Nursing intervention in health promotion for people on hemodialysis, disciplinary perspective: Integrative review

Intervención de enfermería en la promoción de salud de las personas en hemodiálisis, una mirada desde la disciplina: Revisión integrativa

Intervenção de enfermagem na promoção da saúde das pessoas em hemodiálise, uma visão da disciplina: Revisão integrativa

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Received: 10/14/2019

Accepted: 03/20/2020

Abstract: People with end-stage renal disease on hemodialysis are susceptible to complications that can be prevented with health promotion, these complications can lead to disability and even early death, nurses are a part of the healthcare team; which is why they have a key role in education to improve the quality of life for this group of people. The present review intends to know the state-of-the-art, in relation to nursing intervention in health promotion for people with end-stage renal disease undergoing hemodialysis and its impact on quality of life. The formulation of the research question was used according to the acronym "PICO" (patients, intervention, comparison, results); subsequently, the search for the information was initiated in different databases of the repository of the University of Concepción: Pub Med, Web of Science, Virtual Health Library, Scielo and Scopus, in attempt to retrieve the greatest amount of information; seven scientific articles that met inclusion and exclusion criteria were finally selected. It was shown that the interventions were focused on diet, fluid intake, empowerment, self-efficacy and self-care; and one of them used Nola J. Pender's middle-range theory "Health Promotion Model". Finally, it concludes that the nursing intervention in promotion in this group of people improves their quality of life.

Keywords: quality of life; nursing; chronic renal failure; health promotion; integrative review

Resumen: Las personas con Insuficiencia renal crónica terminal en hemodiálisis están susceptibles a complicaciones que pueden prevenirse con promoción de la salud. Estas complicaciones pueden provocar discapacidad e incluso muerte precoz, enfermería forma parte del equipo de salud; razón por la cual, tienen un rol clave en la educación para mejorar la calidad de vida de este grupo de personas. La presente revisión pretende conocer el estado del arte, en relación con la intervención de enfermería en la promoción de la salud en las personas con insuficiencia renal crónica terminal sometidas a hemodiálisis y su impacto en la calidad de vida. Se utilizó la formulación de la pregunta según el acrónimo "PICO" (pacientes, intervención, comparación, resultados); posteriormente, se inició la búsqueda de la información en diferentes bases de datos del repositorio de la Universidad de Concepción: Pub Med, Wef of Science, Biblioteca virtual de Salud, Scielo y Scopus, de manera que se trató de recuperar la mayor cantidad de información; se seleccionaron finalmente siete artículos científicos que cumplieron criterios de inclusión y exclusión. Se evidenció que las intervenciones fueron enfocadas a la alimentación, ingesta de líquidos, empoderamiento, autoeficacia y autocuidado; y una de ellas utilizó la Teoría de rango medio de Nola J. Pender "Modelo de Promoción de Salud". Finalmente, se concluye que la intervención de enfermería en la promoción en este grupo de personas mejora su calidad de vida.

Palabras claves: calidad de vida; enfermería; insuficiencia renal crónica; promoción de la salud; revisión integrativa

Resumo: Pessoas com insuficiência renal crônica terminal em hemodiálise são suscetíveis a complicações que podem ser evitadas com a promoção da saúde. Essas complicações podem causar incapacidade e até morte precoce, a enfermagem faz parte da equipe de saúde; é por isso que eles têm um papel fundamental na educação para melhorar a qualidade de vida desse grupo de pessoas. Esta revisão tem como objetivo conhecer o estado da arte, em relação à intervenção de enfermagem na promoção da saúde em pessoas com insuficiência renal crônica em fase terminal em hemodiálise e seu impacto na qualidade de vida. A questão foi formulada de acordo com a sigla "PICO" (pacientes, intervenção, comparação, resultados); Posteriormente, iniciou-se a busca de informações em diferentes bancos de dados do repositório da Universidade de Concepción: Pub Med, Wef of Science, Biblioteca Virtual em Saúde, Scielo e Scopus, para tentar recuperar a maior quantidade de informações. ; Por fim, foram selecionados sete artigos científicos que atendiam aos critérios de inclusão e exclusão. Evidenciou-se que as intervenções foram focadas em alimentos, ingestão de líquidos, empoderamento, autoeficácia e autocuidado; e um deles usou o "Modelo de Promoção da Saúde" de Nola J. Pender. Por fim, conclui-se que a intervenção de enfermagem na promoção desse grupo de pessoas melhora sua qualidade de vida.

Palavras-chave: qualidade de vida; enfermagem; insuficiência renal crônica; promoção da saúde; revisão integrativa

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Introduction

In the 21st century, there have been experienced profound demographic and epidemiological changes, which turn into an increase in the prevalence and incidence of Chronic Non-Communicable Diseases (CNCDs); these diseases threaten social and economic development, health and life of millions of people in the world (1). According to the World Health Organization (WHO) and the Pan American Health Organization (PAHO) in 2014, they state that diabetes and high blood pressure are part of the CNCD group, that along with aging, are the main risk factors which lead people to the chronic kidney disease (CKD), this affects one out of every ten adults worldwide, which requires urgent attention (1,2), causing clinical, social and economic consequences for sick people, their families and health systems (1).

The last stage of CKD is Chronic End-Stage Renal Failure (ESRD), which leads to the need to choose a form of treatment such as peritoneal dialysis, hemodialysis, or transplantation to replace renal function (3). The incidence of new cases in end-stages generates a great demand, which currently covers more than one million patients in the world who live thanks to these treatment methods (4).

Hemodialysis, which is considered a safe procedure, seems to be the treatment of choice for patients with ESRD, however, together with the disease it generates alterations in physical activity, causes stress, social isolation, dependency and uncertainty regarding health and well-being (5.6); also, it is possible to progress to mourning and / or depression (7), turning into a sacrifice for the patients, their relatives or those living together; especially, due to the poor Quality of Life (QoL), complications, disability, and even early death (5,6).

The QoL according to the WHO is considered as " an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns " (8). The QoL of people with ESRD is substantially affected in terms of physical, mental, and social health, general perception of health, and burden of disease, due to dietary restrictions, changes in physical image and social relationships, in family and work; and finally, because they must adapt to illness, treatment, and the appearance of physical, emotional, and spiritual problems (9,10,11).

Promoting QoL in people with ESRD on hemodialysis could be considered as a challenge to develop the empowerment of patients in their treatment, allowing their participation in their care and in control of their own life (6,12), and achieve emotional, adaptive, cognitive and behavioral conduct (7), to deal with their life experience. The essence of Nursing is the care of the human being, which allows the direct interaction of the binomial "nurse - user " in particular cases, as in the ESRD; this link is important because it allows nursing staff to apply the strategy of health promotion, from their nursing understanding, which will later influence the QoL of patients with kidney diseases (12).

The QoL is a research topic that within the nursing discipline has been the subject of its study, so this work seeks to review the literature published during the last 18 years, with the aim of knowing the state-of- the-art, regarding to nursing interventions in health promotion that improve QoL in people with ESRD receiving hemodialysis, in order to demonstrate the importance of nursing work as a discipline and profession, in this group of users.

Material and Methods

In this integrative review, there was used the methodology suggested by evidence-based nursing practice (EBP), which tries to provide the best evidence in research, relating it to clinical expertise (13). There were considered the first three steps of Melnyck and Fineout-Overholt, which are:

- a. Ask the question of clinical importance,
- b. Collection of the best and most relevant evidence.
- c. Critically evaluate the evidence,

To formulate the research question, the PICO format was used, in which the research question was written as follows: Do ESRD patients receiving hemodialysis improve the quality of life with nursing intervention in health promotion?

A review was carried out in search of scientific literature, that answers to this question; the databases: Pub Med, Web of Science, Virtual Health Library, Scielo and Scopus; for which the following DeCS and MeSH descriptors were used, in Spanish, English and Portuguese: Promoción de la salud / Health promotion / Promoção de Saude - Enfermería / Nursing / Enfermagen - Insuficiencia renal crónica / Renal insufficiency chronic / Insuficiencia renal crónica - Calidad de Vida / Quality of life / Qualidade de Vida); conjugated with the Boolean operator AND, due to the characteristics of the investigation.

The inclusion criteria included: quantitative primary studies; written in Spanish, English and Portuguese; published between the years: 2000 and 2018; whose sample were people with ESRD receiving hemodialysis. All the investigations carried out were excluded in the exclusion criteria: in people under 18 years of age; receiving peritoneal dialysis or kidney transplant; by other professionals who do not belong to the nursing discipline; secondary as integrative, systematic reviews and meta-analyzes; case studies; qualitative and whose texts are not available on the web.

With an initial compilation of 62 articles from the scientific literature, in the first stage we proceeded to apply our own filters to the databases; in order to apply the inclusion and exclusion criteria at the second stage; and finally, in the third stage, process the articles selected for review (Fig. N°1). In relation to ethical considerations, copyright has been respected by placing the bibliographic citation of each of the articles used for this research.

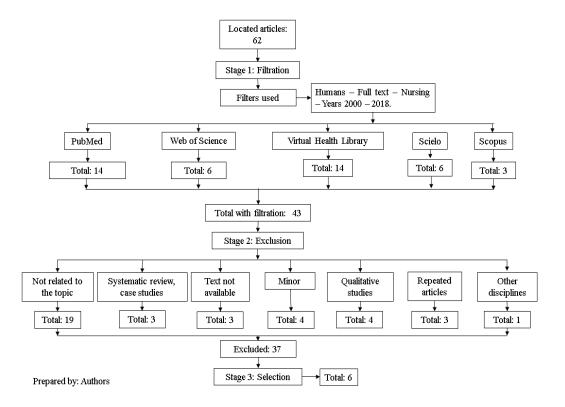


Figure N $^{\circ}$ **1.** Flow chart of the scientific literature review. 2018.

Results

With the 6 studies that are related to the subject and that met the proposed requirements, we proceeded to summarize them (Table N°1) and analyze them.

Table N $^{\circ}$ **1.** Scientific articles selected for the review. 2018.

Title, country and year of publication	Research design	Nursing intervention		Data collection	Results
1.Empowerment of patients with end-stage renal disease - a randomized controlled trial. China 2003(14).	Randomized controlled trial	Empowerment program, care of self- efficacy and depression in patients with end-stage renal disease	•	Empowerment Scale (ES) modified by Anderson. Strategies used by people to promote health (SUPPH). Beck Depression Inventory (BDI).	The effects of the intervention result in levels of empowerment in self-care self-efficacy and for depression are significantly higher in the intervention group, so this group felt more able to carry out their self-care and had lower levels of depression.
2. A programme to encourage participation of haemodialysis patients in an exercise regimen. Japón 2009 (15).	Experimental	Program for patients receiving hemodialysis (HD) to encourage their continued participation in an exercise regimen.	•	None only existed the Support and Exercise Program.	The continuity in participation of each patient was observed during the exercise program. All 14 participants (100%) in the intervention group and 10 participants out of a total of 16 (62.6%) in the control group participated during the nine weeks. Fisher's exact test was performed with an observed significance level of 0.019. The continuous participation of patients in the intervention group was significantly higher than that of patients in the control group.
3. Predictors of dietary and fluid non-adherence in Jordanian patients with end-stage renal disease receiving haemodialysis: a cross-sectional study. Jordania 2012(7).	Descriptive, correlational and cross- sectional study design	Diet and fluid educational program for Jordanian patients with end-stage renal desease receiving hemodialysis using Pender's health promotion program.	•	Dialysis Diet and Fluid Nonadherence Questionnaire (DDFQ). Beck Depression Inventory-II (BDI-II). Quality of Life Index (QLI). Dialysis Patient- Perceived Exercise Benefits and Barriers Scale (DPEBBS). Multidimensional Perceived Social Support Scale.	27% of patients showed total commitment to dietary guidelines and 23.2% to fluid guidelines for the past 14 days. Using Pearson r to examine relationship between study variables, it is analyzed that depression (M = 18.8 \pm 11.4) had a significant negative effect on quality of life domains (with importance r = -0.60, p < 0.001; with satisfaction, r = -0.32, p < 0.001). The application of multiple linear regression revealed a predictive model with only two variables: age (B = -0.22, p = 0.05) and residual renal function (B = -0.23, p = 0.012) for the lack of dietary adherence.

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Continue Table N ° **1.** Scientific articles selected for the review. 2018.

4. Effects of individualized exercise program on physical function, psychological dimensions, and health – related quality of life in patients with chronic kidney disease: A randomized controlled trial in China. China 2016 (16).	Randomized controlled trial	12-week home exercise program on physical function, psychological dimesions and health-related quality of life for patients with chronic kidney desease	•	6 – minute walk test (6MWT). 10 repetition of the sit-to-stand test (STS10). Hospital Anxiety and Depression (HAD) scale. Self – Efficacy for Exercise (SEE) scale. Kidney Disease and the Quality of Life (KDQOL – 36 TM).	The differences between the exercise group and the control group were statistically significant for a 6-minute walking distance, the time to complete 10 repititions of the sit-to-stand test, self-efficacy for exercise, anxiety and depression and all domains of health-related quality of life after 12-week exercise was significant in the intervention group.
5. Promoting self-care in patients on hemodialysis: application of the Nola Pender Diagram. Brazil 2017 (17).	Descriptive study with intra-group design.	Self-care workshop using the Nola Pender Diagram	•	Application form (Nursing consultation mediated by sensitive/ therapeutic listening).	The nursing guidelines led individuals to acquire Health Promotion Model behaviors in order to satisfy their well-being needs, because they value life. The workshop stimulated the development of reflective consciousnes, providing conditions for reflection on its reality and harmonization with life.
6. Educational support and lifestyle of patients receiving hemodialysis treatment. Mexico 2017 (18).	Pre- experimental study	Educational program under the theoretical reference of Oremwith focus on three dimensions: Responsibility for Health, Nutrition and Hygiene, consisted of ten half-hour sessions twice a week during the first hour of patient treatment.	•	Questionnaire about the lifestyle of the patient receiving hemodialysis treatment.	Among the characteristics, it was found that the average age of 36.4 ± 16.7 years, with the same distribution for both men and women (n=11); 68.1% (n=15) of the patients are economically active, reporting an average time of 20.6 ± 15.6 months of hemodialysis treatment. A median value of the lifestyle (responsibility for life, hygiene and nutrition) was obtained in the preintervention phase of 92 and of 107.5 in the post-intervention phase. With a significant difference between the two of p<0.001.

Prepared by the authors

The estimated period of time for searching articles for the review was the last 18 years, finding two articles (14,15) published in the period 2000-2010 and four in the last six years (7,16,17,18).

Four of the published investigations were carried out on the Asian continent (7,14,15,16) and the rest were carried out in Brazil and Mexico (17,18). Regarding the research study designs,

four of them were experimental (14,15,16,18) and the others were correlational or descriptive (7,17).

The data collection questionnaires of these studies were varied according to the objectives of each investigation. The Beck Depression Inventory in its versions BDI (14) and BDI-II (7), and the Kidney Disease Quality of Life Questionnaire in its version KDQOL-36 (16) coincide in two investigations. In addition are used: the modified Anderson Empowerment Scale (ES), Strategies used by people to promote health (SUPPH) (14); Dialysis Diet and Fluids Non-Adherence Questionnaire (DDFQ), Quality of Life Index (QLI), Dialysis Patient-Perceived Exercise Benefits and Barriers Scale (DPEBBS), Multidimensional Scale of Perceived Social Support (7); 6-minute walk test (6MWT), 10 repetitions of the sit-to-stand test (STS10), Hospital Anxiety and Depression Scale (HAD), self-efficacy for exercise scale (SEE) (16), Application form (Nursing consultations mediated by sensitive / therapeutic listening) (17); Questionnaire about the lifestyle of the patient receiving hemodialysis treatment (18).

Among the main results of the experimental studies, it should be noted that the nursing intervention is effective in people with ESRD receiving hemodialysis, for: the empowerment of the individual in the pathology and its treatment (14), increase self-efficacy (14), self-care (14) and decrease depression (14); the accompaniment by professional nursing staff in an exercise regimen in the hemodialysis room allowed that 100% of the participants in the experimental group would not drop out of the program in relation to the dropout of 62.6% of the control group (15); 27% of the patients showed a total commitment to the dietary guidelines and 23.2% to the fluid guidelines during the last 14 days, it was analyzed that depression had a significant negative effect on quality of life domains (7); psychological dimensions such as self-efficacy, anxiety and depression, and all domains of health-related quality of life after a twelve-week exercise improved in the intervention group (16); Nursing applies the middle-range theory of Nola J. Pender "Health Promotion Model" leading participants to acquire behaviors in order to satisfy their well-being needs, because they value life, with a workshop that stimulated the development of reflective consciousness, providing the conditions for reflection on its reality and harmonization with life (17); Nursing educational support on the lifestyle that includes responsibility for health, hygiene and nutrition obtained a median value of the lifestyle (responsibility for life, hygiene and nutrition) in the pre-intervention phase of 92 and 107.5 in the post-intervention phase, with a statistically significant difference between the two of p < 0.001 (18).

Discussion

The reviewed studies effectively demonstrate that empowerment in relation to its pathology and treatment, by means of a nursing intervention, in people with ESRD on hemodialysis, increases self-care and self-efficacy, reducing depression and improving quality of life (14).

Most of the investigations are promoted from 2012; nursing interventions are obviously aimed at health promotion to improve the QoL of people on hemodialysis; considering physical activity, diet, fluid intake, self-efficacy, and self-care as determining variables of a good QoL (14,15,17,19).

The recommended physical exercises for this group of people are low intensity aerobics, the use of the arm where the fistula or arterio-venous graft is located should be avoided, this reduces sedentary lifestyle and increases well-being (16,20), thereby increasing the quality of life.

On the other hand, non-adherence to diet and fluid intake is due to the individual patient characteristics in relation to their culture and this parameter of lifestyle is the most difficult to modify in patients (7); Based on this statement, it has been shown that nursing interventions manage to modify self-efficacy and self-care, making people feel safe in their own health care, significantly reducing their depression (14).

It is important to mention that for the nursing discipline, Nola J. Pender's middle-range theory, "Health Promotion Model" (HPM), was used in one of the studies whose authors conclude that linking theory to practice admits a bond of empathy and trust in the client's relationship with health professionals, which provides a valuable possibility of interaction to jointly plan activities, actions and self-care behaviors (17), which becomes predominant for the discipline of nursing and its professional role.

Finally, it is important to mention that in another research it was shown that the nursing educational support has led everyone to develop a protective lifestyle, which makes the role of nursing in promoting healthy behaviors important (18).

Conclusion

In relation to the initial approach of this review, which was to know, whether the health-promoting nursing intervention improves the quality of life of people who have ESRD and are receiving hemodialysis; it concludes that the intervention carried out by nursing professionals as part of the multidisciplinary health care team of hemodialysis improves the quality of life of this group of affected population; therefore, nursing interventions are preponderant in improving the QoL of people with ESRD; however, it is important to emphasize that research in this area must continue, mostly to highlight this intervention in order to improve the state-of-the-art.

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How to cite: Méndez Barbecho, N., Rodríguez Campo, V., Orellana Yáñez, A., Valenzuela Suazo, S. Nursing intervention in health promotion for people on hemodialysis, disciplinary perspective: Integrative review. Enfermería: *Cuidados Humanizados*. 2020; 9(1): 54-64. Doi: https://doi.org/10.22235/ech.v9i1.2166

Contribution of the authors: a) Study conception and design, b) Data acquisition, c) Data analysis and interpretation, d) Writing of the manuscript, e) Critical review of the manuscript. N.M.B. has contributed in a,b,c,d,e; V.R.C. in a,b,c,d,e; S.L. in a,c,d,e; A.O.Y. in a,c,d,e; S.V.S. in c,d,e.

Managing scientific editor: Dra. Natalie Figueredo