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Depression and chronic kidney disease: an integrative literature review

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Abstract: Brazilian and international scientific studies on depression and chronic kidney disease published between 2006 and 2016 in the PsycINFO and LILACS databases were analyzed. In total, 269 publications were analyzed against the inclusion and exclusion criteria, so that 21 articles remained for analysis. The studies were evaluated for the year of publication, periodicals, objectives, sample, results, associated constructs, and instruments of depression. The prevalence of depressive symptoms varied from 7.8% to 83.49%. Also, most samples were small and included both sexes. The year with most publications was 2011, and the Beck Depression Inventory was used in 66.67% of the studies. It is important to evaluate depression using instruments that take into account the specificities of the context in order to reduce bias and to permit a correct identification of the depressive symptoms in this population.

Keywords: depressive symptomatology; depressive disorder; chronic renal failure; hemodialysis; integrative review.

DEPRESSÃO E DOENÇA RENAL CRÔNICA: REVISÃO INTEGRATIVA DA LITERATURA

Resumo: Foram analisadas produções científicas nacionais e internacionais a respeito da depressão e da doença renal crônica entre os anos de 2006 e 2016, nas bases PsycINFO e LILACS. Analisaram-se 269 publicações, e, depois da adoção de critérios de inclusão e exclusão, restaram 21. Os estudos foram avaliados quanto a ano de publicação, periódicos, objetivos, amostra, resultados, construtos associados e instrumentos de depressão. Verificou-se que a prevalência de sintomatologia depressiva variou de 7,8% a 83,49%, além de grande parte das amostras ser de tamanho reduzido e incluir ambos os sexos. O ano com mais publicações foi 2011, e o *Beck Depression Inventory* foi utilizado em 66,67% dos estudos. É importante avaliar a depressão com instrumentos que levem em conta as especificidades do contexto, de forma a reduzir vieses e permitir a identificação correta da sintomatologia depressiva nessa população.

Palavras-chave: sintomatologia depressiva; transtorno depressivo; insuficiência renal crônica; hemodiálise; revisão integrativa.

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DEPRESIÓN Y ENFERMEDAD RENAL CRÓNICA: REVISIÓN INTEGRATIVA DE LA LITERATURA

Resumen: Se analizaron producciones científicas brasileñas e internacionales sobre la depresión y la enfermedad renal crónica entre los años 2006 y 2016, en las bases PsycINFO y LILACS. 269 publicaciones fueron analizadas ante los criterios de inclusión y exclusión, restando 21 artículos para análisis. Los estudios fueron evaluados en cuanto al año de publicación, periódicos, objetivos, muestra, resultados, constructos asociados e instrumentos de depresión. Se verificó que la prevalencia de sintomatología depresiva varía de 7,8% a 83,49%, además de que gran parte de las muestras eran de tamaño reducido e incluían ambos sexos. El año con más publicaciones fue 2011 y el Beck Depression Inventory fue utilizado en el 66,67% de los estudios. Es importante evaluar la depresión con instrumentos que tengan en cuenta las especificidades del contexto para reducir sesgos y permitir la identificación correcta de la sintomatología depresiva en esa población.

Palabras clave: sintomatología depresiva; trastorno depresivo; insuficiencia renal crónica; hemodiálisis; revisión integrativa.

Introduction

It is estimated that there are currently 112,004 people with Chronic Kidney Disease (CKD) in Brazil (Sesso, Lopes, Thomé, Lugon, & Martins, 2016). It is a silent disease, which in most cases has no symptoms, which prevents the early diagnosis. Thus, when the symptoms become evident, the kidney function is usually already compromised, with possible physical, psychological, economic and social impact in the life of these patients (Ramos, Queiroz, & Jorge, 2008).

The CKD tends to cause limitations and a decrease in the quality of life, turning this population prone to the development of mental disorders, depression is one of the most reported conditions in renal patients. Nevertheless, depression is often underdiagnosed, mainly due to the overlapping of symptoms with CKD, such as changes in appetite and sleep, weight loss, slowing down, fatigue, among others, making their identification in these patients a complex and challenging process (Condé et al., 2010; Kimmel, 2002).

The depressive disorder is considered the main mental cause of disability and affects people of different age groups. It mainly includes depressed mood and loss of interest or pleasure in previously pleasurable activities, in addition to other symptoms, such as low concentration, disturbance of appetite and sleep, guilt, low self-esteem, hopelessness, among others. This fact is a public health problem, given that people affected by the disease have their quality of life and daily life considerably impaired, influencing the professional, school and family spheres, and may result in suicide (World Health Organization, 2017).

Finger et al. (2011) reported some hypotheses for the development of depression in people with CKD on hemodialysis, indicating that these patients tend to report several losses, among them the loss of function in the family, professional, physical, cognitive, and sexual dysfunction. The authors also indicated that although studies in the literature on the subject indicate that people in renal therapy have greater

depressive symptoms compared to individuals with other chronic diseases or the general population, there is no precision regarding the prevalence rate of depression in this population.

Moreira et al. (2014) pointed out that the prevalence rates of depression in people with CKD vary according to the criteria and instruments used with the samples included in the studies. Depressive symptoms tend to impair treatment compliance, leading to nutritional problems, impaired immunity, and increased mortality. Patients with CKD have 1.5 to 3 times more hospitalizations due to psychiatric conditions compared to other chronic diseases, depression, dementia, and substance abuse being the most frequent causes.

In a systematic review and meta-analysis, Palmer et al. (2013) investigated the prevalence of depression symptoms in adults with CKD, based on a survey in the MEDLINE and Embase databases. The study included 249 samples, with a total of 55,982 patients. The authors restricted the analysis to studies in which clinical interviews were used and found a prevalence of 20.3% of depression. It was also pointed out that, when using self-report scales, the prevalence of depression symptoms tends to be higher, and it is necessary to evaluate these data with caution, mainly due to the frequency of somatic symptom indicators that frequently affect renal patients.

Integrative reviews of the literature permit organizing and synthesizing the results of research carried out on a given topic, which contributes to the expansion of the knowledge on the research subject. Thus, a critical discussion of the methods, objectives, and results found is possible, which permits reaching general conclusions on the field of knowledge in question (Mendes, Silveira, & Galvão, 2008).

Objective

Based on these considerations, this study aimed to analyze the Brazilian and international scientific production on depression in chronic renal patients. Therefore, the levels of depression symptoms obtained in the studies, the main constructs associated with depression and renal disease and the samples used in the research were verified. Besides, the study analyzed whether the evaluation instruments of the depression symptoms used in the studies are suitable for the outpatient and/or hospital context.

Method

An integrative review of the literature on depression and chronic kidney disease was conducted in the PsycINFO and LILACS databases. For the LILACS database, the following search terms were used with Boolean operators: "(depressão OR transtorno depressivo OR transtornos do humor) AND (doença renal OR diálise renal OR insuficiência renal OR falência renal)". For the PsycINFO database, the same descriptors were used in the English language: "(OR) or" OR "(kidney disease OR renal dialysis OR renal insufficiency OR kidney failure)."

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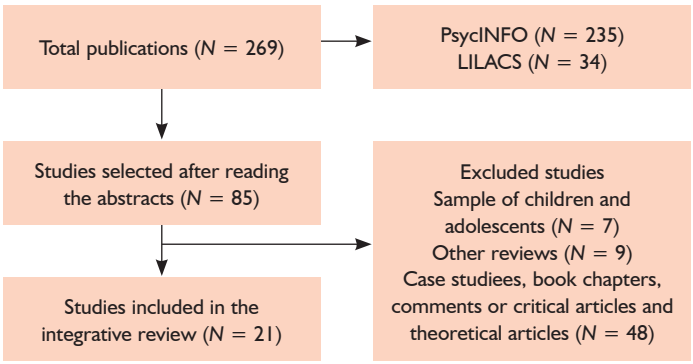
The inclusion criteria were: articles published between 2006 and 2016, written in Portuguese, English or Spanish, empirical studies and samples composed of people aged 18 years and over. We excluded studies that had no direct relation with the proposed theme, other review articles, as well as reports in the form of dissertations, theses, book chapters, comments, or criticism. The procedures described were carried out in December 2016.

Results

In total, 269 publications were obtained in the databases (PsycINFO = 235; LILACS = 34). After reading the abstracts, 85 papers were selected with the theme of chronic kidney disease and depression (PsycINFO = 82; LILACS = 3). Subsequently, the complete texts of the selected studies were retrieved and, after reading them and based on the initially established criteria, 64 were excluded. Therefore, 21 studies were included in the integrative review, as shown in Figure 1.

Figure 1. Flow diagram.



The studies included in the review were read in full and evaluated for authorship, year of publication, journal, objectives, sample, instruments used, and main results obtained. These characteristics are presented in Table 1.

Table 1. Characteristics of the studies retrieved.

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
1	Andrade & Sesso (2012)	*Psychology*	Assess depression in CKD patients.	36 in hemodialysis and 134 in conservative treatment	BDI and BDI-SF	41.6% with depressive symptoms (BDI) and 13.8% (BDI-SF).
2	Baykan & Yargic (2012)	*Bulletin of Clinical Psychopharmacology*	Assess CKD patients for symptoms of depression, anxiety, quality of life and coping strategies.	42 hemodialysis, 41 peritoneal dialysis, and 41 healthy patients	SCID-I, HADS, SF-36 and COPE	59.5% of HD patients and 53.7% of PD patients presented some disorder, the most common being depression. The use of non-functional coping strategies was greater among HD patients.
3	Bossola et al. (2010)	*General Hospital Psychiatry*	Assess depression and anxiety symptoms in hemodialysis patients.	80 hemodialysis patients	BDI, HARS, SCL-90-R, CCI, SF-36 and MMSE	42 (52.5%) presented symptoms of depression and 77 (95.2%) anxiety symptoms.
4	Chilcot, Wellsted, Davenport, & Farrington (2011)	*Journal of Health Psychology*	Assess depression symptoms and disease perception in CKD patients DRC.	215 hemodialysis patients	MMSE, IPQR and BDI-II	30% of the sample presented depression symptoms. Depressed patients demonstrated a representation of maladaptive disease in relation to non-depressed patients.
5	Diefenthaeler, Wagner, Poli-de--Figueiredo, Zimmerman, & Saitovitch (2008)	*Revista Brasileira de Psiquiatria*	Verify the association between depression and death in hemodialysis patients.	40 hemodialysis patients	BDI	After 24 months, the survival rates amounted to 39% for patients with depression symptoms and 95% for patients without symptoms ($p = 0.029$). Depression tends to be associated with mortality according to Cox's model (HR = 6,5; 95% CI: 0.8-55.6; $p = 0.085$)

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Table 1. Characteristics of the studies retrieved. (*continued*)

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
6	Drayer et al. (2006)	*General Hospital Psychiatry*	Verify depression symptoms and quality of life in hemodialysis patients.	62 hemodialysis patients	PRIME-MD and KDQOL-SF	28% presented depression symptoms. Depressed patients revealed lesser quality of life. Depression predicted mortality (HR = 4.1, 95% CI = 1.5-32.2, $p < 0.05$) after adjusting for age, sex, race, medical comorbidities and/or presence of diabetes.
7	Garcia, Veiga, Motta, Moura, & Casulari (2010)	*Revista Brasileira de Psiquiatria*	Assess humor and quality of life of men in treatment in HD and correlate the changes observed with the quality of life.	47 hemodialysis patients	HRSD and KDQOL-SFTM	68.1% of patients presented depression symptoms. Correlations between depression and KDQOL-SFTM in the dimensions: list of symptoms and problems ($r = -0.399$; $p = 0.005$) and quality of social interaction ($r = -0.433$; $p = 0.002$). Mood presented a negative correlation with general health ($r = -0.475$; $p < 0.001$) and emotional wellbeing ($r = -0.354$; $p = 0.015$).
8	Keskin & Engin (2011)	*Journal of Clinical Nursing*	Assess depression and suicidal ideation in hemodialysis patients.	92 hemodialysis patients	BDI, SBQ and COPEI	Positive correlations between depression and suicide ($r = 0.469$; $p = 0.001$), between age and depression ($r = 0.43$; $p = 0.00$) and suicidal ideas ($r = 0.27$; $p = 0.01$).

(*continue*)

Table 1. Characteristics of the studies retrieved. *(continued)*

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
9	Kojima et al. (2010)	*Psychotherapy and Psychosomatics*	Verify the association between depression and alexithymia with 5-year mortality in patients with CKD on hemodialysis.	230 hemodialysis patients	BDI-II, TAS-20, SSQ and SF-36	43% of patients presented symptoms of depression. During the follow-up, 27 deaths were confirmed. Depression and alexithymia were associated with increased mortality risk, but alexithymia showed to be a greater predictor of long-term mortality in HD patients.
10	Macaron et al. (2014)	*Community Mental Health*	Measure depression and anxiety symptoms and suicidal ideas in CKD patients.	51 hemodialysis patients	HADS and MINI	Anxiety symptoms in 45% of patients and depression symptoms in 50%. The prevalence of suicidal ideas was 37%
11	Makara-Studzińska & Kośląk (2011)	*Archives of Psychiatry and Psychotherapy*	Compare kidney disease patients and Primary Care patients in relation to depression symptoms.	206 in hemodialysis, 64 in peritoneal dialysis, 53 after transplantation and 200 without CKD	BDI	Kidney disease patients scored higher when compared in primary health care patients. 83.49% of hemodialysis patients presented depression symptoms, being 54.85% of mild depression and 28.64% moderate depression
12	McDade-Montez, Christensen, Cvengros, & Lawton (2006)	*Health Psychology*	Assess the association between depression symptoms and future risk of dialysis interruption during 48 months.	240 hemodialysis patients	BDI	18% of patients dropped out of dialysis. The level of depression symptoms was a single and significant predictive risk factor for the subsequent decision to drop out of dialysis.

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Table 1. Characteristics of the studies retrieved. (*continued*)

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
13	Ng, Jie Tan, Mooppil, Newman, & Griva (2015)	*British Journal of Health Psychology*	Verify the course of depression and anxiety symptoms during 12 months of hemodialysis patients.	159 hemodialysis patients	KDQOL-SF and HADS	39.6% of participants presented persistent symptoms of depression while 32.1% presented no or mild symptoms. 31.8% of the sample presented persistent symptoms of anxiety and 36.9% no symptoms.
14	Öyekçin, Gülpek, Sahin, & Mete (2012)	*International Journal of Psychiatry in Medicine*	Investigate depression, anxiety, body image, sexual satisfaction and adjustment to dialysis in renal patients.	36 hemodialysis, 54 peritoneal dialysis and 30 healthy patients	SCID, BIS, BDI, BAI, GRISS and DAS	Depression and anxiety were significantly higher in the HD group when compared to the PD and control groups. In the HD group, as the depression and anxiety levels increased, the body image was impaired.
15	Páez, Jofré, Azpiroz, & Bortoli (2009)	*Universitas Psychologica*	Verify the depression and anxiety levels in CKD patients undergoing hemodialysis.	30 hemodialysis patients	BDI-II and STAI	56.7% of the sample presented depression symptoms. Positive correlations were found between depression and state anxiety ($r = 0.54$; $p < 0.002$) and depression and trait anxiety ($r = 0.75$; $p < 0.000$).
16	Preljevic et al. (2013)	*General Hospital Psychiatry*	Verify the association among depression, anxiety and quality of life in hemodialysis patients.	111 hemodialysis patients	HADS, BDI, MOS SF-36 and SCID	Patients with depression reported a lower quality of life in four subscales, while patients with depression and comorbidity (anxiety) reported greater impairments in the SF-36 subscales when compared to patients without disorders.

(*continue*)

Table 1. Characteristics of the studies retrieved. *(continued)*

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
17	Ribeiro et al. (2009)	*Acta Paulista de Enfermagem*	Characterize elderly CKD patients in hemodialysis and identify depression levels in the sample.	61 hemodialysis patients	GDS	Mild depression symptoms and significant correlation between GDS and illiteracy ($p = 0.028$), indicating that illiterate persons presented more depressive responses.
18	Santos (2011)	*Revista Brasileira de Psiquiatria*	Verify the correlation between depression and quality of life in hemodialysis patients.	166 hemodialysis patients	CES-D and MOS SF-36	13 (7.8%) presented depression symptoms. Depressive patients showed lower scores on vitality, emotional aspects and mental health. Depression was a predictor of emotional aspects.
19	Santos, Wolfart, & Jornada (2011)	*Arquivos Catarinenses de Medicina*	Verify depression symptoms and probable depressive disorder in CKD patients.	68 hemodialysis patients	BDI and SCID	21 patients (32%) presented absent or minimal depression, 24 (34%) mild, 16 (24%) moderate and 7 (10%) severe (BDI). 17.6% of patients were diagnosed with major depression (SCID)
20	Silva Junior et al. (2014)	*Psychology, Health & Medicine*	Investigate the occurrence of depression in CKD patients.	148 hemodialysis patients	BDI-II	Depression symptoms in 101 (68.2%) cases, being mild (49.5%), moderate (41.5%) and severe (9%). 15.5% had an earlier depression diagnosis.

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Table 1. Characteristics of the studies retrieved. (*conclusion*)

ID	Author/year	Journal	Objectives	Sample	Instruments	Main results
21	Sinatra, Curci, Palo, Monacis, & Tanucci (2011)	*Psychology*	Assess the effects of perceived social support, alexithymia, mental rumination and social sharing on depression in patients with CKD.	103 hemodialysis patients and 101 healthy patients	IPPE, MSPSS, GDS, TAS-20 and SSMR	79.3% of HD patients for less than 4 years and 64.4% for more than 4 years presented depression symptoms. Depression was influenced by perceived support, alexithymia and elaboration of emotional problems associated with the disease. Rumination figured as a consequence of emotions in the control group, but had an adaptive function in HD patients for more than 4 years.

Obs.: * Chronic Kidney Disease (CKD); hemodialysis (HD); peritoneal dialysis (PD); *Beck Depression Inventory* (BDI-I, BDI-II and BDI-SF); *Structured Clinical Interview for DSM-IV Axis I Disorders* (SCID-I); *Hospital Anxiety and Depression Scale* (HADS); *Health Related Quality of Life Short Form-36* (SF-36); *Coping Strategies Questionnaire* (COPE); *Hamilton Rating Anxiety Scale* (HARS); *Hopkins Symptom Checklist 90 Revised* (SCL-90-R); *Charlson Comorbidity Index* (CCI); *Mini Mental State Examination* (MMSE); *Revised Illness Perception Questionnaire* (IPQR); *Primary Care Evaluation of Mental Disorders* (PRIME-MD); *Kidney Disease and Quality of Life Short Form* (KDQOL-SF); *Hamilton Rating Scale for Depression* (HRSD); *Kidney Disease Quality of Life Questionnaire* (KDQOL-SFTM); *Suicide Behaviors Questionnaire* (SBQ); *Coping Orientation to Problems Experienced Inventory* (COPEI); *Toronto Alexithymia Scale* (TAS-20); *Social Support Questionnaire* (SSQ); *Short Form Health Survey* (SF-36); *Mini International Neuropsychiatric Interview* (MINI); *Body Image Scale* (BIS); *Beck Anxiety Inventory* (BAI); *The Golombok-Rust Inventory of Sexual Satisfaction* (GRISS); *Dyadic Adjustment Scale* (DAS); *Spielberger's State-Trait Anxiety Inventory* (STAI); *Medical Outcome Short Form 36* (MOS SF-36); *Geriatric Depression Scale* (GDS); *Center for Epidemiologic Studies Depression Scale* (CES-D); *Pluridimensional Inventory for Haemodialysis Patients* (IPPE); *Multidimensional Scale of Perceived Social Support* (MSPSS); *Social Sharing and Mental Rumination* (SSMR).

Table 1 indicates that the main objectives of the studies were to verify the prevalence of depression symptoms, as well as their association with other constructs. The prevalence of depression symptoms ranged from 7.8% to 83.49%, with different intensities, that is, mild, moderate and severe. Table 2 presents the associated constructs and the depression instruments used in the studies.

Table 2. Associated constructs and instruments used.

Constructs	N	%
Anxiety	7	31.81
Quality of life	5	22.73
Coping	2	9.09
Social support	2	9.09
Suicidal ideas	2	9.09
Alexithymia	2	9.09
Body image	1	4.55
Sexual satisfaction	1	4.55
Instruments used	**N**	**%**
Beck Depression Inventory (BDI-I, BDI-II e BDI-SF)	14	66.67
Hospital Anxiety and Depression Scale (HADS)	4	19.05
Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)	4	19.05
Geriatric Depression Scale (GDS)	2	9.52
Center for Epidemiologic Studies Depression Scale (CES-D)	1	4.76

According to Table 2, the most associated constructs in the studies were anxiety and quality of life and, concerning the instruments, the BDI (I and II) was present in most of the studies. Among the self-report instruments, the *Beck Depression Inventory* (BDI) consists of 21 items; the *Hospital Anxiety and Depression Scale* (HADS), consisting of 14 items, 7 of which were subscales of depression; the *Geriatric Depression Scale* (GDS) with 30 items and the *Center for Epidemiologic Studies Depression Scale* (CES-D), which contains 20 items. Finally, the *Structured Clinical Interview for DSM-IV Axis I Disorders* (SCID-I), which is a structured interview, in which the mood evaluation module consists of 15 questions.

The sample size was classified according to the proposal of Prieto & Muñiz (2000), who defined that a sample considered small contains less than 200 subjects, a moderate sample between 200 and 500 and a large sample more than 500 participants. In this study, most articles (*N* = 16, 76.19%) were classified as small samples, followed by the moderate category (*N* = 4, 19.04%), and (*N* = 1, 4.76 %) presented a large sample.

Regarding the type of the sample, in 76.19% (*N* = 16) of the articles, the participants composed were only patients on hemodialysis treatment, while the rest of the studies (*N* = 5, 23.80%) contained, in addition to patients on hemodialysis, patients in other types of treatment, such as conservative treatment and peritoneal dialysis, as

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well as post-transplant and healthy subjects. Most of the articles included samples of men and women, except for one study with only males. In addition, the minimum age of the study participants was 18 years old. The number of articles published per year was verified, and the studies were retrieved between the years 2006 and 2015. Most of the publications occurred in 2011 (*N* = 6, 28.57%), followed by the years 2010 and 2012 (*N* = 3, 14.29%), with a decrease in subsequent years.

The 21 articles analyzed were published in 16 journals in Psychology and other areas of health. The journals with the highest number of publications in the research period were the *Brazilian Journal of Psychiatry* (*N* = 3, 14.29%), the *General Hospital Psychiatry* (*N* = 3, 14.29%), and the *Psychology* (*N* = 2; 9.52%).

Discussion

The objective of this study was to analyze the scientific production on depression in chronic renal patients, based on an integrative review of the literature. It was observed that the most used depression instruments were the *Beck Depression Inventory* (BDI), the *Hospital Anxiety and Depression Scale* (HADS), the *Geriatric Depression Scale* (GDS), the *Center for Epidemiologic Studies Depression Scale* (CES-D), and the *Structured Clinical Interview for DSM-IV Axis I Disorders* (SCID-I).

The BDI is the most applied depression symptom evaluation tool in the studies, both in clinical and nonclinical populations. The inventory was published in 1961 and is a pioneering tool in screening from these symptoms, and several psychometric studies have used it over the years (Argimon, Paloski, Farina, & Irigaray, 2016; Baptista & Borges, 2016). It is important to consider that BDI, present in 14 of the 21 studies evaluated, contains approximately 29% of items that assess vegetative symptoms of depression. According to Condé et al. (2010) and Kimmel (2002), it is important to be cautious when evaluating vegetative aspects, as the symptoms between depression and CKD could be overlapping. An alternative that has been applied for the application of BDI in CKD patients is the cutoff equal to or greater than 16/17 (Preljevic et al., 2012; Watnick, Wang, Demadura, & Ganzini, 2005).

Most of the instruments used (BDI, HADS, GDS and CES-D) were self-reported, in which the subject responds to the items with or without the aid of the applicator. We also used a structured interview (SCID-I), which consists of a set of preset questions, held by a trained professional. As reported by Lutz, Stahl, Howard, Grissom, & Joske (2002), structured interviews offer the opportunity to investigate the direction of the disorder, while the screening scales are more practical and allow a quick identification of possible cases, at a lower cost than the others. These scales do not provide the amount of information necessary to reach a proper diagnosis, such as the most affected areas of the subject's life and duration of the symptoms for example (Baptista, Cardoso, & Gomes, 2012).

The prevalence of depressive symptoms in different degrees of severity (mild, moderate and severe) in the studies ranged from 7.8% to 83.49%. As indicated by

Moreira et al. (2014), the prevalence of depression symptoms varies according to the criteria stipulated by the researcher. In this sense, as reported by Palmer et al. (2013), the prevalence of depressive symptoms tends to be higher when evaluated using self-report instruments, emphasizing the importance of carefully investigating these results, mainly due to the somatic symptoms common to depression and chronic kidney disease, which are present in most of the evaluation scales of depression symptoms. In this study, except for HADS and GDS, the instruments used in the studies analyzed contain items that evaluate somatic characteristics, raising caution as to the prevalence found.

The constructs most associated with depression were anxiety and quality of life. Some authors have reported that anxiety in renal patients is common, due to the very process of adaptation to a treatment routine. Also, the disease intimidates the subjects, who perceive that their life and body integrity are constantly threatened (Dias, Shiozawa, Miorin, & Cordeiro, 2015; Valle, Souza, & Ribeiro, 2013). Ottaviani et al. (2016) indicated that kidney disease and its treatment could lead to losses and changes in the patient's life, not only physically but also emotionally, which would lead to a worsening in the subject's quality of life. Most of the study samples were categorized as small in size, based on the criteria by Prieto & Muñiz (2000). Thus, one hypothesis for the reduced sample number is the cost to carry out studies with more extensive samples, as well as the difficulty to get access to certain samples.

The limitations in this integrative review include the reduced number of databases consulted, as well as the restriction to articles published only between 2006 and 2016. Thus, we do not intend to reach conclusions about the current scenario of knowledge about depression in renal patients, but to investigate the field of the subject in question. The literature has demonstrated the importance of treating not only physical but also mental aspects in chronic renal patients, given the consequences of depression in these patients. Based on the analyses, studies are necessary that aim at providing effective interventional proposals in the treatment of depression in chronic kidney patients, considering their high prevalence, as verified in the studies included in this review. Also, it is fundamental to choose instruments that have been developed for outpatient/hospital use, that is, instruments that cover the specificities of the investigated context, in order to reduce possible biases.

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