*Rev Estomatol.* 2021;29(1):e10976. DOI: 10.25100/re.v29i1.10976

**ORIGINAL ARTICLE**

# Influence of dental treatment on quality of life and self esteem of hemodialysis-therapy patients.

Evandro Silveira de Oliveira [1] | Jessica Pereira Vidal da Silva [1] | Dhelfeson Willya Douglas-de-Oliveira [1] | Larissa Doalla de Almeida e Silva [1] | Emilio Henrique Barroso Maciel [2] | Frederico Lopes Alves [2] | Vanessa Gomes Brandão Rodrigues [2] | Pedro Henrique Scheidt Figueiredo [3] | Olga Dumont Flecha [1] | Patricia Furtado Gonçalves [1]

**OPEN ACCSESS**

**Filiación Institucional**
[1] Universidade Federal dos Vales do Jequitinhonha e Mucuri, Faculty of Health and Biologic Sciences, Department of Dentistry, Diamantina, Minas Gerais, Brazil.
[2] Hospital Santa Casa de Caridade, Diamantina, Minas Gerais, Brazil.
[3] Universidade Federal dos Vales do Jequitinhonha e Mucuri, Faculty of Health and Biologic Sciences, Department of Physiotherapy, Diamantina, Minas Gerais, Brazil.

**Citation:**
Silveira de Oliveira E, Vidal da Silva J, Douglas-de-Oliveira DW, Doalla de Almeida e Silva L, Barroso Maciel EH, Lopes Alves F, Gomes Brandão Rodrigues V, Scheidt Figueiredo PH, Dumont Flecha O, Furtado Gonçalves P. *Rev Estomatol*. 2021 March 2021;29(1):e10929.DOI: 10.25100/re.v29i1.10976

**Received:** February 02th 2021
**Evaluated:** February 12th 2021
**Accepted:** March 15th 2021
**Published:** March 31th 2021

**Correspondence**:
Patricia Furtado Gonçalves. Rua da Glória, 187-Centro, Diamantina – Minas Gerais, Brazil. CEP: 39100-000. Phone: +55 (38) 3532-6082 Email: patriciafu@yahoo.com



**ABSTRACT**

**Background:** Patients undergoing dialysis treatment have a worse quality of life and have higher rates of malnutrition, inflammation and hospitalization than the general population.
**Objective:** This study aimed to evaluate the influence of dental treatment on the quality of life and self-esteem of hemodialysis-therapy patients.
**Materials and Methods:** An interventional study was developed with 27 patients undergoing hemodialysis in Diamantina, Brazil. Initially, patients received a clinical evaluation of a dentist and responded to questionnaires to estimate the quality of life (Medical Outcomes Study 36-Item Short Form Health Questionnaire (SF-36) and Oral Health Impact Profile (OHIP) version 14) and self-esteem (Scale Self-Esteem of Rosenberg). After 45 days, the questionnaires were reapplied, and the patients received dental treatment to adapt the oral environment. After the treatment, 45 days were awaited to reapply the questionnaires. Descriptive analyzes were performed, Wilcoxon and Friedman tests were done. The level of significance was set at 5% ($p < 0.05$).
**Results:** Twenty-seven low-income and educated individuals participated in the study, most of whom were men. Hypertension and diabetes were not widely reported systemic diseases. There was statistical significance in SF-36 and OHIP-14 dimensions and improvement of self-esteem.
**Conclusion:** Dental treatment interfered positively with the quality of life and self-esteem of patients undergoing hemodialysis.

**KEY WORDS**
Fear; anxiety; dental care; school of dentistry.

**RESUMO**

**Fundamento**: Pacientes em tratamento dialítico apresentam pior qualidade de vida e maiores taxas de desnutrição, inflamação e hospitalização do que a população em geral.
**Objetivo:** Este estudo teve como objetivo avaliar a influência do tratamento odontológico na qualidade de vida e na autoestima de pacientes em hemodiálise.
**Materiais e métodos:** Foi desenvolvido um estudo intervencionista com 27 pacientes em hemodiálise em Diamantina, Brasil. Inicialmente, os pacientes receberam uma avaliação clínica de um dentista e responderam a questionários para estimar a qualidade de vida (Medical Outcomes Study 36-Item Short Form Health Questionnaire (SF-36) e Oral Health Impact Profile (OHIP) versão 14) e auto- estima (Escala de Autoestima de Rosenberg). Após 45 dias, os questionários foram reaplicados e os pacientes receberam tratamento odontológico para adaptação do meio bucal. Após o tratamento, aguardava-se 45 dias para reaplicação dos questionários. Foram realizadas análises descritivas, testes de Wilcoxon e Friedman realizados. O nível de significância adotado foi de 5% ($p < 0,05$).
**Resultados:** Participaram do estudo 27 indivíduos de baixa renda e escolaridade, a maioria homens. Hipertensão e diabetes não foram doenças sistêmicas amplamente relatadas. Houve significância estatística nas dimensões do SF-36 e OHIP-14 e melhora da autoestima.
**Conclusão:** O tratamento odontológico interferiu positivamente na qualidade de vida e na autoestima dos pacientes em hemodiálise.

**PALAVRAS CHAVE**
Qualidade de vida; odontologia; hemodiálise; epidemiologia; auto-conceito.

**Clinical relevance**
This study demonstrates the importance of offering dental treatment to patients undergoing hemodialysis and its interference on self-concept and quality of life.

## INTRODUCTION

Chronic kidney disease (CKD) has been a significant public health problem, requiring more attention. In 2015, in Brazil, there were 726 active dialysis units; in 2016, this number increased to 747, with an estimated prevalence of dialysis patients at 122,825.[1] CKD consists of renal injury with progressive and irreversible loss of kidney function [2] and may progress to final stage chronic renal failure, in which the only treatment options are dialysis or transplant.[3]

Hemodialysis treatment results in a state of dependence, and the individuals are organized around treatment, favoring a sedentary lifestyle and a sense of worthlessness.[4-5] Individuals undergoing this therapy constantly live in denial of the disease and the consequences of its evolution.[6] Hemodialysis causes psychological and social problems and affects oral health, either from the biological point of view or from the emotional aspect itself.

CKD patients have some oral health alterations, such as high dental plaque and calculus accumulation, xerostomia, uremic breath, paleness of the oral mucosa, as well as high rates of gingival bleeding.[7] The World Health Organization (WHO) Quality of Life Group considers the quality of life as people's perception of their position in life, the cultural context and value systems in which they live, as well as their goals, expectations, patterns and concerns. To verify this, instruments such as the Health-Related Quality of Life (HRQoL) and Impact Profile on Oral Health (OHIP-14) questionnaires are used. [8-10]
Patients undergoing dialysis are more susceptible to the development of infectious processes due to their general condition, which may reduce the efficiency of the immune system and mask the signs and symptoms of infection by the drugs used. Oral infections can bring severe complications to the systemic health in chronic renal patients because they present a source of infection.[11-16]

Few studies have evaluated the quality of life and self-esteem in patients undergoing hemodialysis. Further studies are needed to clarify the existing gaps on the subject [17-21] since only a small part relates dental treatment to quality of life. [22-23] To support this study, it is assumed that dental treatment could improve the quality of life and self-esteem of this specific group. Given the above, the study aimed to verify if there is an influence of dental treatment on the quality of life and self-esteem of patients undergoing hemodialysis.

## MATERIALS AND METHODS

### Trial design and participants

The study was conducted with patients from the hemodialysis sector of the Santa Casa de Caridade Hospital in Diamantina, Minas Gerais, Brazil, from March 2016 to June 2017, after being approved by the Research Ethics Committee (nº 900.184), following the ethical principles of the Declaration of Helsinki 1975 (revised in 2013) and the current laws for research in the country.

The dental treatment of these patients was performed at the Periodontics Clinic of the Department of Dentistry, Faculty of Health and Biologic Science, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil. It had a complete dental office, equipment and instruments necessary to carry out the treatment.

All subjects involved were verbally informed about the nature of the research, its objectives, procedures, and being free to accept or not to participate in the study. The participants signed the Informed Consent Form, ensuring that they could withdraw from participating at any time and anonymity. This information will be better detailed throughout the text.

### Interventions

A medical record was applied for initial evaluation, consisting of anamnesis and clinical examination. Inclusion criteria were: individuals with CKD undergoing hemodialysis treatment at the Santa Casa de Caridade in Diamantina; and over 18 years.

Patients with severe anemia, uncontrolled systolic and diastolic blood pressure or greater than 180 and 110 mmHg, respectively, unstable angina, complex ventricular arrhythmias, severe metabolic disease, acute myocardial infarction less than one month, acute infections, aneurysm of the aorta, severe aortic stenosis, or respiratory, neurological, and musculoskeletal impairment that contraindicated treatment were excluded.

Using a convenience sample, 30 individuals were invited to participate in the study, three of this individuals did not accept the invitations, the remaining 27 were included in the sample. After sample selection, patients underwent a detailed oral examination performed by a single dental surgeon with clinical experience who evaluated a group of patients three times with an interval of one week. The calculation of the intra-examiner Kappa coefficient of agreement (0.92) was performed using statistical

Presence of oral mucosal lesions, periodontal conditions (through Simplified Periodontal Record - SPR), oral hygiene, index of decayed, missing, and filled teeth (DMF-T), need of treatment and prosthesis status, if used, were evaluated. In addition to the registration of sociodemographic data such as sex, race, time on hemodialysis, family income and years of study.

These patients did not undergo any intervention and were allowed 45 days for clinical examinations and questionnaires to be reapplied in the form of an interview. Then the interventions were performed by a single dentist, and again the same deadline waited for further examinations and application of the mentioned questionnaires. This group of patients was examined and answered questionnaires at the baseline, 45 days after the initial examination and 45 days after the intervention. This group functioned as its own control. The questionnaires were applied by trained researchers.

The interventions performed were supra and subgingival scaling with ultrasound and 0.12% chlorhexidine mouthwash for one week, prophylaxis, extractions, cavity sealing with glass ionomer cement, restorations contouring, and resin restorations in anterior teeth. The proposed therapy aimed to reduce the number of pathogenic microorganisms, reduce inflammation and eliminate pain, restoring oral health conditions with minimal intervention.

**Health-Related Quality of Life assesment**

To assess Health-Related Quality of Life (HRQoL), the generic SF-36 assessment questionnaire in the form of an interview (Medical Outcomes Study 36- item Short-Form Health Survey),[24] adapted to Brazilian culture and validated by Ciconelli et al.,[25] was used.The oral health-related quality of life questionnaire, Impact Profile on Oral Health (OHIP-14), validated by Almeida et al. (2004), [26-28] was used. To assess self-esteem, the Rosenberg Self-Esteem Scale [29] was chosen.

To assess health-related quality of life and level of self-esteem, baseline questionnaires, 45 days after the initial assessment and 45 days after the intervention, were conducted as interviews. The sample size calculation was performed based on a previous pilot study, considering the standard deviation of 3.7 and the difference to be detected stipulated in 3 points, with a significance level of 5% and a power of 80%. 10% was added to the value found to prevent losses; thus, the total number of patients for investigation was 27.

**Statistical methods**

Statistical analyzes were performed using the SPSS® for Windows® statistical package (version 24.0). Initially, the variables were analyzed by descriptive statistical methods that provided relative and absolute frequencies, medians, quartiles, means, and standard deviations. Data normality and homogeneity of variance were verified by the Shapiro-Wilk, and Levene tests respectively. Data distribution was nonnormal, and the Friedman test were performed, with Wilcoxon posthoc test.

## RESULTS

The study population consisted of 27 chronic renal patients on hemodialysis. The mean age of this group was 53.56 (± 15.37), and 59.3% of the patients were male. Regarding other systemic diseases, 33.3% were hypertensive, and 22.2% were diabetic. The time of hemodialysis was quite variable, 37% had been on dialysis for less than 1 year, 25.9% between 1 and 3 years, and 37% for more than 3 years. The average duration of dental treatment was 15 days. Some habits were investigated, such as smoking and alcoholism. It was observed that 14.8% were former smokers, 44.4% were still smokers, 7.4% used alcohol, and 48.1% no longer consumed alcoholic beverages. It can also be observed that most patients had low income and low educational level (Table 1).

There was a statistically significant difference in the Rosenberg Self-Esteem Scale between the treated and baseline phase ($p = 0.005$) and the untreated phase ($p = 0.001$). After dental treatment, there was a statistically significant reduction in the psychological discomfort domain ($p = 0.030$) and the total score ($p = 0.005$) of the OHIP-14 questionnaire. In the evaluation of the SF-36 instrument, there was a statistically significant difference in the Physical aspect ($p = 0.002$), pain ($p = 0.036$) and fatigue ($p = 0.031$) domains between the evaluation times (Table 2).

## DISCUSSION

Dental treatment can positively affect the quality of life and self-esteem of patients undergoing hemodialysis. This study shows a reduction in psychological discomfort in the OHIP-14 questionnaire, physical aspects, pain and fatigue in the SF-36. Such data reinforce the importance of routine dental treatment for patients undergoing hemodialysis. This study is one of the few that investigates the quality of life-related to dental treatment in patients undergoing hemodialysis, and few studies that correlate quality of life

**Table 1.** Clinical and demographic data of patients undergoing hemodialysis.

| Variable | n (%) |
|---|---|
| **Gender** | |
| Men | 16 (59,3) |
| Women | 11 (40,7) |
| **Race** | |
| Mixed | 09 (33,3) |
| Black | 16 (59,3) |
| White | 02 (07,4) |
| **Hypertensive** | |
| Yes | 09 (33,3) |
| No | 18 (66,7) |
| **Diabetic** | |
| Sim | 06 (22,2) |
| Não | 21 (77,8) |
| **Time in hemodyalisis** | |
| 1 month to 1 year | 10 (37,0) |
| 1 year to 3 years | 07 (25,9) |
| Over 3 years | 10 (37,0) |
| **Smoking habit** | |
| Absent | 11 (40,7) |
| Present | 04 (14,8) |
| Former smoker | 12 (44,4) |
| **Drinking habit** | |
| Absent | 12 (44,4) |
| Present | 02 (07,4) |
| Former consumer | 13 (48,1) |
| **Income (family)** | |
| 1 a 2 minimum wages | 24 (88,9) |
| 3 a 4 minimum wages | 02 (07,4) |
| Over 5 salaries | 01 (03,7) |
| **Years of education** | |
| Illiterate | 01 (03,7) |
| 1 to 4 years | 10 (37,0) |
| 5 to 8 years | 06 (22,2) |
| 9 to 12 years | 03 (11,1) |
| Over 12 years | 07 (25,9) |

with oral health in this type of patients.[30-32]

Patients on dialysis have been reported to show a decline and have a poorer quality of life than the general population.[33-35] This fact can be seen in the results found in the baseline of the present study. In addition to physical limitations, it is suggested that hemodialysis patients are susceptible to mental distress, are unmotivated, and less frequently report their pain and suffering. The report that there is a close relationship between physical disorders and mental distress, reduced vitality, and lack of socialization in patients undergoing hemodialysis had been previously described in the literature.[36]

It can be observed that, after dental treatment, patients presented improvement in psychological discomfort and total OHIP dimensions in the OHIP-14 questionnaire, and physical pain, fatigue and physical aspects in SF-36. A study by Sertoz et al. 2009,[37] showed that social activities could positively interfere with self-esteem and depression in patients undergoing hemodialysis. Thus dental treatment may have improved social issues that positively impacted their self-esteem. This can also be related to pain and vitality. A lower perception of pain and fatigue could positively affect the self-esteem and quality of life of these patients.

Family income may be related to poor oral health,[38-39] since most patients earned up to one Brazilian minimum wage (225 US dollars) and the sum of their family income did not exceed three salaries. Access to dental services is known to be affected by annual income as well as educational level,[40] which was also low in the population studied. According to the World Health Survey 2003, lower-income Asians and Africans had more oral health problems than those with higher incomes.[41]

These patients usually have complex medical conditions, including high blood pressure and diabetes.[42] However, the vast majority does not show any of these systemic states in the present study, which can be considered a positive factor for the analysis in question and demonstrates the effectiveness of the treatment performed by the institution's health team, once a study by Vázquez et al. (2005)[43] showed similar results for these comorbidities.

This study presents positive points such as strict monitoring by the team and the fact that the patients were their own control, reducing the possibility of bias. The sample has a low number of patients, although the scientific literature consulted reports that most studies on oral health had a cross-sectional configuration, comparing different renal replacement therapies with healthy controls.[44-46]

## CONCLUSIONS

Dental treatment positively interferes with the quality of life and self-esteem of patients undergoing hemodialysis procedures. Further studies are needed to understand this interference better and whether the effect of the treatment is lasting.

**Table 2.** Quality of life at baseline, untreated phase and treated phase.

| | Variable | Baseline (a) Mean (DP) | Untreated (b) Mean (DP) | Treated (c) Mean (DP) | p* | Post-hoc** |
|---|---|---|---|---|---|---|
| **Self-esteem** | Rosenberg´s self-esteem | 20,30 (3,37) | 19,78 (3,47) | 22,59 (3,91) | **0,001** | a *x* b: 0,285<br>**a *x* c: 0,005**<br>**b *x* c: 0,001** |
| **OHIP** | Functional limitation | 3,37 (2,00) | 3,51 (2,06) | 3,07 (1,97) | 0,319 | |
| | Physical pain | 3,62 (1,96) | 4,14 (2,01) | 3,55 (1,98) | 0,167 | |
| | Psychologic discomfort | 3,62 (1,21) | 3,85 (2,12) | 2,85 (1,83) | **0,030** | a *x* b: 0,336<br>**a *x* c: 0,031**<br>**b *x* c: 0,014** |
| | Physical disability | 2,40 (1,21) | 2,77 (1,55) | 2,88 (1,76) | 0,386 | |
| | Psychologic disability | 3,37 (2,32) | 3,59 (2,32) | 2,85 (1,74) | 0,180 | |
| | Social disability | 2,96 (1,99) | 3,03 (1,95) | 2,40 (1,24) | 0,368 | |
| | Social disadvantage | 2,66 (1,51) | 2,66 (1,51) | 2,59 (1,44) | 0,999 | |
| | Total | 22,03 (10,93) | 23,59 (10,41) | 20,22 (10,09) | **0,005** | a *x* b: 0,354<br>**a *x* c: 0,003**<br>**b *x* c: 0,029** |
| **SF** | Functional capacity | 70,51 (26,87) | 64,44 (29,91) | 68,14 (27,10) | 0,850 | |
| | Physical aspect | 42,77 (38,03) | 49,07 (44,65) | 73,14 (39,17) | **0,002** | a *x* b: 0,395<br>**a *x* c: 0,006**<br>**b *x* c: 0,008** |
| | Pain | 82,31 (26,18) | 71,11 (28,15) | 72,59 (25,65) | **0,036** | **a *x* b: 0,012**<br>**a *x* c: 0,078**<br>b *x* c: 0,794 |
| | General health state | 57,22 (12,58) | 50,55 (18,31) | 52,96 (20,20) | 0,057 | |
| | Emotional state | 79,88 (15,34) | 72,44 (15,10) | 76,14 (20,19) | 0,291 | |
| | Emotional aspect | 74,07 (40,65) | 66,04 (41,98) | 79,01 (35,98) | 0,092 | |
| | Social aspect | 85,64 (20,12) | 81,94 (20,60) | 86,11 (23,34) | 0,405 | |
| | Fatigue | 73,88 (19,23) | 62,40 (19,62) | 67,50 (22,00) | **0,031** | **a *x* b: 0,001**<br>**a *x* c: 0,096**<br>b *x* c: 0,169 |

*Friedman test (p<0,05). **Wilcoxon test (p<0,05).

## ACKNOWLEDGMENTS

The authors would like to thank FAPEMIG for granting a scientific initiation scholarship to dental students who assisted in the clinical care of the patients.

## CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interests related to this study.

## FINANCING INFORMATION

This work was not funded.

## REREFENCES

1. Sesso RC, Lopes AA, Thomé SF, Lugon JR, Martins CT. Inquérito Brasileiro de Diálise Crônica 2014. J. Bras. Nefrol 2016; 38 (1): 54-61. https://doi.org/10.5935/0101-2800.20160009

2. Sociedade Brasileira De Nefrologia. Diretrizes brasileiras de doença renal crônica [citado em 2018 jul 5]. Available in: www.sbn.org.br/JBN/2631/v26e3s1p001.pdf.

3. Romão-Junior JE. Doença Renal Crônica: Definição, Epidemiologia e Classificação. Braz. J. Nephrol. J. Bras. Nefrol 2004; 26 (3 Suppl 1): 1-3.

4. Terra FS, Costa AMDD. Avaliação da qualidade de vida de pacientes renais crônicos submetidos à hemodiálise. Rev enferm UERJ. 2007; 15: 430-436.

5. Carreira L, Marcon SS. Cotidiano e trabalho: concepções de indivíduos portadores de insuficiência renal crônica e seus familiares. Rev Latino-Am Enfermagem 2003; 11: 823-831. https://doi.org/10.1590/S0104-11692003000600018

6. Castro M, Caiuby AVS, Draibe SA, Canziani MEF. Qualidade de vida de pacientes com insuficiência renal crônica em hemodiálise avaliada através do instrumento genérico SF36. Rev Assoc Med Bras 2003; 49(3): 245-249. https://doi.org/10.1590/S0104-42302003000300025

7. Souza RDS, Libério SA, Guerra RNM, Monteiro S, Silveira EJD, Pereira ALA. Avaliação da condição periodontal de pacientes renais em hemodiálise. Rev Assoc Med Bras 2005; 51(5): 285-289. https://doi.org/10.1590/S0104-42302005000500021

8. WHOQOL GROUP. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. Soc Sci Med 1995; 41 (1): 403-409. https://doi.org/10.1007/978-3-642-79123-9_4

9. Petersen, PE; Ogawa, H. Strengthening the prevention of periodontal disease: the WHO approach. Journal of periodontology 2005 Dec; 76 (12): 2187-2193. https://doi.org/10.1902/jop.2005.76.12.2187

10. Lindhe J, Karring T, Lang NP. Clinical periodontology and implant dentistry. 4th edition. Copenhagen: Blakwell Munskgaard; 2003.

11. Loesche WJ. Bacterial mediators in periodontal disease. Clin Infect Dis 1993; 16 (4): 203-210. https://doi.org/10.1093/clinids/16.Supplement_4.S203

12. Armitage, GC. Development of a classification system for periodontal diseases and conditions. Annals of periodontology 1999 Dec; 4 (1): 1-6. https://doi.org/10.1902/annals.1999.4.1.1

13. Silva MES, Villaça EL, Magalhães CS, Ferreira, EF. Impacto da perda dentária na qualidade de vida. Cien Saude Colet 2010 May; 15 (3): 841-850. https://doi.org/10.1590/S1413-81232010000300027

14. Sanches MH, Pestana JOM, Spolidorio LC, Denardin OVP. Cuidados odontológicos em portadores de insuficiência renal crônica. Rev. Paulis de Odontologia 2004 sep-oct; 26 (5): 29-32.

15. Filho JZC, Padilha WSM, Santos EKN. Cuidados odontológicos em portadores de insuficiência renal crônica. Rev Cirur e Traum BucoMaxilo-Facial 2007 Apr-Jun; 7 (2): 19-28.

16. Guevara HG, Mónaco G, Rivero CS, Vasconcellos V, Souza, DP, Raitz, R. Manejo Odontológico em pacientes com doença renal crônica. Rev Bras de Cien da Saúde 2014 Apr-Jun; 40 (12): 74-80. https://doi.org/10.13037/rbcs.vol12n40.2273

17. Frazão CMFQ, Ramos VP, Lira ALBC. Qualidade de vida de pacientes submetidos a hemodiálise. Rev. Enferm. UERJ 2011; 19 (4): 577-582.

18. Castro M, Caiuby AVS, Draibe SA, Canziani MEF. Qualidade de vida de pacientes com insuficiência renal crônica em hemodiálise avaliada através do instrumento genérico SF-36. Rev da Assoc Med Bras 2003; 49 (3): 245-249. https://doi.org/10.1590/S0104-42302003000300025

19. Silva AS, Silveira RS, Fernandes GFM, Lunardi VL, Backes VMS. Percepções e mudanças na qualidade de vida de pacientes submetidos à hemodiálise. Rev Bras de Enfer 2011; 64 (5): 839-844. https://doi.org/10.1590/S0034-71672011000500006

20. Grasselli CS, Chaves ECL, Simão TP, Botelho PB, Silva RR. Avaliação da qualidade de vida dos pacientes submetidos à hemodiálise. Rev Bras Clin Med 2012; 10 (6): 503-507.

21. Nepomuceno FC, Fonseca RC, Melo-Júnior IM, et al. Qualidade de vida e autoestima de pacientes renais crônicos na hemodiálise. Cader de Educ, Sau e Fisio 2015; 2 (3).

22. Proctor R., Kumar N., Stein A. Oral and dental aspects of chronic renal failure. J Dent Res 2005; 84 (3): 199-208. https://doi.org/10.1177/154405910508400301

23. Barros DCP, Cordova LHS, Velandia AAL, Souza DM. Avaliação dos hábitos de higiene bucal de pacientes em hemodiálise do hospital regional do vale do paraíba. Braz J Periodontol 2014; 24 (3): 7-18.

24. Ware JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I Conceptual frame work and item selection. Med Care 1992 Jun; 30 (6): 473-483. https://doi.org/10.1097/00005650-199206000-00002

25. Ciconelli RM, Ferraz MB, Santos W, Meinão I, Quaresma MR. Tradução para a língua portuguesa e validação do questionário genérico de avaliação de qualidade de vida SF-36 (Brasil SF-36). Rev Bras de Reumatol 1999 May-Jun; 39 (3): 143-150.

26. Almeida A, Loureiro CA, Araújo VE. Um estudo transcultural de valores de saúde bucal utilizando o instrumento OHIP-14 (Oral Health Impact Profile) na Forma Simplificada. Parte I: Adaptação cultural e linguística. UFES Rev Odontol 2004; 6 (1): 6-15.

27. Brennan DS, Singh KA, Spencer AJ, Roberts-Thomson KF. Positive and negative affect and oral health-related quality of life. Health Qual Life Outcomes 2006; 20 (4): 3. https://doi.org/10.1186/1477-7525-4-83

28. Hyde S, Satariano WA, Weintraub JA. Welfare dental intervention improves employment and quality of life. J Dent Res 2006; 85 (1): 79-84. https://doi.org/10.1177/154405910608500114

29. Sbicigo JB, Bandeira DR, Dell'Aglio DD. Escala de autoestima de Rosemberg (EAR): validade fatorial e consistência interna. Psico USF 2010; 15 (3): 395-403. https://doi.org/10.1590/S1413-82712010000300012

30. Proctor R, Kumar N, Stein A. Oral and dental aspects of chronic renal failure. J Dent Res 2005; 84 (3): 199-208. https://doi.org/10.1177/154405910508400301

31. Revicki DA, Osoba D, Fairclough D, Barofsky I, Berzon R, Leidy NK, Rothman M. Recommendations on health-related quality of life research to support labeling and promotional claims in the United States. Qual Life Res 2000; 9: 887-900. https://doi.org/10.1023/A:1008996223999

32. Sesso RC, Lopes AA, Thomé FS, Lugon JR, Watanabe Y, Santos DR. Relatório do Censo Brasileiro de Diálise Crônica 2012. J Bras Nefrol 2014; 36: 48-53. https://doi.org/10.5935/0101-2800.20140009

33. Feroze U, Noori N, Kovesdy CP, , Molnar MZ , Martin DJ, Reina-Patton A, Benner D, Bross R, Norris KC, Kopple JD, Kalantar-Zadeh K. Quality-of-life and mortality in hemodialysis patients: roles of race and nutritional status. Clin J Am Soc Nephrol 2011; 6 (5): 1100-1111. https://doi.org/10.2215/CJN.07690910

34. Evans RW, Manninen DL, Garrison LP, Hart LG, Blagg CR, Gutman RA, Hull AR, Lowrie EG. The quality of life of patients with end-stage renal disease. N Engl J Med 1995; 312: 553-559. https://doi.org/10.1056/NEJM198502283120905

35. Lowrie EG. Chronic dialysis treatment: Clinicaloutcome and related processes of care. Am J Kidney Dis 1994; 24: 255-266. https://doi.org/10.1016/S0272-6386(12)80191-0

36. De-Pasquale C, Pistorio ML, Corona D, Mistretta UM, Zerbo D, Sinagra N, Giaquinta UM, Tallarita T, Esker B, Mociskyte D, Leonardi UM, Gula R, Veroux P, Veroux M. Correlational study between psychicsymptoms and quality of life among hemodialysis patients older than 55 years of age. Transplant Proc 2012; 44: 1876-1878. https://doi.org/10.1016/j.transproceed.2012.06.015

37. Sertoz OO, Ascı G, Toz F. Planning a Social Activity to Improve Psychological Well-being and Quality of Life of Hemodialysis Patients: A Pilot Study. Ther Apher Dial 2009; 13 (4): 366-372. https://doi.org/10.1111/j.1744-9987.2009.00690.x

38. Edelstein BL. Disparities in oral health and access to care: findings of national surveys. Ambul Pediatr, 2002; 2 (2 Suppl): 141-147. https://doi.org/10.1367/1539-4409(2002)002<0141:DIOHAA>2.0.CO;2

39. Gilbert GH, Duncan RP, Shelton BJ. Social determinants of toothloss. Health Serv Res, 2003; 38 (6 Pt 2): 1843-1862. https://doi.org/10.1111/j.1475-6773.2003.00205.x

40. Kotzer RD, Lawrence HP, Clovis JB, Matthews DC. Oral health-related quality of life in an aging Canadian population. Health Qual Life Outcomes, 2012;10:50. https://doi.org/10.1186/1477-7525-10-50

41. World Health Survey 2003 results World Health Organization. [citado em 2018 jul 5]. Disponível em: http://ww.who.int/healthinfo/survey/whsresults/en/index/html.

42. Afsar B. Sociodemographic, clinical, and laboratory parameters related with presence of regular tooth brushing in hemodialysis patients. Ren Fail 2013; 35 (2): 179-184. https://doi.org/10.3109/0886022X.2012.747131

43. Vazquez I, Valderrabano F, Fort J, Jofré R, López-Gómez JM, Moreno F, Sanz-Guajardo D. Psychosocial factors and health-related quality of life in hemodialysis patients. Qual Life Res 2005; 14: 179-190. https://doi.org/10.1007/s11136-004-3919-4

44. Kimmel PL, Peterson RA, Weihs K.L., et al.. Psychosocial factors, behavioral compliance and survival in urban hemodialysis patients. Kidney Int, 1998; 54; 245-254. https://doi.org/10.1046/j.1523-1755.1998.00989.x

45. Kshirsagar AV, Craig RG, Beck JD, et al.. Severe periodontitis is associated with low serum albumin among patients on maintenance hemodialysis therapy. Clin J Am Soc Nephrol, 2007; 2(2); 239-244. https://doi.org/10.2215/CJN.02420706

46. Lin CC, Lee BO, Hicks FD. The phenomenology of deciding about hemodialysis among Taiwanese. West J NursRes, 2005; 27; 915-929. https://doi.org/10.1177/0193945905278390