathology, this knowledge will be passed on. In the research, it was possible to foment elements for future research, since the current scenario is lacking in content that deals with the theme addressed. Thus, it is believed that the ideal of producing unpublished content was achieved, as the study presents information not found in the literature.

It is concluded that the studied population has risk factors that can cause damage to the renal function. Part of this population has classic factors for the disease and has a low adherence to physical activities. However, the vast majority performs a creatinine test, but less than half of the participants were able to accurately inform the value. We believe that because they are professionals working in the Nephrology sector, they have such a mentality of the importance of measuring creatinine levels.

We suggest screening all nursing professionals to identify possible problems and outline care strategies to encourage the preservation of renal function. We perceive as a strong point of this research the possibility of generating unpublished content on the theme addressed. We emphasize that the identified data are in line with those available in the literature.

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