Original research

Advanced chronic kidney disease. Association between anxiety, depression and resilience

Enfermedad renal crónica avanzada. Asociación entre ansiedad, depresión y resiliencia

Laura Lacomba-Trejo[1], Joaquín Mateu-Mollá[2], Eva Carbajo Álvarez[3], Ana María Oltra Benavent[3], Antonio Galán Serrano[4]

[1]Department of Personality, Evaluation and Psychological Treatment, Faculty of Psychology, University of Valencia, Spain
[2]Valencian International University, Valencia, Spain
[3]Clinical and Health Psychology Unit, General University Hospital Consortium of Valencia. (CHGUV), Valencia, Spain
[4]Nephrology Service, General University Hospital Consortium of Valencia. (CHGUV), Valencia, Spain

Abstract

Introduction: Advanced chronic kidney disease (ACKD) is associated with a greater likelihood of suffering from depressive and anxious symptomatology. However, resilience may cushion these effects. The overall objective was to assess the anxious and depressive symptomatology and resilience of patients with ACKD.

Methods: 70 patients (80% male) aged 38-88 years (M=68.88; TD=9.98) were evaluated using the Hospital Anxiety and Depression Scale and the Connor Davidson Resilience Scale. Descriptive analyses, t-tests, Cohen d-tests and Pearson correlations were performed.

Results: 41.79% showed anxious symptomatology and 25.38% depressive, with moderate resilience scores. Emotional symptomatology was higher in women and was associated with lower resilience.

Conclusions: it is necessary to know the risk and protection factors in order to carry out intervention programs that affect them and favor the physical and mental health of the patient.

Key words: Advanced chronic kidney disease, anxiety, depression, resilience, risk factors, protective factors
doi: http://dx.doi.org/10.22265/acnef.6.2.344

Resumen

Introducción: el padecimiento de la enfermedad renal crónica avanzada (ERCA) se asocia con una mayor probabilidad de padecer sintomatología depresiva y ansiosa. No obstante, la resiliencia puede amortiguar estos efectos. El objetivo general fue valorar la sintomatología ansiosa, depresiva y la resiliencia de los pacientes con ERCA.

Métodos: 70 pacientes (80 % varones), con edades entre 38-88 años (M=68,88; DT= 9,98) fueron evaluados mediante la Escala Hospitalaria de Ansiedad y Depresión y la de Resiliencia de Connor Davidson. Se realizaron análisis descriptivos, pruebas t, d de Cohen y correlaciones de Pearson.

Resultados: un 41,79 % presentó sintomatología ansiosa y un 25,38 % depresiva, se observaron puntuaciones moderadas de resiliencia. La sintomatología emocional fue mayor en las mujeres y se asoció con una menor resiliencia. **Conclusiones:** es necesario conocer los factores de riesgo y protección para llevar a cabo programas de intervención que incidan en ellos y favorezcan la salud física y mental del paciente.

Palabras clave: Enfermedad renal crónica avanzada, ansiedad, depresión, resiliencia, factores de riesgo, factores de protección.
doi: http://dx.doi.org/10.22265/acnef.6.2.344

CC BY NC ND

Citation: Lacomba-Trejo L, Mateu-Mollá J, Carbajo Álvarez E, Oltra Benavent AM, Galán Serrano A. Enfermedad renal crónica avanzada. Asociación entre ansiedad, depresión y resiliencia. Rev. Colomb. Nefrol. 2019;6(2):103-111. http://dx.doi.org/10.22265/acnef.6.2.344
Correspondence: Laura Lacomba-Trejo, laura.lacomba@uv.es
Received: 21.3.19 • **Accepted:** 25.7.19 • **Published online**: 27.5.19

Introduction

Advanced chronic kidney disease (ACKD) represents a global health problem due to its high prevalence, but above all because of the personal and health costs it causes.[1] It is one of the most relevant causes of disease,[2] observed in 10% of adults, being much more common in men than in women. The main problems related to ACKD include type 2 diabetes mellitus (T2DM), heart diseases and arterial hypertension (AHT).[3]

In addition, ACKD may exhibit associated mental health problems, especially depressive symptomatology, probably due to the physical alterations of the patient with ACKD, although in many cases it is generated by the impact of the disease on the quality of life.[4] Meanwhile, the presence of anxious symptomatology has also been reported in this patients.[5,6]

It is relevant to highlight that those patients who show more depressive and anxious symptoms have a worse adherence to treatment and tend to not comply with it or abandon it more easily.[7-8]

Therefore, it is considered that psychological problems can significantly influence the course and outcome of the ACKD.[9]

However, this association can be mediated by resilience in general, and specifically in patients with ACKD.[10] Resilience is the ability to remain, grow, be strong and even succeed in life, despite adversities. It is the ability to move forward in a healthy way even with difficulties.[11] It could be considered the sum of different protective factors that enable personal adjustment.[12]

Concretely, the diagnosis and suffering of a chronic disease (CD) such as ACKD, can be a great personal challenge, since it implies acquiring new habits of life and following a very strict treatment that mainly consists of a very restricted diet, a decrease of fluid intake and an increased drug intake.[13-14]

Resilience can help the individual to positively adapt to the situation, accepting the limitations and adhering better to treatment,[15] being able to mitigate the psychological, social and economic effects of the CD[16] regardless of the sex and age.[17]

Thus, patients with greater resilience have less anxious and depressive symptomatology, which helps them to adapt to ACKD.[18] However, the studies point out that patients with ACKD show less resilience than other patients.[17]

Therefore, the objective of the present study was to analyze the depressive and anxious symptomatology of patients with ACKD and their resilience, and to observe the relationships between the variables under study.

Methods

Participants

The participants were 70 patients aged 38-88 years (M = 68.88, SD = 9.98), followed-up in the Nephrology Unit of the General University Hospital Consortium of Valencia and diagnosed with ACKD, 80% were men (n = 56). 14.29% had been hospitalized once, 5.71% twice and 5.71% three times or more. 17.14% had attended the emergency department once in the last year, 11.43% twice and 11.43% three times or more. The rest had not been hospitalized (74.28%), nor had attended the emergency service (60%) in the last year. 93.80% had associated arterial hypertension (AHT), 44.60% type 2 diabetes mellitus (T2DM) and 36.90% had a heart disease. Of the patients with T2DM, 44.83% had an associated heart disease. The comorbidity data of the patients can be consulted in Table 1.

As for the relevant sociodemographic data, 84.85% lived accompanied, for more information, consult. Table 2.

Procedure

The evaluation was conducted by a psychologist in a single pass and temporary moment. The patient had been referred from the Nephrology Unit to the Clinical and Health Psychology Unit for evaluation

Table 1. Percentage of patients with different alterations.

		T2DM Heart disease			
		Yes	No	Yes	NO
HTA (%)	Yes	96,55	91,67	91,67	95,12
	No	3,45	8,33	8,33	4, 88

Table 2. Descriptive statistics of sociodemographic variables.

Variable	Category	%
Academic level	Unknown	1,54
	Incomplete elementary school	29,23
	Complete elementary school	27,69
	High school	27,69
	Superior studies	13,85
Marital status	Single	7,69
	Married/couple	72,31
	Widow	10,77
	Divorced	9,23
Occupation	Active	3,08
	Unemployed	6,15
	Temporary leave	1,54
	Incapacity	10,77
	Retired	78,46

within the protocol of the Renal Patient School Project. The patient was informed of the procedure to follow, ensuring him/her the commitment of confidentiality and informing him/her about the registration of personal data. After signing the informed consent, the questionnaires were administered.

As a general criterion of inclusion to be part of the study, the patient must have ACKD in stage 3b or higher. Patients with psychological pathologies prior to the study and with cognitive impairment were excluded. The present study was endorsed by the Ethical Committee of the General University Hospital Foundation of Valencia, Spain.

Measurements

Ad hoc records were used to collect information on sociodemographic and medical variables. We

conducted an individual interview with the patient. The psychological variables analyzed were:

Anxious and depressive symptomatology through the Hospital Anxiety and Depression Scale (HADS) of Zigmond and Snaith,[19] version adapted to Spanish by Ibáñez and Caro,[20] that evaluates the cognitive depressive and anxious symptomatology, eliminating the somatic to differentiate between physical and emotional symptomatology of individuals with a physical illness. It consists of 14 items that give rise to two subscales, the odd items form the anxiety subscale (HADS-A) and the pairs form the depression subscale (HADS-D). All of them range from 0 to 3, with 0 representing the minimum score or no presence of symptoms and 3 the maximum presence thereof. It is necessary to reverse the items 1, 3, 6, 8, 10, 11 and 13, by the sum of the items that make up the subscales, the values of anxious and depressive symptoms. According to the above, a total score of emotional distress can be obtained by adding the items of both. The interpretation of the values can be consulted in Table 3.[21]

The HADS has been used in patients with ACKD, obtaining adequate psychometric properties.[6]

In the present study, an adequate internal consistency was found in terms of emotional distress (a = 0.76) and depressive symptomatology (a = 0.84), however, the scores were not as adequate for the anxiety subscale (a = 0.50), possibly due to the small number of participants.

Resilience through the Connor-Davidson Resilience Scale (CD-RISC),[22] in its version adapted to Spanish. This scale has two fundamental versions, one of 25 items, and its reduced version of 10. The 10-item scale has been used in the present study due to its brevity and easy understanding by the patients and its adequate psychometric properties shown in clinical and non-clinical samples.[23] It has a Likert-type format from 0 to 4, where 0 means "not at all" and 4 "always." With the sum of the items, a total resilience score is obtained.[24] In the validation study in a Spanish sample of people aged between 18 and 80 years, scores <27 are considered as low, and >36 as high.[25-27]

In this study, it was found an adequate internal consistency for the resilience scale (α = 0.77).

Research design

The design of this work is cross-sectional of single pass in a single temporary moment.

Data analysis

Descriptive analyses, and t tests for independent samples were carried out in order to observe the differences between men and women, calculating the effect size using Cohen's *d*, considering small values of effect size those ≈0.20, medium ≈0.50 and high ≈0.80,[24] and Pearson correlations to establish relationships between the variables studied, all of this using the statistical software SPSS 24.0.

Table 3. Interpretation of the HADS scores.

	Anxiety	Depression	Emotional distress
Normal or absence			
Probable case	8-10	8-10	-
Clinical problem	>10	>10	=20

Note: Taken from Estrés, Ansiedad y Depresión en cuidadores principales de pacientes pediátricos con Diabetes Mellitus Tipo 1", por L. Lacomba-Trejo, S. Casaña-Granell, M. Pérez-Marín e I. Montoya-Castilla. Revista de Calidad de Vida y Salud, 2017; 10(1): 10-22.

Results

Descriptive analyses

Anxious and depressive symptomatology

Patients with ACKD presented moderate values of anxiety, depression and emotional distress (Table 4).

Thus, 41.79% suffered from anxious symptomatology and 13.43% of them had a clinical diagnosis of anxiety (Figure 1).

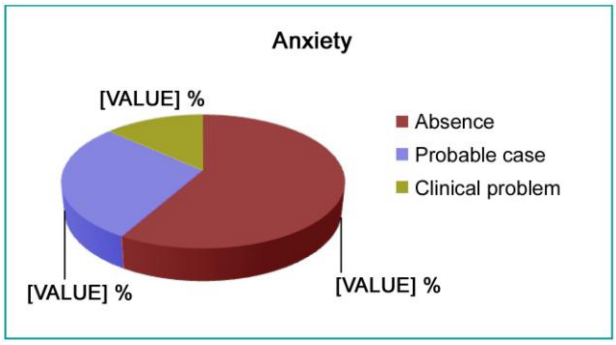

Figure 1. Anxiety in the patient with ACKD.

In addition, a significant percentage of patients with ACKD presented depressive symptomatology. In fact, 25.38% reported depressive symptoms. Of them, 14.93% presented a clinical diagnosis of depression (Figure 2).

When conducting the study of the emotional distress of patients with ACKD, it was observed that 9% showed a clinical problem of emotional discomfort.

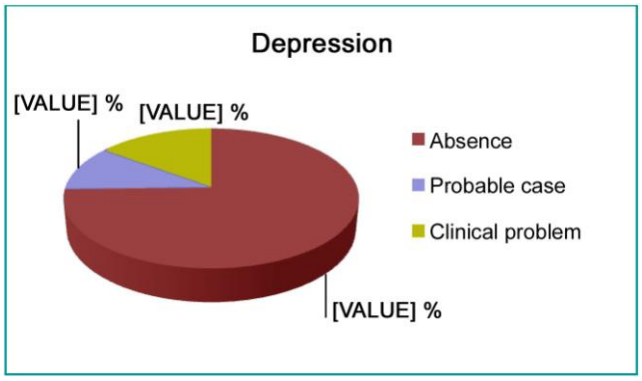

Figure 2. Depression in the patient with ACKD.

Resilience

Individuals with ACKD showed moderate values of resilience (M = 29.17; SD = 5.67). Low scores are observed in general (Table 5).

Comparison of means according to sex

The women presented more anxiety and emotional distress (Table 5). A medium or moderate effect size was obtained in all cases. Although there were no statistically significant differences between men and women in terms of resilience, the effect size of the sex variable was small-moderate (Table 6).

Relationships between the studied variables

Finally, the existing relationships between the variables under study (anxiety, depression, emotional distress and resilience) were analyzed. A linear, negative, moderate and significant association was found between anxiety ($r = -0.25$, $p < .05$), depression ($r = 0.25$, $p < .05$) and emotional distress ($r = 0.32$, $p < .01$) and resilience.

Table 4. Descriptive statistics of the studied variables.

	Scales	M	DT	Min	Máx
HADS	Anxiety	6,21	2,82	2	15
	Depression	4,91	4,51	0	19
	Emotional distress	11,12	5,89	4	31

Note. M= Mean; SD= standard deviation; Min= minimum; Máx= maximum.

Table 5. Percentiles of the scores in our sample.

	Percentile	Score
CD-RISC	10	22,40
	20	24
	30	26,10
	40	28
	50	29
	60	30
	70	33
	80	35
	90	37

Table 6. Differences in means according to sex.

	Scales		T	*gl*	*p d*	Mm	DTm	Mh	DTh
CDRISC	Resilience	1,16	64	,25	0,36	27,54	5,56	29,57	5,68
HADS	Anxiety	2,90	15,93	,01	1,59	8,50	3,55	5,60	2,27
	Depression	1,09	65	,28	,32	6,07	4,81	4,60	4,42
	Emotional distress	2,57	65	,01	,68	14,57	7,42	10,21	5,13

Note: t=test t-value; *df*=degrees of freedom; *p*= level of significance; *d*= effect size they consider small effect sizes those ≈0.2, middle ≈0.5 and high ≈0.8; Wm= Women's mean; SDw= standard deviation women; Mm= Men's mean; SDm= standard deviation men.

In addition to the above, those who presented more anxious symptoms also showed more depressive symptoms (r = 0.25, p < .05).

It should be noted that the age of patients with ACKD was not statistically significantly associated with anxiety (r = -0.73, p> .05), depression (r = 0.20, p> .05), emotional distress (r = 0.12, p> .05) or with resilience (r = 0.14, p> .05).

Conclusions

In response to the raised objective of analyzing the anxious and depressive symptomatology, and the levels of resilience of patients with ACKD, the data show that a large part of the patients with ACKD in our sample report high levels of anxious and depressive symptomatology, as well as low resilience. In this way, we observed higher levels of anxious symptoms, which is not in line with the previous studies consulted.[5] While our work used a specific questionnaire for patients with CD, which focuses on cognitive symptoms, other studies use generic instruments, which could mask the results.[28]

The impact generated by the ACKD on the quality of life of the people who suffer from it, the associated changes and the limitations that it generates,[13-14] can cause great discomfort.[6] In this sense, women have more anxious symptoms and emotional distress, as documented in the general population and in that with physical illnesses.[28]

However, in our study men and women have similar levels of depression, possibly because men with ACKD show greater deterioration and severity of

the disease, so that the physical and emotional symptoms may be more severe than in women.[3]

In line with the above, we observed how patients with ACKD showed low resilience scores, noting that there were patients with high resilience, according to established criteria.[25] Our data are consistent with previous studies that indicated an affectation on resilience in these patients, without differences depending on the sex, or related to age.[17]

Perhaps, if the number of participants were increased in future research, statistically significant differences could be observed in variables in which it has been seen a moderate effect of one variable over another. If the sample were equated by sex, possibly the results would be different. However, it should be noted that our study represents the reality of patients with ACKD, since there is a higher prevalence in men than in women.[3]

Added to the above, those patients with less resilience also presented more anxiety, depression and emotional symptoms.[17]

Future studies could increase the sample and evaluate other psychological and medical variables such as the perception and knowledge that the patient has about ACKD to observe if this relationship is mediated by other variables.

Having said that, our results point to the need to continue investigating risk and protective factors in people with ACKD, in order to be able to develop and implement intervention programs, taking into account the importance of psychological variables in the adaptation to ACKD. Specifically, it is interesting to develop interventions in which resilience is enhanced in these patients, since it can facilitate their adaptation to the disease, favoring their psychological well-being and quality of life, reducing the associated risk factors.

Acknowledgments

The authors would like to thank the participants for the time and effort devoted to our research.

Conflict of interest

The authors do not have any conflict of interest.

Ethical responsibilities

Protection of people and animals

The authors declare that no experiments were performed on human beings or animals for this research.

Data confidentiality

The authors declare that they have followed the protocols of their workplace on the publication of patient data.

Right to privacy and informed consent

The authors declare that patient data do not appear in this article.

Contribution of the authors

The authors are responsible for the research and confirm the authorship of this work. All authors have participated in its concept and design, in sample collection, analysis and interpretation of data, writing and correction of the manuscript.

References

1. Luján Ramos MA, Ramírez Arce JA, Acevedo Romero JM, Gómez Jiménez S, Cañas Osorio JM, Santander Bohorquez D, et al. Prevalencia de las alteraciones del metabolismo óseo-mineral asociadas a enfermedad renal crónica no en diálisis. Rev. Colomb. Nefrol. 2019;6(1):17-7. http://dx.doi.org/10.22265/acnef.6.1.311
2. Candelaria-Brito JC, Gutiérrez-Gutiérrez C, Bayarre-Vea HD, Acosta-Cruz C, Montes de Oca DM, Labrador-Mazón O. Caracterización de la enfermedad renal crónica en adultos mayores. Rev. Colomb. Nefrol. 2018;5(2):166-78. http://dx.doi.org/10.22265/acnef.0.0.308
3. Romero N, Pêrez P, Pérez J, Pérez K, Reyes J, Rodríguez A. Causas de enfermedad renal entre los pacientes de una unidad de hemodiálisis. Rev. Cuba. Urol. 2019;8(1). Recuperado de http://revurologia.sld.cu/index.php/rcu/article/view/461/498
4. Monzón AJ, Álvarez M, Gorostidi M, Escaf S. Problemas de la esfera sexual en paciente renal. SEMERGEN. 2019; 45(1):63-2. http://dx.doi.org/10.1016/j.semerg.2018.09.006
5. Hiricare, Pérez-Domínguez T, Rodríguez-Pérez A, García-Bello MA, Buset-Ríos N, Rodríguez-Esparragón F, Parodis-López Y, Rodríguez-Pérez, J. C. Progresión de la enfermedad renal crónica. Prevalencia de ansiedad y depresión en la poliquistosis renal autosómica dominante. Nefrol. 2012;32(3):275-418. http://dx.doi.org/10.3265/Nefrologia.pre2012.Feb.11379
6. Sierra CA, Donato RE, Aroca G, Depine SA, Gaviria G, Martínez A. Anxiety and depression in patients hospitalized with chronic kidney disease in Barranquilla clinics, Colombia. Glob J of Health Sci. 2018;10(11):144-152. http://dx.doi.org/10.5539/gjhs.v10n11p144
7. Cohen SD, Cukor D, Kimmel PL. Anxiety in patients treated with hemodialysis. Clin J Am Soc Nephrol. 2016;11(12):2250-55. http://dx.doi.org/10.2215/CJN.02590316
8. Rojas-Villegas Y, Ruíz-Martínez AO, González-Sotomayor R. Ansiedad y depresión sobre la adherencia terapéutica en pacientes con enfermedad renal. Rev. Psico. 2017; 26(1):1-13. http://dx.doi.org/10.5354/0719-0581.2017.46859
9. Karczewski SA, Keane M, Agarwal N. Psychological Aspects and Challenges of Living with Chronic Kidney Disease for Adolescents. En M Haddad, E Winnicki, S Nguyen (Eds.) Adolescents with Chronic Kidney Disease. 2019; Springer: Cham.
10. Liu YM, Chang HJ, Wang RH, Yan LK, Lu KC y Hou YC. Role of resilience and social support in alleviating depression in patients receiving maintenance hemodialysis. Ther Clin Risk Manag. 2018;14:441-51. http://dx.doi.org/10.22265/acnef.6.1.311
11. Rutter M. Resilience: Some conceptual considerations. J Adolesc Health. 1993;14(8):626-31.
12. López-Cortón, A. Factores predictores de procesos resilientes en jóvenes universitarios [Tesis doctoral]. [Coruña]. Universidad de Coruña, 2015. Recuperado a partir de: https://ruc.udc.es/dspace/bitstream/handle/2183/15355/Lopez-CortonFacal_Ana_TD_2015.pdf?sequence=7&isAllowed=y
13. Theofilou P. Quality of life in patients undergoing hemodialysis or peritoneal dialysis treatment. J Clin Med Res. 2012;3(3):132-8. http://dx.doi.org/10.4021/jocmr552w
14. Zouari L, Elleuch M, Feki I, Allouch C, Yaich S,Tha-bet J, et al. Depression in chronic hemodialysis patients: Report of 106 cases. Tunis Med. 2011;89(2):157-62. http://dx.doi.org/10.4103/1319-2442.202785
15. Bianchini DCS, Dell'aglio DD. Processos de resiliéncia no contexto de hospitalização: um estudo de caso. Paidéia. 2006;16(35):427-36.
16. Vinaccia SJ, Quiceno JM, Remor E. Resiliencia, percepción de enfermedad, creencias y afrontamiento espiritual-religioso en relación con la calidad de vida relacionada con la salud en enfermos crónicos colombianos. An Psicol. 2012;28(2):366-77. http://dx.doi.org/10.6018/analesps.28.2.148821
17. Bóell JEW, Silva DMGV, Hegadoren KM. Sociodemographic factors and health conditions associated with the resilience of people with chronic diseases: a cross sectional study. Rev. Latino-Am. Enfermagem. 2016;24:e2786. http://dx.doi.org/10.1590/1518-8345.1205.2786
18. Müller HH, Englbrecht M, Wiesener MS, Titze S, Heller K, Groemer TW, et al. Depression, Anxiety, Resilience and Coping Pre and Post Kidney Transplantation – Initial Findings from the Psychiatric Impairments in Kidney Transplantation (PI-KT)-Study. PLoS ONE. 2015;10(11):e0140706. http://dx.doi.org/10.1371/journal.pone.0140706
19. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatrica Scandinavica. 1993;67(6):361-0.
20. Ibáñez E, Caro I. La escala Hospitalaria de ansiedad y depresión. Su utilidad práctica en Psicología de la Salud. Boletín de Psicología. 1992;36:4369.

21. Lacomba-Trejo L, Casaña-Granell S, Pérez-Marín M, Montoya-Castilla I. Estrés, Ansiedad y Depresión en cuidadores principales de pacientes pediátricos con Diabetes Mellitus Tipo 1". Revista de Calidad de Vida y Salud, 2017;10(1):10-22.

22. Connor KM, Davidson JRT. Development of a new Resilience Scale: The Connor-Davidson Resilience Scale (Cd-Risc). Depress Anxiety. 2003;18:76-82. http://dx.doi.org/10.1002/da.10113

23. Notario-Pacheco B, Solera-Martínez M, Serrano-Parra MD, Bartolomé-Gutiérrez R, García-Campayo J, Martínez-Vizcaíno V. Reliability and Validity of the Spanish Version of the 10-Item Connor-Davidson Resilience Scale (10-Item CD-RISC) in Young Adults. Health Qual Life Outcomes. 2011;9:63. http://dx.doi.org/10.1186/1477-7525-9-63

24. Campbell-Sills L, Stein MB. Psychometric Analysis and Refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-Item Measure of Resilience. J Trauma Stress, 2007;20(6):1019-8. http://dx.doi.org/10.1002/jts.20271

25. Broche, Y., Rodríguez, B.C., Pérez, S., Alonso, G., Hernández, A., y Blanco, Y. Escala de Resiliencia de Connor-Davidson (CD-RISC). En B.C. Rodríguez y O. Moleiro. Validación de Instrumentos Psicológicos: Criterios básicos. Cuba: Editorial Feijóo; 2012.

26. Cohen, J. Statistical power analysis for the behavioral sciencies (2nd ed.). Hillsdale, N.J.: Erlbaum.1988.

27. Castresana C, García-Estrada A, González JL. "Hospital Anxiety and Depression Scale" y Psicopatología Afectiva. An de Psiquia. 1995;11(4):126-0. http://dx.doi.org/0213-0599/95/11.04/126

28. Mateu-Mollá J, Valero-Moreno S, Lacomba-Trejo L. Impacto económico y social de la comorbilidad ansiosodepresiva en mujeres tras infarto agudo de miocardio. RIPS. 2018;6(21):18-3.