Assessment to Establish the Need for Psychological Counselling in Chronic Kidney Disease Patients on Haemodialysis

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ABSTRACT

Background: Renal disease affects patient's quality of life in the physical and mental dimensions. The objectives of this study are to detect anxiety and depression disorders in patients on haemodialysis (HD), compare these results with those presented by other research groups in Spain and determine the degree of patients' self-perception in relation to these problems.

Methods: Cross-sectional study to assess anxiety and depression in HD patients, using the 6 most used scales in clinical practice and to compare these results with those published in Spain. Assessment of self-perception for these problems was done by using an ad hoc questionnaire.

Results: Sample composed of 17 males and 8 females with an average age of 66.28±14.71 years. 37.6% of the patients had criteria for anxiety and 60% for depression. The percentage of patients with criteria for anxiety in the articles analyzed was 33.1%, while 49.62% met criteria for depression. Regarding self-perception, 24% reported they had a bad mental state, 36% believed they were suffering from depression and 44% believed they were suffering from anxiety.

Conclusions: The results in our study and those obtained in the literature, show that anxiety and depression disorders are prevalent in patients receiving HD treatment. These disorders are perceived by the patients, despite there are dimensions in which self-perception is far from what the validated scales reported. Factors such as physical function and cognitive ability can influence anxiety and depression

Introduction

Chronic Kidney Disease (CKD) is an organic disorder which at its end-stage will require renal replacement therapy (RRT); the disease trajectory and treatment bothaffect all aspects of patient's life [1]. The burden of RRT, impacts on the Quality of Life Related to Health (HRQoL) in the patient's physical and mental dimensions [2]. It is estimated that 2% to 4% of the general population presents Major Depression criteria [3,4]. The prevalence of this disorder in patients on haemodialysis (HD) is rated between 23% and 42% in Europe [3,4]. For patients with CKD before RRT it is estimated to be between 21% and 27% [3,4].

SCIENTIFIC LITERATURE

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Several authors in Spain have studied the degrees of anxiety and depression through different validated scales [5-8]. These studies provide valuable data on the economic savings due to the improvement of quality of life. This information is also included in the documents of the Spanish National Health System [9,10]. In addition, there is sufficient evidence from the reports of these studies to determine the need for pharmacological and non-pharmacological treatment in this group of patients [11].

As an additional information found in the referred bibliography, the economic cost of CKD represents 2.5% to 3% of the Spanish National Health System budget. The average annual cost of a patient treated with HD in Spain is 46,659.83 euros and for patients treated with Peritoneal Dialysis (PD) is 32,432.07 euros. Documents of the Spanish Ministry of Health, state in detail how a comprehensive care of the needs of chronic patients can reduce costs in medium and long term. At the same time, maintaining these patients in good physical and mental conditions, represents a decrease in hospital admissions, and emergency visits, a better control in the primary care centres, and a greater adherence to the prescribed treatment [9,10].

Based on the available data collected, we decided to perform this study to detect anxiety and depression disorders in HD patients in our centre and compare these results with those presented by other research groups in Spain. Due to the cultural implications existing in the depression and anxiety disorders, we decided to compare our results with those published in our same cultural environment [12,13]. We also aimed to determine the degree of self-perception or recognition of this disorders using the concepts of *insight* and *disease awareness* [14].

Materials and Methods

Cross-sectional descriptive study in which anxiety and depression were evaluated in patients with CKD who were included in the haemodialysis programme at the Hospital del Mar, during the period between January and May 2017. Patients over 18 years old and clinically stable for three months were included in the study and patients with cognitive impairment or language barrier were excluded.

Anxiety and depression were assessed through 6 different scales (Table 1). The scales to assess these disorders were selected from the literature through the search engines: PubMed, SciELO, SEDEN and SEN. Finally, 17 articles were found with a total of 1,155 patients evaluated and 6 scales used (Table 2). The fact that these scales have been used and validated by other researchers in the same cultural context, guarantees the suitability to reuse them in the same context.

Different sociodemographic and clinical variables were collected using the clinical histories. In addition, other variables described as influential in both depression and anxiety were included in order to define the sample in more detail: physical aspects (through the Barthel scale [15] and the Lawton and Brody scale [16]), cognitive aspects (through the Minimental exam [17]), satisfaction with life (through the satisfaction with life scale [18]) and hopelessness (through the Beck Despair Scale [19]).

With the aim of studying the perception that the patients had about their state (insight/awareness), the nursing professionals of our centre prepared an *ad hoc* questionnaire in which 5 closed-ended questions were included (Table 3).

The self-administered scales were answered by the patients themselves in their homes or during the HD sessions. The hetero-administered scales were answered during the HD sessions as an interview by the health personnel.

The statistical analysis of the results was performed using Excel (Microsoft, 2106). The numerical variables have been described as absolute numbers and percentages. The results of the scales are expressed in median and interquartile range or mean and standard deviation.

This study is based on the basic principles that guide the attention and the research in the socio-sanitary field: principle of autonomy and respect for people, principle of charity, principle of justice and principle of non-malice, included in the Nursing Code of Ethics in

Table 1: Description of anxiety and depression scales used [13].

NAME	Hamilton Anxiety Rating Scale (HAM-A)	State-Trait Anxiety Inventory (STAI)	State-Trait Depression Inventory (IDER)	Beck Anxiety Inventory (BAI)	Beck Depression Inventory (BDI-II)	Hospital Anxiety-Depression Scale (HADS)
PUBLICATION YEAR	1959	1970	1970	1988	1961	1983
APPROXIMATE APPLICATION TIME	15 min	15 min	15 min	10 min	10 min	5 min
PURPOSE	Detects absence or presence of anxiety disorders and rates the severity of the disorder in a person. Evaluates psychiatric and somatic anxious components.	Evaluate anxiety as transient state or emotional condition and anxiety as a relatively stable anxious trait or propensity.	Evaluate depression as a state or transient emotional condition and depression as a trait or propensity to suffer depressive states as a personal quality.	Measure the severity of anxiety symptoms.	The most widely used instrument to detect and assess the severity of depression in a clinical setting.	Assesses the absence or presence of anxiety and depression in patients in a non- psychiatric hospital environment or primary care.
CONTENT	Assesses a total of 14 symptoms of anxiety, from 0 or "nothing" to 4 or "very severe". Two subscales corresponding to psychic anxiety and somatic anxiety are obtained. The sum of the two subscales corresponds to the total value.	Each subscale is made up of 20 items in a 4-point multiple response system according to intensity (0: almost never / nothing, 1: somewhat / sometimes, 2: quite often, 3: much / almost always).	Each of the 21 items in the two subscales, is rated from 1 to 4 according to the intensity, with a maximum total score of 63 points.	Composed of 21 items that are valued on a scale from 0 (not at all) to 3 (a lot) depending on the affectation for the person.	Its 21 items describe the most frequent clinical symptoms of patients with depression.	Each item adopts a value between 0 to 3, so that the minimum and maximum score for each subscale is from 0 to 21.
APPLICACATION	Hetero-administered	Self-administered	Self-administered	Self-administered	Self-administered	Self-administered
INTERPRETATION	Sub-scales No anxiety (between 0 and 5), moderate anxiety (between 6 and 14) and greater anxiety (between 15 and 28). Total scale Without anxiety (between 0 and 6),	The total score is interpreted in percentiles from 10 to 90. The presence of severe anxiety is considered from the percentile 70.	The total score is cataloged according to the severity. For depression status: High (≥43), Medium (35-42) or Low (≤34), and for depression trait: High (≥47), Medium (36-46) or Low (≥35).	The interpretation is defined in diverse levels of severity of anxious symptomatology: 0-7 indicates minimum anxiety, 8-15 mild anxiety, 16-25 moderate anxiety and 26-63 severe anxiety.	The results are interpreted according to the severity of the disorder: 0-13 indicates minimal depression, 14-19 mild depression, 20-28 moderate depression and 29- 63 severe depression.	Absence of disorder (0- 7), doubtful result (8-10) and presence of disorder (11-21).
INTERNAL CONSISTENCY (ALPHA DE CRONBACH)	0,76 - 0,92	0,71 - 0,86	0,71 - 0,86	0,90 - 0,94	0,89 - 0,90	0,80 - 0,85

Catalonia, the Helsinki Declaration and the 15/1999 Spanish Law. All the included patients gave their written consent of acceptance to participate in the study.
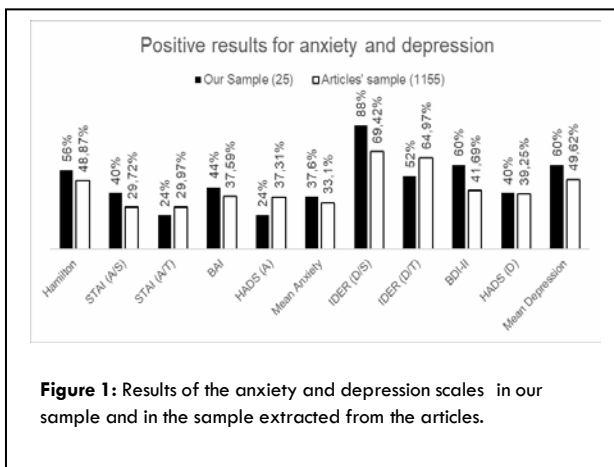
Results

31 patients were evaluated, 25 patients were included and 6 patients were excluded due to the causes described above. The sample consisted in 17 (68%) males and 8 (32%) females with an average age of 66.28 ± 14.71 years. The clinical characteristics are described in Table 4.

1. Anxiety and depression assessment

The results for anxiety and depression are presented in the figure 1. The average of all the results obtained by the different scales indicates that 37.6% of the patients had criteria for anxiety and 60% had criteria for depression.

In the same Figure 1, the results for anxiety and depression extracted from the 17 analyzed articles are represented. The percentage of patients who met criteria for anxiety was 33.1%, while 49.62% met criteria for depression.

Figure 1: Results of the anxiety and depression scales in our sample and in the sample extracted from the articles.

2. Functional assessment

The result of the Barthel scale showed that 14 patients (56%) had some degree of dependence for the Basic Activities of Daily Living (BSDL) (0% total dependence, 16% severe dependence, 32% moderate dependence and 8% light dependence). The median for this scale was 95 [75.5; 100] corresponding to the light dependence group.

The Lawton and Brody scale showed that 15 patients

(60%) had some degree of dependence for the Instrumental Activities of Daily Living (IADL) (8% total dependence, 24% severe dependence, 16% moderate dependence and 12% light dependence) and the median was 7 [3; 8], again corresponding to the light dependence group.

3. Cognitive assessment

The Mini-Mental Exam showed that 16 patients (64%) had criteria for cognitive normality and the remaining 9 patients had some slight degree of cognitive deterioration (3 patients were categorized as pathological suspicion and 6 patients as incipient cognitive deterioration). That group of 9 patients had no problem to answer the other scales as they were just in a suspicion or incipient cognitive deterioration. The median for this scale was 28 [24.5; 30] classifying the group as normal.

4. Satisfaction with life and despair assessment

The satisfaction with life scale showed that 12 patients (48%) were classified below neutral satisfaction (4 patients with neutral satisfaction, 5 patients slightly dissatisfied, 4 patients dissatisfied and 1 patient very dissatisfied). On the other hand, 6 patients (24%) were slightly satisfied with their lives, 3 patients (12%) were satisfied with their lives and 4 patients (16%) were very satisfied with their lives. The median for this scale was 22 [16.5; 26], which indicates that the group of patients can be classified as people slightly satisfied with their lives.

Regarding the result of the Beck Despair Scale, 13 patients (52%) presented hopelessness for the future and the purposes to come. The median for this scale was 9 [4; 14] classifying the group of high hopelessness people.

5. Self-perception assessment

Patients' self-perception about the problems described before was analysed (Figure 2).

The results of self-perception of physical state showed that 9 patients (36%) perceived a bad physical state. Regarding how they perceived their satisfaction with life, 19 patients (76%) claimed to perceive it as very bad, bad or regular compared to the other 6 patients (24%) who claim to perceive their quality of life good

or very good. Finally, to the question if the patients perceived anxiety or depression. 6 patients (24%) claimed to have a poor mental state. 9 patients (36%) believed they were suffering from depression and 11 patients (44%) believed they were suffering from anxiety or being nervous.
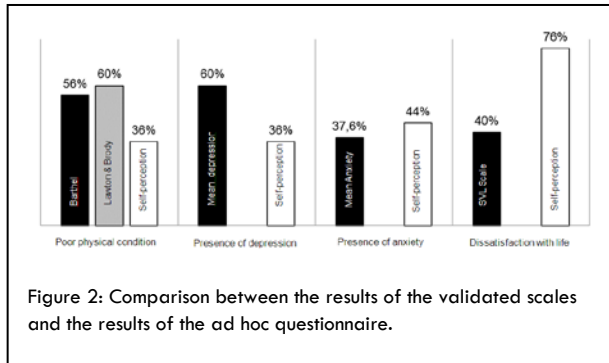

Figure 2: Comparison between the results of the validated scales and the results of the ad hoc questionnaire.

Discussions

The results presented show that anxiety and depression disorders are highly prevalent in patients undergoing HD treatment. These results are similar to the results described in the different articles analyzed and presented in the table 2. The evaluated patients' profile is that of a person with CKD on haemodialysis programme, with a mean age of 66 years old, slightly dependent for the basic and instrumental activities of daily living, slightly satisfied with their life, and a great feeling of despair in dealing with a hopeless future. In addition, 37.6% of patients evaluated have pathological anxiety criteria and 60% have criteria to be diagnosed of a major depression. These results are consistent with those described in the referenced literature in the table 2, in which 33.1% of patients on haemodialysis met criteria for anxiety and 49.6% met criteria for depression.

Table 2: Characteristics of the selected articles.

ARTICLE NAME	FIRST AUTHOR	PUBLICATION YEAR	PATIENTS INCLUDED	USED SCALES
Análisis del estado de ansiedad y depresión en los pacientes con insuficiencia renal crónica en nuestros centros de hemodiálisis	Giera Vives, L	2014	120	STAI IDER
Ansiedad y depresión en el paciente renal	Ramirez Ruiz, M	2011	60	BDI-II HAM-A
Evaluación de la ansiedad y depresión en los pacientes con insuficiencia renal crónica en hemodiálisis durante un año	Giera Vives, L	2013	98	STAI IDER
Prevalencia de ansiedad y depresión en pacientes de hemodiálisis	Gomez Vilesca, L	2012	49	HADS
Prevalencia de fatiga postdiálisis, depresión y dolor del paciente en hemodiálisis	Arribas Cobo, P	2014	64	BDI-II
Calidad de vida relacionada con la salud en la enfermedad renal crónica: relevancia predictiva del estado de ánimo y la sintomatología somática	Perales Montilla, MC	2014	52	HADS
Evolución de la calidad de vida en pacientes en hemodiálisis: estudio prospectivo a un año	Muñoz Sancho, R	2004	52	HADS
Factores psicosociales y adherencia al tratamiento farmacológico en pacientes en hemodiálisis crónica	Huertas Vieco, MP	2014	35	BDI-II BAI
Influencia de la consulta de enfermería de enfermedad renal crónica avanzada en pacientes que inician tratamiento renal sustitutivo	Rebollo Rubio, A	2014	90	HADS
Depression, anxiety and health-related quality of life amongst patients who are starting dialysis treatment	Rebollo Rubio, A	2017	152	HADS
Síntomas físicos y trastornos emocionales en pacientes en programa de hemodiálisis periódicas	Álvarez Ude, F	2001	55	STAI
Estudio de la prevalencia de trastornos ansiosos y depresivos en pacientes en hemodiálisis	Moreno Nuñez, E	2003	75	BDI-II BAI HAM-A
Progresión de la enfermedad renal crónica. Prevalencia de ansiedad y depresión en la poliquistosis renal autosómica dominante	Pérez Domínguez, T	2012	24	HADS
Actividad física, ansiedad y depresión en pacientes sometidos a hemodiálisis	Cuesta Vargas, AI	2013	50	STAI BDI-II
Adherence to treatment, emotional state and quality of life in patients with end-stage renal disease undergoing dialysis	Garcia Llana, H	2013	61	HADS
Emotional distress and health-related quality of life in patients on hemodialysis: the clinical value of COOP-WONCA charts	Arenas, MD	2007	75	BDI-II HADS
Psychosocial factors and health-related quality of life in hemodialysis patients	Vázquez, I	2005	43	STAI BDI-II

Table 3: Ad hoc self-perception questionnaire.

What do you think of your quality of life?
    Very Good   Good   Regular   Bad   Very Bad
Do you think you have a bad physical condition?
    Yes   No
Do you think you have a bad mental state?
    Yes   No
Do you think you are depressed?
    Yes   No
Do you think you are anxious / nervous?
    Yes   No

As presented, 37.6% of patients have criteria to be diagnosed of an anxiety disorder. The lowest result found (24%) was that of the STAI scale in its version of anxiety as a trait and that of the HADS scale. The highest result found (56%) was that of the Hamilton Anxiety Scale. If we compare these results with those analyzed in the evaluated articles, we see that these scales have the lowest and highest results as well.

The anxiety results provided by the validated scales, coincide with the perception that patients have about this disorder. 44% of the patients claimed to suffer anxiety or nervousness problems, being slightly higher than the 37.6% of patients who meet criteria for this disorder according to the scales.

For depression, we found that, 60% of patients meet criteria to be diagnosed for this disorder. The smallest percentage (40%) was found on the HADS scale. The highest value found (88%) was in the IDER scale in its version as a depressive state. If we compare these results again with those of the other articles, we see that the minimum and maximum results correspond again to the same scales. In the comparison made between these results and the perception that patients have about the disorder, we see that the percentage of people who claim to be suffering from depression decreases drastically to almost half (36%). This finding has been described in the literature through the concept of stigma and what suffering a mental illness of these characteristics can mean for the individual in social and cultural contexts [20].

Chronic anxiety and depression disorders without treatment can lead to other negative outcomes which we have detected in our sample, as, for example:

48% of patients showed some degree of dissatisfaction with their lives and 52% showed an elevated level of hopelessness, without any positive future aspirations.

The functional status assessment is essential in the evaluation of patients with suspected anxiety and/or depression since functional alteration has been closely related to the onset of psychological consequences [21]. As has been described, the majority of patients assessed present some degree of dependence for the BADL (56%) and the IADL (60%) and, although these disorders are not perceived in the same importance by the patients (only 36% claimed to have poor physical condition) we to the progress of the physical function and examine whether there is a relationship with a possible increase in anxiety and depression disorders, as presented in the literature consulted and presented in the table 2.

Another aspect that we have included as a relevant item for a complete assessment is the patients' cognitive capacity, especially in those over 80 years old. This examination is essential since significant relationships have also been established between cognitive impairment and anxiety-depressive disorders [22,23]. For the final sample, patients with severe cognitive disorders have not been included in the present text as a consequence of its difficult approach, but it would be interesting in the future to be able to examine the relationship between anxiety and depression disorders in this group of patients.

There are many factors that can influence anxiety and depression apart from poor physical condition and cognitive impairment [21-23]. Other factors may be: socioeconomic level [24], spirituality and religious sense [25], associated comorbidities, etc.

There are many scales and tests that can be used to measure anxiety and depression disorders, but, after reviewing the literature, these 6 scales presented are the most used in our environment. The BDI-II and the STAI are the two scales most used by Spanish psychologists in clinical practice [26]. The BAI and the BDI-II are the two respective scales for anxiety and depression that show more neutral results, unlike the others that usually present more extreme results due to their intrinsic validation characteristics in certain samples. For example: the scale for hospital population (HADS) is the one that presents lower results as it is configured for a population with certain limiting characteristics and with specific life circumstances.

The results obtained for anxiety and depression can be influenced by physical components of the CKD, which can be confused with the somatic part of the anxiety. Symptoms such as dyspnoea, muscle cramps, feeling of weakness, asthenia, etc., have been described in the literature as common in CKD and hence the possibility of interfering in the outcome of some scales that include them in their assessment as anxious-depressive symptoms [27]. We are aware of the different limitations that exist in each of the scales, to highlight the inaccuracy of the STAI that may be evaluating depressive components instead of anxiety components [27].

Both the STAI scale and the IDER scale measure two differentiated aspects for anxiety and depression: the state and the trait. The assessment of the anxious or depressive state is a transitory emotional condition in the precise time in which the questionnaire is completed. The assessment of the trait is a condition or propensity for the person to develop the disorder. Following the data obtained and using the data from the published articles as well, the anxious/depressive state of the patients in HD is greater than the trait, which means that patients in HD are not especially prone to develop these disorders, but we can suspect that they are usually in this state.

1. Implications for practice

The assessment and treatment of mental disorders in renal patients is a subject that is beginning to have an important relevance in the Spanish nephrology units. Unlike other countries, such as in Uruguay or Argentina, in Spain there is no mandatory legislation to include psychology professionals to treat these disorders with high prevalence in CKD patients on HD. More research in this field will be important to change health policies to consider the inclusion of the psychologist as part of the healthcare team in our country. The assessment of anxiety and depression, as we have seen, is quite heterogeneous and is not following specific criteria. Finding the ideal health questionnaire for the renal patients would be one of the priorities within the field of psycho-nephrology.

Table 4: Characteristics of the sample

Sex (n; %)	
Male	17 (68)
Female	8 (32)
Age (years)	
66.28 ± 14.7	
CKD Etiology (n; %)	
Unknown	14 (56)
Ischaemic	2 (12)
Glomerular	2 (12)
Vascular	2 (8)
Diabetes Mellitus	2 (8)
Polycystosis	1 (4)
Duration HD (months)	
15 [RIQ 6 – 44.5]	
Vascular Access (n; %)	
AV Fistula	14 (56)
AV Prothesis	7 (28)
Permanent Catheter	3 (12)
Temporary Catheter	1 (4)
HD hours/week (n; %)	
>12	4 (16)
12	16 (64)
<12	5 (20)
Kidney transplant waiting list (n; %)	
Yes	4 (16)
No	21 (84)
Charlson Index (n; %)	
Hight comorbidity	22 (88)
Low comorbidity	3 (12)
No comorbidity	0

anxiety and depression disorders are highly prevalent in patients on HD treatment. Furthermore, these disorders are perceived by patients even though there are dimensions in which self-perception is far from what the validated scales show.

In our study, most of the assessed patients perceived dissatisfaction with life to a much greater extent than that detected by the validated scale used. This possibly is influenced by a multitude of complex components that accompany each patient and his personal experience of the disease and treatment. All these issues should be worked in conjunction with psychology professionals to guarantee an adequate care. As we have mentioned, the National Health System provide clear ideas of how the holistic care of the patient with CKD can show important financial savings.

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