

◆ Revisão Sistemática

Benefícios das intervenções de enfermagem indutoras do riso e do humor em pessoas submetidas a hemodiálise

Benefits of laughter-inducing and humor nursing interventions in people undergoing hemodialysis

Beneficios de las intervenciones de enfermería que provocan la risa y el humor en personas sometidas a hemodiálisis

Maria Alejandra Macedo ¹, Violeta Sighi ², Helena Maria Guerreiro José ³, Ana Vanessa Antunes ⁴, Olga de Sousa Valentim ⁵, Luís Manuel Mota Sousa ⁶

¹ RN, Centro Hospitalar Universitário Lisboa Central.; ² RN, Hospital Beatriz Ângelo; ³ RN, CNS, PhD, Professora Adjunta na Universidade do Algarve. Portugal. UICISA-E. Coimbra; ⁴ RN, CNS, PhD, Professora Auxiliar na Escola Superior de Saúde Egas Moniz. CIEM. Almada; ⁵ RN, CNS, PhD, Doutora em Enfermagem. Especialista em Enfermagem de Saúde Mental e Psiquiátrica. Professor Adjunto na Escola Superior de Saúde Atlântica. Barcarena. CINTESIS, Grupo NursID; ⁶ RN, CNS, PhD, Professor Adjunto na Universidade de Évora

Corresponding author: xana_macedo@msn.com

Resumo

Objetivo: conhecer os benefícios na saúde e bem-estar das intervenções de Enfermagem indutoras do riso e do humor em pessoas submetidas a hemodialise.

Métodos: Revisão Sistemática da Literatura (RSL). A pesquisa foi realizada entre novembro de 2018 e maio de 2019. Os artigos foram selecionados através das plataformas Biblioteca Virtual em Saúde (BVS) e EBSCOhost, e foi complementada pelo Google Académico. Foram pesquisados artigos publicados entre 2014 e 2019 e utilizaram-se como critérios de inclusão artigos publicados com o idioma português, inglês e espanhol, disponíveis com texto integral, referentes a pessoas adultas/idosas submetidas a hemodiálise, que incluem estudos primários experimentais e quasi-experimentais e que utilizem intervenções de enfermagem indutoras do riso e do humor.

Resultados: Selecionaram-se cinco artigos, com estudos quase-experimentais, que apresentam o controlo e diminuição da pressão arterial, a qualidade de vida, a promoção do bem-estar (felicidade e satisfação com a vida em geral) a diminuição da depressão, do stresse e ansiedade e o aumento do sentido do humor como os principais benefícios das intervenções de enfermagem indutoras do riso e do humor.

Conclusão:

Intervenções que causam riso e humor têm benefícios de saúde e bem-estar para as pessoas em hemodiálise e as ajudam a lidar com a doença e o tratamento. **Palavras-chave:** Meias de Compressão; Bandagens Compressivas; Úlcera da Perna.

Abstract

Objective: To know the health and welfare benefits of Laughter-inducing and humor nursing interventions in people with CKD undergoing haemodialysis.

Methods: Systematic Review of Literature (RSL). The research was conducted between November 2018 and May 2019. Articles were selected through the Biblioteca Virtual em Saúde (BVS) and EBSCOhost databases, whose research was complemented by Google Scholar. Articles published between 2014 and 2019 were searched and articles published with the Portuguese, English and Spanish language were used as criteria for inclusion, articles available with full text, referring to elderly / elderly people undergoing haemodialysis, which included primary experimental studies and quasi-experimental and that use as intervention humor, laughter-inducing therapy.

Results: Five articles were selected, with quasi-experimental studies showing the control and reduction of blood pressure, the quality of life, the promotion of well-being (happiness and satisfaction with life in general), the reduction of depression, stress and anxiety and increased sense of humor are the main benefits of laughter-inducing and humor nursing interventions.

Conclusion: Laughter-inducing and humor nursing interventions have benefits in the health and well-being of people undergoing haemodialysis and help them cope with disease and treatment.

Keywords: Laughter Therapy; Nursing; Wit and Humor as Topic; Humor Therapy, Chronic Kidney Disease; Haemodialysis

1. Introduction

Chronic Kidney Disease (CKD) affects people worldwide and is considered a public health problem (Paula et al., 2017). Due to its high morbidity and mortality rate it still has a negative impact on quality of life (QoL) (Sousa, Antunes, Marques-Vieira, Valentim, & José, 2017).

CKD is degenerative, progressive and has a slow evolution. It is characterized by impaired renal function, where kidneys ability to excrete metabolites in the body is lost and is determined through kidney injury markers or both for at least three months. (Sousa, Marques-Vieira, Severino, Rosado & José, 2016; Sousa et al., 2019a). Haemodialysis is one of the main treatments for patients with end-stage kidney failure (Paula et al., 2017).

People undergoing haemodialysis suffer a depersonalization process. Throughout the treatment they install a life routine focused only on the disease. The hospital routine, associated with limitations and restrictions, leads to loss of autonomy on CKD patients' life habits, leading to a passive and treatment-dependent posture (Paula et al., 2017). In this context, symptoms of depression may appear, which is closely related to decreased QoL and increased mortality (Sousa et al., 2017). Haemodialysis negatively affects overall health, QOL and well-being, having an influence on physical, mental, social, emotional and spiritual performance. It also affects the sense of humor (Sousa et al., 2019d).

In recent years there have been several studies concerning the humor intervention in nursing and has been found that it has several benefits both in health and in improving people's QOL and well-being (Santos et al., 2016).

Nursing Interventions Classification (NIC) considers humor as an intervention (Bulechek, Butcher, Dochterman, & Wagner, 2018, p. 211) and the International Council of Nurses (2016)

in the International Classification for Nursing Practice (ICNP) defines it as a resource and an intervention.

According to NIC, humor is defined as “*facilitating the patient to perceive, evaluate and express what is funny, fun or playful in order to establish relationships, assess tensions, release feelings of anger, facilitate learning or face painful feeling*” (Bulechek, et al., 2018, p. 211).

The humor intervention has benefits that focus on promoting QoL and well-being, helping to confront difficult situations, reducing tension, stress, anxiety and discomfort. Allows distraction, externalization of feelings and emotions, increases pain tolerance and strengthens the immune system (Santos et al., 2016).

Laughter has positive emotional effects associated with the disease as it will improve humor, which has an impact on reducing pain, anxiety, stress, depression and fatigue. It also increases immunity and improves overall life satisfaction and QoL (Bennett et al., 2014; Bennett et al., 2015).

The “humor” nursing intervention also benefits nurses by: improving the hospital experience, increasing self-esteem and confidence, improving interaction and communication between caregiver and sick person, increasing productivity, promoting a good professional environment resulting from the increase and maintenance of relationships between professionals, allowing the management of emotions, and decreasing tensions. Humor also makes the care provided more humanized (Sousa et al., 2018c; Sousa et al., 2018d).

Therefore, the objective of this review was to know the health and welfare benefits of Laughter-inducing and humor nursing interventions in people with CKD undergoing haemodialysis.

2. Methods

A Systematic Literature Review (SLR) was conducted, which is characterized by an explicit and reproducible research method, which consists in the synthesis and rigorous analysis of primary studies related to a particular theme, and performed by researchers, academics and health professionals. (Sousa, Firmino, Marques-Vieira, Severino, & Pestana, 2018b).

The research question was as following” “What are the health and welfare benefits of laughter-inducing and humor nursing interventions in people with CKD undergoing haemodialysis?”

This question was structured according to the PICOS model, a variant of PICO. (Sousa et al., 2018a). This methodology allowed to direct the focus of the research, using the following acronym:

P (Patient)	People with CKD undergoing hemodialysis
I (Intervention)	Laughter-Inducing Therapies and Humor Therapy in Nursing
C (Comparison)	Control Group
O (Outcome)	Health and welfare benefits
S (Study design)	Experimental and quasi-experimental studies

Table 1 – PICOS

For the elaboration of this investigation we defined as general objective: to know the health and welfare benefits of laughter-inducing and humor nursing interventions in people with CKD undergoing haemodialysis.

Specific objectives include: to identify laughter-inducing and humor interventions that nurses can use in care delivery, and to identify the benefits of humorous interventions in people with CKD in the context of haemodialysis.

The inclusion and exclusion criteria defined for the research are expressed in table 2.

	Inclusion criteria	Exclusion Criteria
P – Patient	Adult / Elderly. Person with CKD undergoing hemodialysis.	Child / young Referring to pediatrics. Not undergoing hemodialysis
I – Intervention	Humor intervention, laughter-inducing therapy	Clown therapy and playful therapy / play activities.
C - Comparison	Control group. Pre and post intervention	Without Control group or pre and post intervention
Study type	Experimental and quasi-experimental primary studies	Secondary and tertiary research and gray literature
Language	Portuguese, English and Spanish.	Articles other than Portuguese, English and Spanish.
Publication period	Last 5 years (2014-2019).	Previous to 2014.
Article availability	Full texto.	Those requiring payment.

Table 2 - Inclusion and exclusion criteria

The research of the articles was performed in the following platforms: Biblioteca Virtual em Saúde (BVS) and EBSCOhost (CINAHL and MEDLINE), complemented by Google Scholar.

The previously established descriptors were: Laughter Therapy; Nursing; Wit and Humor as Topic; Humor Therapy, Chronic Kidney Disease; Haemodialysis.

Through the descriptors and the Boolean conjugation (AND, OR, NOT), the following equation was formulated: ((Wit and Humor as Topic) OR (Laughter Therapy) OR (Humor Therapy)) AND (Chronic Kidney Disease) AND (Haemodialysis) AND (Nursing)

After using this equation, the PRISMA identification flow was applied. It consists in a sequence of steps that gradually “funnels” the research. In the last step of this flowchart a set of articles were obtained and analyzed carefully.

Data extraction was performed independently by two reviewers.

In order to evaluate the quality of the selected studies, some tables developed by JBI were used. These tables include between nine and eleven items and allow the studies to be classified according to a level of evidence (LE) and methodological rigor. Each item has four options, namely: Yes, if the criteria is verified; No, it is not verified; It is not clear, it is not possible to assess the criteria: and Not applicable (JBI, 2011).

The articles LE should be analyzed in order to safeguard the fidelity of the results and conclusions, since the new knowledge generated will be introduced as a current evidence (Sousa, Marques-Vieira, Severino & Antunes, 2017). Full reading was performed and the quality and LE evaluation of the included articles was discussed by all authors.

The Registered Nurses Association of Ontario (RNAO) adopted in 2007 a classification for the LE consisting of 6 levels: Ia, Ib, IIa, IIb, III e IV (Sousa et al., 2017). In this research, for the evaluation of the LE we considered the classification level IIa: “Evidence from at least one well-designed, without randomization”; and the level IIb: “Evidence from at least one other well-designed quasi-experimental study” (Sousa et al., 2017, p.22).

Articles that obtained at least 75% quality were included in the review and from these the information was extracted as following: article title, year, authors, country where the study was conducted, population (sample) present in the study, main objective, key findings / conclusions, study design and level of evidence.

3. Results

The following figure shows the search and selection process elaborated during the research work (PRISMA) (Figure 1).

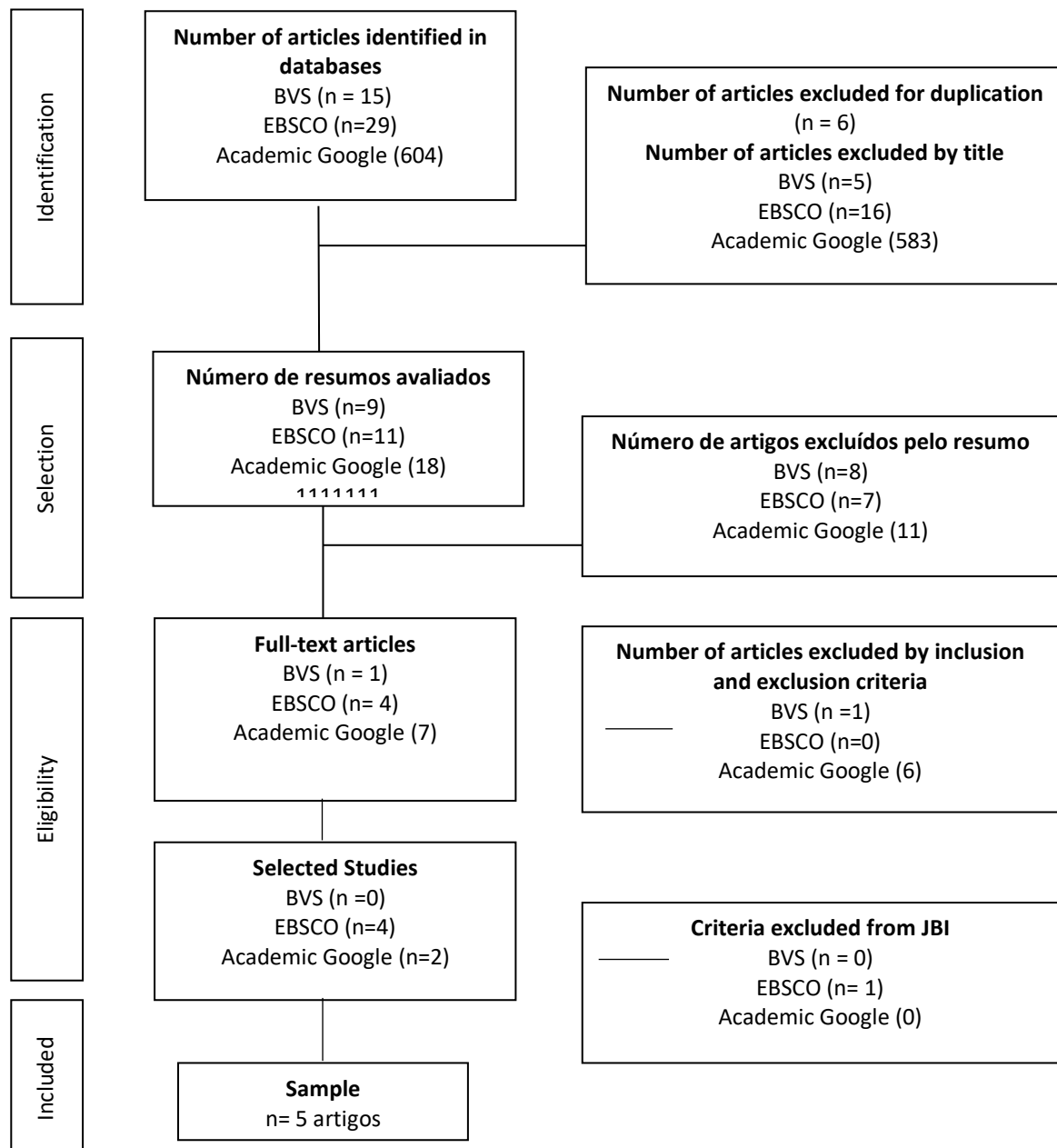


Figure 1 - Prisma Flow Diagrams

Through the following equation: (Laughter and humor therapy in dialysis) 604 articles were obtained from which only 3 were selected for analysis.

A complementary search was performed on academic google, and two more articles were selected. For the synthesis of the studies, a table was constructed in order to summarize and organize the data extracted from the five selected articles and analyzed for the accomplishment of the SLR (Table 3).

Table 3 – Summary of Results

Authors / Year / Country	Objective (s)	Sample	Results	Study Type / Level of Evidence
Eshg, Z.M., Ezzati, J., Nasiri, N., & Ghafouri, R. 2017 Irão	To investigate the effects of humor therapy on blood pressure in people undergoing haemodialysis.	41 people: 26 women and 14 men undergoing haemodialysis	Humor therapy lowers blood pressure in people undergoing haemodialysis.	Quantitative Quasi-experimental Level IIb
Bennett, P. N., Parsons, T., Ben-Moshe, R., Neal, M., Weinberg, M. K., Gilbert, K., Ockerby, C., Rawson, H., Herbu, C. & Hutchinson, A. M. 2015 Austrália	- To evaluate the viability of laughter yoga in people with terminal kidney disease undergoing haemodialysis; - Explore the psychological and physiological impact of laughter yoga on these people; - Estimate the sample size required for future research.	17 people (10 men and 7 women) from the Melbourne Hemodialysis Center in Australia, from November to December 2013.	After the laughter yoga intervention there was an increase in the following variables: overall life satisfaction, optimism, humor, control, depression, anxiety. On the other hand, there was a slightly decrease in self-esteem and stress. . The nurses verified and agreed that laughter yoga had a positive impact on people's humor, was a viable intervention and would recommend laughter yoga.	Quantitative Quasi-experimental Level IIb
Heo, E. H., Kim, S., Park, HJ & Kil, S.Y 2016 Coreia	To evaluate the effects of a simulated laughter program on cortisol levels and QoL in people undergoing haemodialysis.	40 people from the haemodialysis unit in a Korean University Hospital. Intervention group-11 people. Control group - 18 people.	The intervention group achieved an humor improvement compared to the control group, however no significant differences in serum cortisol levels were observed. The intervention group showed improvements in the quality of social interaction, improvements in physical limitations, mental health and kidney disease.	Quantitative Quasi-experimental Level IIa
Sousa, L.M.M., Silva, C.L., Marques-Vieira, C.M.A., Antunes, A.V., Firmino, C.F., & José, H.M. 2019 Portugal	To measure the impact of humorous movie viewing on the interference of pain on daily living activities and QoL of people with CKD. To verify if the viewing of humor movies during haemodialysis caused hemodynamic changes in these people.	70 people with CKD from two Hemodialise units of the Diaverum Clinic in Lisbon from May to June 2015. Intervention group - 34 people. Control group - 33 people	The intervention group showed significant differences compared to the control group in the physical component in QoL. The viewing of humor movies during hemodialysis sessions, besides being a means of distraction, improves the QoL of people with CKD. Significant decreases in systolic and diastolic blood pressure were observed in the intervention group.	Quantitative Quasi-experimental Level IIa

<p>Sousa, L.M.M., Antunes, A.V., Marques-Vieira, C.M.A., Silva, C.L., Severino, S.S.P., & José, H.M. 2019</p> <p>Portugal</p>	<p>To assess whether viewing humor movies during haemodialysis sessions improves subjective well-being and sense of humor, reducing stress / anxiety and depression levels.</p>	<p>34 people in the intervention group. 33 people in the control group. Patients from two haemodialysis units of the Diaverum Clinic in Lisbon from May to June 2015.</p>	<p>In the intervention group levels of subjective happiness and sense of humor increased, but there was no significant increase in the overall life satisfaction. Only depression levels decreased in the intervention group.</p>	<p>Quantitative quasi-experimental Level IIa</p>
-------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------

Source: Authors

The five articles selected and included in this SLR were published between 2015 and 2019: one article from 2015 (Bennett, et al., 2015), one from 2016 (Heo, Kim, Park, & Kil, 2016), one from 2017 (Eshg, Ezzati, Nasiri, & Ghafouri, 2017) and two from 2019 (Sousa et al., 2019a; Sousa, et al., 2019b). Articles vary by country of origin: one study was conducted in Australia (Bennett, et al., 2015), one in Iran (Eshg et al., 2017) another in Korea (Heo et al., 2016) and two in Portugal (Sousa et al 2019a; Sousa et al 2019b). The five articles include studies of people with CKD undergoing haemodialysis. The humor / laughter-inducing interventions implemented were: visualization of humorous movies, laughter yoga and simulated laughter intervention. The studies are primary and quasi-experimental, three have LE IIa (Heo et al., 2016; Sousa et al., 2019a; Sousa et al., 2019b) and the other articles have LE IIb (Eshg et al., 2017; Bennett et al., 2015). The study sample ranges from 17 (Bennet et al., 2015) to 70 (Sousa et al., 2019a; Sousa et al., 2019b) people with CKD undergoing haemodialysis.

4. Discussion

Benefits of laughter-inducing and humor nursing interventions in controlling and lowering blood pressure

According to Sousa et al (2019a), the viewing of humor movies during haemodialysis sessions is a safe and low intensity intervention, i.e., this intervention has no major impact on the hemodynamic component, although some changes are noted. Two studies showed agreement on the effectiveness of the intervention in lowering and controlling blood pressure, as there was a decrease in post-intervention blood pressure compared to pre-intervention (Eshg et al., 2017; Sousa et al 2019a). Another similar study using a laughter therapy program implemented through humor movie viewing during 16 to 30 minute sessions also had positive effects on blood pressure control in hemodialysis patients (Ghafouri, 2015).

Bennett et al., (2015) state that laughter yoga as a humor-inducing therapy is a safe, affordable, low-intensity intervention that has a positive impact on people with CKD under hemodialysis, as no significant blood pressure changes were observed in a laughter yoga program in 17 people. Also, this intervention has been shown to be effective in reducing blood glucose levels, glycated hemoglobin levels, blood urea levels and creatinine levels and in improving the physical and psychological domain of QoL (Sharma, 2018).

Benefits of laughter-inducing and humor nursing interventions in QoL promotion

One study examined the impact that viewing movies have on QoL of people with CKD undergoing haemodialysis. There was an increase in the physical component of QoL in the intervention group compared to the control group, and there was an increase, however not statistically significant, in the mental component of QoL (Sousa et al. 2019a). One of the conclusions drawn from this study is that the physical component of QoL decreased by about 10% in the control group, that is, non-viewing of humorous movies during haemodialysis sessions had a negative impact on people with CKD undergoing this renal replacement therapy. Given the results obtained in the intervention group, viewing humor movies during haemodialysis sessions may in fact be a protective therapy for the physical component of QoL (Sousa et al. 2019a).

A study of 76 people undergoing haemodialysis (control and intervention group) in dialysis units found that laughter therapy has a significant impact on QoL in people undergoing haemodialysis, having improved in the intervention group (Fononi, 2017). The same conclusion was obtained through a laughter program with 29 people consisting of four weekly group sessions and short individual sessions for four weeks (Park Kim, Heo, & Yang, 2007).

Benefits of laughter-inducing and humor nursing interventions in wellbeing promotion (happiness and satisfaction with life in general)

Viewing humorous movies during hemodialysis sessions had a partially positive impact on the subjective well-being of people with CKD. In a study with 70 people, it was found that subjective happiness increased in the intervention group, however, the values obtained in life satisfaction in general had no statistical significance (Sousa et al., 2019b).

From a study conducted in two Clinic dialysis units and one hospital unit, with 183 people with CKD undergoing hemodialysis, which investigated the sociodemographic and clinical profile of the sample, it was concluded that there was a relationship between subjective happiness, overall life satisfaction and sense of humor (Sousa et al 2019d).

Benefits of laughter-inducing and humor nursing interventions in depression, decrease and control of stress and anxiety

Some studies use humorous movies as a humor intervention in order to observe the changes resulting from this intervention in people with CKD during hemodialysis sessions. Viewing a humorous video modifies the response pattern of stress hormones (adrenocorticotrophic hormone (ACTH), beta-endorphin and cortisol) (Bertini et al., 2010). One of the selected articles conducted a study of 70 people (divided into two groups) with sessions between 30 and 90 minutes each for four weeks. It was concluded that only depression levels decreased significantly, stress and anxiety levels also partially decreased, but without statistical significance (Sousa et al. 2019b). Another similar study found that there was a reduction in the level of depression (Sousa et al 2019d).

Depression and anxiety significantly decreased in the intervention group with the viewing of humorous movies (Shin, Kim, & Lee, 2010). A similar result was previously obtained through the same intervention, although the value was not statistically significant (Kim & Lee, 1999).

Following the intervention of laughter yoga in people with CKD undergoing haemodialysis, increases in levels of the following variables were observed: overall life satisfaction, optimism, humor, control and decreased depression and anxiety. There was also a slightly decrease in stress after this intervention (Bennett et al., 2015).

Fononi (2017) argues that there is a negative and significant relationship between laughter therapy and depression in people undergoing haemodialysis. Through the implementation of a laughter program, the author found an improvement in depressive symptoms. According to Zhao et al. (2019), laughter and humor interventions are effective in reliving depression, anxiety and improving sleep quality in adults. Laughter simulated program improves the quality of social interaction, physical limitations, symptoms of CKD (decreased appetite, pain and shortness of breath), and has positive effects on mental health. This was observed in the intervention group of a study that aimed to evaluate the effects of a laughter simulated program (Heo et al., 2016).

In a similar program of 41 people with CKD in a haemodialysis setting, it was concluded that after four weeks of breathing and laughing exercises people experienced a reduction in depression levels (Heo et al., 2016).

A systematic review and meta-analysis suggests that “simulated” (non-humorous) laughter is more effective than “spontaneous” (humorous) laughter and that laughter-inducing therapies may improve depression (Van der Wal & Kok, 2019).

Benefits of laughter-inducing and humor nursing interventions in sense of humor

Viewing humor movies during haemodialysis sessions improves humor in all dimensions (Sousa et al. 2019b).

People with CKD undergoing haemodialysis who participated in the laughter yoga intervention reported that after this intervention they experienced slightly increases in humor, happiness, optimism and well-being and decreased stress level. These people were found to be easier to laugh for no reason, were more mentally and physically relaxed, and had a more positive and optimistic attitude, which was reflected in their well-being (Bennett et al., 2015). After the laughter simulated program the intervention group had better humor results compared to the control group (Heo et al., 2016). In a similar program of laughter in people with CKD undergoing haemodialysis the same results were found: an humor improvement (Park et al., 2007).

These results agree with the study that uses humorous movies viewing as an intervention during haemodialysis sessions, proving that the attitude towards humor improves with the viewing of such movies: the percentage change in the intervention group was 9.8% whereas in the control group 4.6% (Sousa et al. 2019b).

Others benefits of laughter-inducing and humor nursing interventions

A laughter simulated program (11 people in the intervention group and 18 people in the control group) aimed to assess serum cortisol levels in the blood and whether these were affected by laughter, which has not been proven (Heo et al., 2016). There were also no changes in cortisol levels in a study of people undergoing haemodialysis (Park et al., 2007). Yurtkuran (2006) studied the effects of yoga on 37 people undergoing hemodialysis and noted that after three months of intervention there were significant improvements (pain, fatigue, urea, creatinine, cortisol, and sleep disorders) (Yurtkuran, 2006 cited by Mohkam, 2014).

Gordon (2012) cited by Mohkam (2014) found that cortisol level decreases with yoga practice in people with CKD, thus agreeing with the study by Yurtkuran (2006).

Another study found that viewing humorous movies during haemodialysis sessions has no impact or interference on pain in people with CKD (Sousa et al. 2019a).

Practical implications and recommendations for laughter-inducing and humor nursing interventions

Humor and laughter interventions are safe and can promote interpersonal relationships. They have great viability and potential to be used as nursing interventions to improve the well-being of adults (Zhao et al., 2019). Therefore, we consider that nursing interventions to induce laughter and humor should be implemented in health care.

Humor is a paradox. While in one person it can have a positive effect and make it laugh, in another, the same intervention can cause discomfort and suffering. Therefore, nurses should be aware to the person and the circumstance and tailor the activities of laughter-inducing interventions to each person and situation (Sousa et al, 2018e; Sousa et al. 2019d).

Laughter-inducing and humor interventions promote communication, human interaction and well-being, help to cope with difficult and unpleasant situations, reduce tension, discomfort and stress and strengthen the immune system. This intervention should be used with caution in people with active mental illness and cognitive impairment (Sousa & José, 2016; Sousa et al.,2018d; Sousa et al., 2019c).

In this work, the studies selected used the visualization of humorous movies as a laughter-inducing and humor intervention. It was found that humor intervention had beneficial effects in people with CKD undergoing haemodialysis, so it is suggested as a therapeutic alternative to be implemented during the haemodialysis program in order to improve QoL. However, it is recommended to adapt the portfolio of movies to the characteristics of each person undergoing haemodialysis. (Sousa et al., 2016).

According to Facent (2006), cited by Sousa et al (2016), the prescription of humorous movies fits in the humor intervention and is a nurse competence. Thus, nurses should implement laughter-inducing and humor interventions. Laughter-inducing interventions are promising as a complement to major therapies, but studies with high-quality longitudinal and experimental designs are required (Zhao et al., 2019) to increase the level of evidence on this intervention (Van der Wal & Kok, 2019).

One limitation we have highlighted is in terms of inclusion and exclusion criteria, for example, by defining some languages as inclusion criteria (Portuguese, English and Spanish) we are automatically excluding studies of other languages that could contribute to the study. Also the publication period may limit the review to the scientific production of the last five years, so there may be less evidence when excluding all articles outside this temporal frieze.

5. Conclusion

The synthesis of the results of the selected articles allowed us to achieve the goal set. We get to know the health and well-being benefits of laughing-inducing and humor nursing interventions in people with CKD undergoing haemodialysis. Thus, this review boosts nurses to implement humorous interventions in the care they provide within haemodialysis context. From the analyzed articles, movie viewing, laughter yoga and simulated laughter therapy appear as the main interventions that induce laughter and humor. We highlight the benefits that the use of laughing-inducing and humor nursing interventions have on the health and well-

being of people with CKD. We realize that there are indeed benefits from the applicability of humorous interventions and that the use of humor and laughter should be encouraged in the context of health. From the selected articles we found that viewing humorous movies and laughing yoga therapy lower blood pressure and that, with positive results, these interventions are of low intensity (do not require much time spent by nurses) and reduced costs. Regarding the QoL component and well-being, we found that there is no agreement between the results of the analyzed articles, so further studies are needed. Some authors state that there is an increase in QoL, while others say that the increase is not significant. Only one of the studies analyzed reported that subjective happiness increased in people with CKD, but the increase in overall satisfaction with life (subjective well-being) was not significant, so further studies on this variable are needed. There is a positive relationship between the physical component of QoL and subjective happiness, satisfaction with life in general. This was observed in a study with 70 people with CKD, which showed an increase in QoL and subjective happiness.

The results were unanimous among the five articles regarding depression, anxiety and stress because, in most studies, there was a decrease in the levels of these components, except for a study with 70 people, in which there were no significant effects on stress and anxiety but it was noted that the activities of laughing-inducing and humor nursing interventions have a very positive impact on the mental health and well-being of people with CKD.

Viewing movies enhances sense of humor in all dimensions, and laughter yoga has also shown benefits in humor, as people found it easier to laugh, to use humor, and to enjoy it.

We consider that the present work is relevant and contributes to nursing practice based on scientific evidence, because the results of this SLR may contribute to nurses' awareness about the benefits of interventions that induce laughter and humor.

The results obtained with this work will have contributions for the nursing scientific research, reinforcing the need for future and more specific investigations that address this issue further. Further experimental or quasi-experimental studies are suggested, with larger samples that allow a greater and better understanding of the benefits of laughing-inducing and humor nursing interventions on the health and well-being of people with CKD undergoing haemodialysis. It will contribute to the relevance of these interventions in the context of nursing care for people under haemodialysis program.

References

- Bennett, P. N., Parsons, T., Ben-Moshe, R., Neal, M., Weinberg, M. K., Gilbert, K., ... & Hutchinson, A. M. (2015). Intradialytic Laughter yoga therapy for haemodialysis patients: a pre-post intervention feasibility study. *BMC complementary and alternative medicine*, 15(1), 176. Available from: <https://doi.org/10.1186/s12906-015-0705-5>
- Bennett, P. N., Parsons, T., Ben-Moshe, R., Weinberg, M., Neal, M., Gilbert, K., ... & Hutchinson, A. (2014). Laughter and humor therapy in dialysis. In *Seminars in dialysis*, 27(5), 488-493. Available from: <https://doi.org/10.1111/sdi.12194>
- Bertini, M., Iani, L., de Santo, R. M., Scaramuzzi, C., Petramala, L., Cotesta, D., Pasquali, M., & Mazzaferro, S. (2010). Stress-moderating effects of positive emotions: exposure to humorous movies during hemodialytic sessions decreases blood levels of stress hormones. *Journal of Chinese Clinical Medicine*, 5(2), 61-70. Available from: https://www.researchgate.net/profile/Dario_Cotesta/publication/207318978_Stress-moderating_effects_of_positive_emotions_Exposure_to_humorous_movies_during_hemodialytic_sessions_decreases_blood_levels_of_stress_hormones/links/56b86d0c08ae3c1b79b2b6af/Stress-moderating-effects-of-positive-emotions-Exposure-to-humorous-movies-during-hemodialytic-sessions-decreases-blood-levels-of-stress-hormones.pdf
- Butcher, H. K., Bulechek, G. M., Dochterman, J. M. M., & Wagner, C. M. (2018). Nursing Interventions classification (NIC)-E-Book. Elsevier Health Sciences.
- Conselho Internacional de Enfermeiros. (2016). *CIPE versão 2015: Classificação internacional para a prática de enfermagem*. Lisboa, Portugal: Ordem dos Enfermeiros.
- Eshg, Z.M., Ezzati, J., Nasiri, N., & Ghafouri, R. (2017). Effect of Humor Therapy on Blood Pressure of Patients Undergoing Hemodialysis. *Journal of Research in Medical and Dental Science*, 5(6),85-88. Available from: https://www.researchgate.net/profile/Raziyeh_Ghafouri2/publication/322715145_Effect_of_Humor_Therapy_on_Blood_Pressure_of_Patients_Undergoing_Hemodialysis/links/5a6ad336aca2725b1c1bef2f/Effect-of-Humor-Therapy-on-Blood-Pressure-of-Patients-Undergoing-Hemodialysis.pdf
- Fononi, Z. (2017). *Investigate the effect of laughter therapy on quality of life and depression in patients undergoing hemodialysis in dialysis wards of teaching hospitals in Kerman* (Master dissertation, School of Nursing, Kerman University of Medical Sciences), Kerman, Iran. Available from: <http://eprints.kmu.ac.ir/26408/1/6078.pdf>
- Ghafouri, R. (2015). Effects of humor therapy on blood pressure in patients undergoing hemodialysis. *Avicenna Journal of Phytomedicine*, 5, 40. Available from: https://www.researchgate.net/profile/Raziyeh_Ghafouri2/publication/322715314_Effe

[cts of humor therapy on blood pressure in patients undergoing hemodialysis/links/5a6ad7a2a6fdcc2aedee3062/Effects-of-humor-therapy-on-blood-pressure-in-patients-undergoing-hemodialysis.pdf](https://doi.org/10.1016/j.ctcp.2016.07.001)

- Heo, E. H., Kim, S., Park, H. J., & Kil, S. Y. (2016). The effects of a simulated laughter programme on humor, cortisol levels, and health-related quality of life among haemodialysis patients. *Complementary therapies in clinical practice*, 25, 1-7. Available from: <https://doi.org/10.1016/j.ctcp.2016.07.001>
- Joanna Briggs Institute's [JBI] (2011). User Manual: Version 5.0 System for the Unified Management. Assessment and Review of Information. Joanna Briggs Institute's.
- Kim, K. H., & Lee, M. H. (1999). Effects of humor intervention program on anxiety, depression and coping of humor in hemodialysis patients. *The Korean Journal of Rehabilitation Nursing*, 2(1), 95-108. Available from: <http://www.koreascience.or.kr/article/JAKO199925952567984.page>
- Mohkam, M. (2014). Yoga as a Therapeutic Intervention in Patients with Chronic Kidney Diseases. *Journal of Pediatric Nephrology*, 2(4), 129-131. Available from: <https://doi.org/10.22037/jpn.v2i4.7003>
- Park, H., Kim, S., Heo, E., & Yang, D. (2007). Puk1 effect of laughter therapy on stress and health-related quality of life in hemodialysis patients. *Value in Health*, 10(6), 313. Available from: [https://doi.org/10.1016/S1098-3015\(10\)65132-7](https://doi.org/10.1016/S1098-3015(10)65132-7)
- Paula, T.B.; Souza, B.M.; Medeiro, N.; El Malt, S.M.; Gutierrez, F.; Lourenço, L.D.; Zihlmann, K.F. (2017). Potencialidade do Lúdico como Promoção de Bem-Estar Psicológico de Pacientes em Hemodiálise. *Psicologia: Ciência e Profissão*, 37(1), 146-158. Available from: http://www.scielo.br/scielo.php?pid=S1414-98932017000100146&script=sci_abstract&tlng=es
- Santos, C. F. M., Sousa, L. M. M., Carvalho, M. L., Severino, S. S. P., & José, H. M. G. (2016). A intervenção humor em Enfermagem num serviço de ortopedia: estratégias e benefícios. *Revista Investigação Enfermagem*, 2(16), 36-44 Available from: <http://hdl.handle.net/10400.17/2623>
- Sharma, V. (2018). IDDF2018-ABS-0237 Effect of laughter yoga and clapping exercise on renal functions and quality of life in patients suffering from chronic kidney disease in south delhi metro population. *Gut*, 67(Suppl_2), 17. Available from: https://gut.bmj.com/content/67/Suppl_2/A17.2.abstract
- Shin, B. J., Kim, H. S., & Lee, M. H. (2010). Effect of humorous video tape on depression and stress response in patients undergoing hemodialysis. *Journal of East-West Nursing Research*, 16, 35-43. Available from: <http://www.koreascience.or.kr/article/JAKO201029848356327.page>

- Sousa, L. M. M., Antunes, A. V., Baixinho, C. R. S. L., Severino, S. S. P., Marques-Vieira, C. M. A., & José, H. M. G. (2018e). Subjective Wellbeing Assessment in People with Chronic Kidney Disease Undergoing Hemodialysis. T Rath (Ed.) *Chronic Kidney Disease - from Pathophysiology to Clinical Improvements* (pp. 281-93). InTech; DOI: 10.5772/intechopen.71194.
- Sousa, L. M. M., Firmino, C. F., Marques-Vieira, C.M.A., Severino, S., & Pestana, H. C. F. C. (2018b). Revisões da literatura científica: tipos, métodos e aplicações em enfermagem. *Revista Portuguesa Enfermagem de Reabilitação* 1(1), 46-55. Available from: <http://hdl.handle.net/10174/25938>
- Sousa, L. M. M., Marques-Vieira, C. M. A., Antunes, A. V., Frade, F., Severino, S. S. P., & Valentim, O. S. (2019c). Humor intervention in the nurse-patient interaction. *Revista Brasileira de Enfermagem*, 72(4). Available from: <http://dx.doi.org/10.1590/0034-7167-2018-0609>
- Sousa, L. M. M., Teixeira, P. M. R., Marques-Vieira, C. M., Severino, S. S. P., Faisca, H., & José, H. M. G. (2018d). Emploi de l'humour dans la relation infirmier/personne malade : une revue de la littérature et synthèse. *Revue Francophone Internationale de Recherche Infirmière*, 4(1), 30-38. Available from: <https://doi.org/10.1016/j.refiri.2017.07.011>
- Sousa, L. M., & José, H. M. (2016). Benefícios do humor na saúde Revisão Sistemática da Literatura. *Enformação*, 7, 22-32. Available from: https://repositorio-cientifico.essatla.pt/bitstream/20.500.12253/992/1/enformacao_07_2016_Benef%C3%ADcios%20do%20humor%20na%20sa%C3%BAde.pdf
- Sousa, L. M.M., Antunes, A. V., Marques-Vieira, C., Valentim, O. S., & José, H. M. (2017). *Qualidade de vida e pessoa com doença renal crónica: um estudo transversal*. In R. Missias-Moreira; Z.N. Sales; L.C.G. Nascimento; O.S. Valentim (Eds). *Qualidade de vida e condições de saúde de diversas populações Volume 2*. (pp. 139-54). Curitiba: Editora CRV.
- Sousa, L.M.M., Antunes, A.V., Marques-Vieira, C.M.A., Silva, C.L., Valentim, O.M.S. & José, H.M. (2019d). Subjective wellbeing, sense of humor and psychological health in hemodialysis patients. *Enfermeria Nefrológica*, 22(1), 34-41. Available from: DOI: 10.4321/S2254-28842019000100006
- Sousa, L.M.M., Antunes, A.V., Marques-Vieira, C.M.A., Silva, C.L., Severino, S.S.P., & José, H.M. (2019b). Effect of humor intervention on well-being, depression, and sense of humor in hemodialysis patients. *Enfermeria Nefrológica*, 22(3), 256-265. Available from: https://www.revistaseden.org/files/Articulos_4061_41riginal92541.pdf

- Sousa, L.M.M., Marques, J.M., Firmino, C.F., Frade, F., Valentim, O.S. & Antunes, A.V., (2018a). Modelos de Formulação da questão de investigação na prática baseada em evidência. *Revista de investigação Enfermagem*, 2 (23), 31-39. Available from: <http://hdl.handle.net/20.500.12253/1287>
- Sousa, L.M.M., Marques-Vieira, C.M.A., Severino, S.S.P., Pozo-Rosado, J.L., Antunes, A.V. & José, H.M.G (2018c) Validation of the multidimensional sense of humor scale in people with chronic kidney disease. *Journal of Nursing Education and Practice*, 8(3), 72-79. Available from: <https://core.ac.uk/download/pdf/143422652.pdf>
- Sousa, L.M.M., Marques-Viera, C.M., Severino, S.S.P. Rosado, J.L.P. & José, H.M.G. (2016) Fatores explicativos da apreciação de filmes cómicos em pessoas com doença renal crónica. *Revista de Investigação em Enfermagem*, 49-55. Available from: <http://hdl.handle.net/10400.10/1796>
- Sousa, L.M.M., Silva, C.L., Marques-Vieira, C.M.A., Antunes, A.V., Firmino, C.F., & José, H.M. (2019a). *Visualização de filmes humorísticos: repercussão na qualidade de vida na pessoa com doença renal crónica*. In Missias-Moreira, Ramon; Sousa, Luís Manuel Mota; Valentim, Olga Sousa; José, Helena Maria Guerreiro. (Orgs). *Qualidade de Vida em uma perspectiva interdisciplinar – Volume 6*. Curitiba: Editora CRV.
- Sousa, L.M.M.; Marques-Vieira, C.M. A; Severino, S.S.P. & Antunes, A.V. (2017). Metodologia de Revisão Integrativa da Literatura em Enfermagem. *Revista Investigação Enfermagem*, II (21), 17-26. Available from: <http://hdl.handle.net/20.500.12253/1311>
- Van der Wal, C. N., & Kok, R. N. (2019). Laughter-inducing therapies: Systematic review and meta-analysis. *Social Science & Medicine*, 232, 473-488. Available from: <https://doi.org/10.1016/j.socscimed.2019.02.018>
- Zhao, J., Yin, H., Zhang, G., Li, G., Shang, B., Wang, C., & Chen, L. (2019). A meta-analysis of randomized controlled trials of laughter and humor interventions on depression, anxiety and sleep quality in adults. *Journal of advanced nursing*. Available from: <https://doi.org/10.1111/jan.14000>