SHORT VERSION OF THE PORTUGUESE SCALE POSITIVE AND NEGATIVE AFFECTION SCHEDULE FOR PEOPLE UNDERGOING HEMODIALYSIS

Luís Manuel Mota de Sousa – Department of Nursing, University of Évora, Évora, Portugal. ORCID: https://orcid.org/0000-0002-9708-5690

Cristina Maria Alves Marques-Vieira – Institute of Health Science, Universidade Católica Portuguesa. Centre for Interdisciplinary Research in Health (CIIS), Lisbon, Portugal. ORCID: https://orcid.org/0000-0002-4409-7911

Maria do Céu Marques – Department of Nursing, University of Évora. Comprehensive Health Research Centre, Évora, Portugal. ORCID: https://orcid.org/0000-0003-2658-3550

Sandy Silva Pedro Severino – Regional Health Administration of Lisbon and Tagus Valley, Lisbon, Portugal. ORCID: https://orcid.org/0000-0002-5162-2980

Lara Manuela Guedes de Pinho – Polytechnic Institute of Portalegre, School of Health. University of Évora. CINTESIS, Porto. Portugal. ORCID: https://orcid.org/0000-0003-1174-0744

Helena Maria Guerreiro José – University of Algarve, Faro. UICISA-E, Coimbra, Scholar of the European Academy of Nursing Science. Portugal. ORCID: https://orcid.org/0000-0002-2626-8561

ABSTRACT

Objective: To analyze the psychometric properties of the Portuguese short version of the Positive and Negative Affect Schedule in people with chronic kidney disease undergoing hemodialysis.

Methods: Psychometric Study. A random sample of 183 people undergoing hemodialysis in two clinics and a nephrology service in the region of Lisbon, Portugal, was used. Data were collected from May to June 2015. Psychometric properties were evaluated: validity (construct, convergent and predictive), reliability (Cronbach's **α**) and stability (test-retest).

Results: The Portuguese short version of the Positive and Negative Affect Schedule has two distinct dimensions of positive and negative, reliable and stable, obtained by interview and questionnaire.

Conclusions: The validity and reproducibility of the Portuguese short version of the Positive and Negative Affect Schedule in people with chronic kidney disease were consistent with the original version and the version of the Portuguese scale.

Keywords: Emotion; chronic renal insufficiency; validation studies; psychometrics; nursing.

INTRODUCTION

Chronic kidney disease (CKD) is an independent risk factor for a number of unfavorable outcomes, including cardiovascular disease, especially in the elderly, which has seen faster growth of end-stage renal disease (ESRD). Portugal has a higher unadjusted European incidence and a higher prevalence of ESRD[1].

According to the annual report of the Registry Office of the Portuguese Society of Nephrology (SPN), during 2018, 20730 people were submitted to substitution treatment, of which 12 227 (58.9%) in hemodialysis (HD)[2].

HD is the treatment modality used in CKD and acute conditions and consists of a process of blood filtration and purification. This process eliminates excess substances in the body, such as creatinine and urea[3].

People with CKD see their quality of life (QOL) radically changed after diagnosis and treatment, living complex situations with implications for physical and emotional well-being[4].

Perceived QOL and well-being are important measures of health outcomes in people with CKD, and subjective well-being (SWB) is considered in the scientific community as an indicator in QoL assessment[5].

SWB is characterized by a variety of phenomena that include emotional responses, domains of satisfaction, and judgment about overall life satisfaction. The components of SWB are positive or pleasant affect (for example. joy, contentment, pride, affection and happiness), negative or unpleasant affect (for example. guilt, shame, anxiety, worry, anger, stress and depression), satisfaction with life (for example, desire for change, satisfaction with current, past and future life) and a domain of satisfaction (for example, work, family, leisure, health, finance and self-development)[6].

In people with CKD, subjective well-being is positively related to subjective happiness, positive affect, and quality of life is negatively associated with negative affect[7]. In addition, higher levels of subjective happiness are associated with higher levels of overall life satisfaction and sense of humor[8]. Positive and Negative Affect Schedule (PANAS) can be used to measure the affective dimension of the concept of SWB[9]. The PANAS scale[10] was developed to allow brief, easy to administer and valid measures to assess positive and negative affect[11]. PANAS enables the measurement of positive affect (PA) and negative affect (NA), which correspond to the two general dimensions that describe people's affective experience. High PA is related to pleasure and subjective well-being, and consists of emotions such as enthusiasm, inspiration and determination[10]. High NA is associated with displeasure and subjective discomfort, which is characterized by emotions such as fear, nervousness and disturbance.

PANAS has been validated in several cultures and in different languages, namely English, German, Turkish, Estonian, Spanish, Russian, Japanese, Indian, French and Pakistani and Hungarian[12]. It is also validated in Brazilian Portuguese[13] and European Portuguese in version 20 items[11] and short version[14]. It is validated in Portuguese for people with CKD[12].

The guiding question of this research was: what are the psychometric properties of the short version of the Portuguese PANAS scale in people with CKD?

In this sense, the objective of this study is to analyze the psychometric properties of the short version of the Portuguese PANAS scale in people with CKD undergoing hemodialysis.

METHOD

It is a psychometric study. The population consists of people with CKD undergoing HD in two units of the Dialysis Clinic and in a hospital unit in the Lisbon region, Portugal. Data were collected between May and June 2015.

The inclusion criteria used were: people who underwent HD for at least six months and aged 18 years and over and the exclusion criteria were: people with active psychiatric illness; cognitive impairment and unbalanced visual or hearing impairment.

In applying the selection criteria, we used the support of the clinical files, as well as the attending physician.

Of the 253 people with CKD who met the eligibility criteria (139 in Clinic 1, 114 in Clinic 2 and 15 in the hospital unit), a random sample of 183 people undergoing HD (93 from Clinic 1, 78 Clinic and 12 from the hospital unit).

The interviews were conducted by five nurses during the HD session, who were trained by the principal investigator, about the objectives, the instruments to be completed and the way to collect the data, and provided a written script to support the explicit. The data collection instrument consisted of two parts. The first part concerned the characterization of the sample profile at a sociodemographic and clinical level: age, gender, nationality, education, occupation, marital status, duration of dialysis sessions, presence of hypertension and diabetes. The second part consisted of the following scales: positive and negative affectivity, the Portuguese version of PANAS[12], subjective happiness, the Portuguese version of the Subjective Happiness Scale (SHS)[15], satisfaction with life (SWLS), Personal Wellbeing Index (PWI)[16], Multidimensional Sense of Humor Scale (MSHS)[17] was used.

The PANAS scale[10] was translated and adapted to the Portuguese population[11], and consists of two subscales: PA and NA, with ten items each, where the constructs are evaluated on a *Likert* scale from 1 to 5. It is requested that participants indicate to what extent they felt each of the emotions (for each of the 20 items) at the present time. In the PA and NA dimensions are more present the higher the score, with a maximum of 50 points. The reduced version of the Portuguese PANAS consists of the items enthusiastic, inspired, determined, interested and active for the PA dimension, and the scared, frightened, Distraught, nervous and guilty items for the NA dimension[14]. Cronbach's **α** coefficient, of the Portuguese version in people with CKD, for PA was 0.86 and for NA was 0.88[12].

The SHS consists of four items, in which participants must self-characterize in comparison to their peers (items two and three) and rank their levels of happiness and unhappiness (items one and four). The score of the last item is reversed. SHS uses a seven-position analog visual scale based on two antagonistic statements that express the level of happiness or lack thereof. The application of the Portuguese scale in people undergoing HD presents a single factor with Cronbach's **α** internal reliability of 0.91[15].

Satisfaction with life in general or the personal well-being index consists of seven domains for the overall measure of life satisfaction (satisfaction with standard of living, health, personal fulfillment, personal relationships, sense of security, connection with the community, and security with the future). For each domain, participants were asked to rate their satisfaction on a scale from 0 (extremely dissatisfied) to 10 (very satisfied), with a neutral intermediate position. The personal well-being index was measured on a scale ranging from 0 to 100 (maximum percentage of the scale). The Portuguese scale in people with CKD shows the existence of a single factor, with Cronbach's **α** internal reliability of 0.83[16].

The MSHS is a 24-item instrument that assesses multidimensional aspects of sense of humor. Items are scored on a 5-point *Likert*, which ranges from 1 (strongly agree) to 5 (strongly disagree). The Portuguese version of the MSHS showed a three-factor structure, "Humor Production and Social Use of Humor," "Adaptive Humor and Appreciative Humor," and "Attitude to Humor," with Cronbach's **α** values of 0.93, 0.90 and 0.83, respectively[17].

The study followed the recommendations of the standards required by the Declaration of Helsinki and was approved by the Ethics Committees of the two institutions involved (Clinic – Protocol No. 1/2015, and at the Hospital Center – Protocol No. 175/2015). All participants signed an informed consent form after being informed of the guarantee of confidentiality of their data and the right to leave the study without penalty for themselves.

The Statistical Package for Social Sciences (SPSS) version 24.0 was used to perform the statistical analyzes. In the context of the psychometric properties evaluation, the reliability study was made using Cronbach's **α** and the stability evaluation was performed using the intraclass correlation coefficient (ICC) and Spearman-Brown correlation coefficient[18] in the test-retest (after 48 to 96 hours in 40 randomly selected people, 26 per questionnaire and 14 per interview). A minimum value of 0.70 was adopted as satisfactory internal consistency[18]. In the validity study, the exploratory factor analysis (EFA) was performed using the maximum likelihood method, with Varimax rotation. Suitability was verified by the Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity test. Convergent validity was assessed by Pearson's correlation (r) between the reduced version of PANAS, PANAS 20 items, the SHS, IBP and MSHS. To verify discriminant validity,

Student's t-test for independent samples was used, or ANOVA for more than two independent samples. Continuous variables were expressed as mean, standard deviation or median and categorical variables as percentages or absolute values. The cutoff point was the median age and time of hemodialysis to generate categorical variables. The significance level of $p < 0.05$ was adopted.

RESULTS

In this study, a sample of 183 people diagnosed with CKD was used, with a mean age of 59.17 (± 14.64) years, most of them men (59.6%). Regarding nationality, this was varied, namely Portuguese (78.7%), Cape Verdean (13.7%), Sao Tome (3.3%), Angolan (2.2%), Guinean (1, 6%) and Bulgarian (0.5%). Regarding education most participants were in the 4th grade (41.1%), and the rest were illiterate (3.3%), had the 6th grade (18.9%), the 9th grade (15%), the 12th grade (12.2%) and higher education (9.4%). Regarding marital status, most were married (53.8%), and the remaining were single (28%), widowed (11.5%) and divorced (6.6%). Occupation was retired (76%) and regular employees (24%). Regarding health data, people had entered the hemodialysis program about 70.09 (± 54.2) months, had hypertension (61.9%) and diabetes (25.8%).

Reliability and stability
In the analysis of psychometric properties, the reproducibility of the short version of PANAS, verified by Cronbach's **α** coefficient, in PA varied from 0.76 to 0.81 and in NA ranged from 0.76 to 0.78 after the exclusion of each item.

In the stability analysis (test-retest), for the AP the data obtained by questionnaire (n=26) presented a global Cronbach's **α** in the first evaluation of 0.84 and second evaluation of 0.85. The Spearman-Brown correlation coefficient was 0.89 and the ICC was 0.91 [95% CI; 0.85 to 0.96, p <0.001]. By interview (n=14) the global Cronbach's **α** in the first evaluation was 0.79 and the second evaluation was 0.76. The Spearman-Brown correlation coefficient was 0.44 and the ICC was 0.83 [95% CI; 0.65 to 0.94, p <0.001].

In the stability analysis (test-retest), for NA the data obtained by questionnaire (n=26) presented a global Cronbach's **α** in the first evaluation of 0.68 and second evaluation of 0.83. Spearman's correlation coefficient Brown was 0.89 and ICC was 0.87 [95% CI; 0.79 to 0.94, p <0.001]. By interview (n=14) the global Cronbach's **α** in the first evaluation was 0.68 and the second evaluation was 0.67. The Spearman-Brown correlation coefficient was 0.48 and the ICC was 0.61 [95% CI; 0.22 to 0.85, p <0.01]. These analyzes allowed to

demonstrate the consistency and stability between evaluations by means of self-reported questionnaire and interview.

Validity

Exploratory factor analysis (KMO=0.77; Bartlett χ^2 sphericity test [45] 639.229, p<0.001) presented two factors, which accounted for 48.3% of the explained variance of the construct. All items were factor loaded with appropriate factor loads (ie>0.3) (Table 1). Cronbach's α coefficient for PA was 0.81 and for NA was 0.81.

Table 1 – Exploratory factor analysis of the Portuguese version of the reduced version of PANAS in people with chronic kidney disease. Lisbon, Portugal, 2015. (n=183).

	Factor 1 Negative Affect	Factor 2 Positive Affect
1. Interested		0.542
2. Distraught	0.691	
3. Guilty	0.694	
4. Scared	0.782	
5. Excited		0.738
6. Inspired		0.741
7. Nervous	0.639	
8. Determined		0.662
9. Active		0.718
10. Frightened	0.651	
Own numbers (Eigenvalue)	3.017	2.833
Variance explained	25.1%	23.2%
α Coefficient *	0.81	0.81
Mean (SD †)	7.1 (±3.4)	13.4 (±4.8)

* α: Cronbach's α; † SD: Standard Deviation.
Source: Authors.

In the convergent validity study, there was a high positive correlation between the 10--item version and the short 5-item version (*r*=0.92; p<0.001), moderate positive correlation between the PA score with SHS, IBP. , production and social use of mood, adaptive mood and mood appreciation and (respectively *r*=0.41; p<0.001; *r*=0.32; p<0.001 *r*=0.33; p<0.001; *r*=0.29; p <0.001), and low positive correlation with Attitude to Humor (*r*=0.18; p<0.05).

High scores on positive affectivity are related to higher scores on subjective happiness; in satisfaction with life in general; production and social use of humor; adaptive humor and appreciation of humor and with attitude towards humor. There was a high positive correlation between NA 10-item version and NA 5-item short version ($r=0.96$; $p<0.001$), moderate negative correlation with adaptive mood and mood appreciation ($r=-0.25$; $p<0.01$) and low negative correlation between NA 5 items with Subjective Happiness, PPI, attitude towards humor (respectively, $r=-0.18$; $p<0.05$; $r=-0.16$; $p<0.05$; $r=-0.18$; $p<0.05$) thus, higher scores on negative affectivity are associated with lower scores on subjective happiness, overall life satisfaction, adaptive mood and humor appreciation and also with attitude towards humor (Table 2).

Table 2 – Correlations between the short version of PANAS, PANAS subjective happiness, overall life satisfaction, multidimensional mood, and reliability of measurements in people with chronic kidney disease. Lisbon, Portugal, 2015. (n=183).

α Cronbach	Positive Affect 5 items	Negative Affect 5 items
Positive Affect 10 items	0.918‡	0.065
Negative Affect 10 items	0.048	0.960‡
Subjective Happiness (SHS)	0.409 ‡	-0.181*
General Satisfaction with Life (PPI)	0.320 ‡	-0.159*
Production and social use of humor	0.331‡	-0.090
Adaptive Humor and Humor Appreciation	0.285 ‡	-0.247 †
Attitude to Humor	0.175*	-0.181*

*<0,05; † p<0,01; ‡p<0,0001.
Source: Authors.

Table 3 shows the results regarding discriminant validity, in order to identify whether PA 5 items and NA 5 items were able to differentiate gender, age, nationality, education, professional activity, marital status, presence of hypertension, diabetes and dialysis time. Based on the results, it was found that the PA 5 items can discriminate age, education, professional activity and presence of diabetes. NA 5 items cannot discriminate sociodemographic and clinical variables. Older, less educated, retired people with diabetes have lower PA values.

Table 3 – Discriminatory validity of the short version of PANAS people
with chronic kidney disease. Lisbon, Portugal, 2015. (n=183).

Variables	PA5* Media (±SD‡)	NA5† Media (±SD‡)
Genre		
Male	13.2±4.7	7.3±3.4
Female	13.6±4.8	6.9±3.3
Age		
Less than 63 years old (0.05)	14.1±4.6§	6.7±3.4
Over 63 years	12.5±4.9	7.5±3.4
Nationality		
Portuguese	13.2±4.8	7.2±3.3
Other	13.7±4.6	6.7±3.5
Schooling		
Less than 12 years	12.9±4.8§	7.1±3.4
Over 12 years	14.8±4.5	7.1±3.5
Professional activity		
Retired	12.9±4.9§	7.0±3.3
Active	14.8±4.9	6.9±3.4
Marital status		
Single	13.7±4.6	7.0±3.4
Married	13.4±4.9	7.2±3.3
Other	12.6±4.6	6.9±3.5
Arterial hypertension		
No	13.6±4.8	7.1±3.1
Yes	13.2±4.8	7.0±3.5
Diabetes		
No	13.7±4.7§	7.1±3.5
Yes	12.2±4.9	7.1±2.9
Hemodialysis time		
Less than 60 months	13.1±4.5	7.1±3.4
Over 60 months	13.5±5.0	7.1±3.3

* PA5: Positive affect, † NA5: Negative affect; ‡ SD: standard deviation; § <0.05.
Source: Authors.

DISCUSSION

Internal reliability values are similar to the Portuguese version of PANAS for people with CKD[12]. The **α** values obtained in this study are considered good[18-19]. The retest test in the original version was 0.54 for PA and 0.45 for NA[10]. In this study the values of the retest test are higher than 0.7, which indicates that there is good stability of measurements[18-19].

In construct validity, KMO results were lower than those of the Portuguese version in people with CKD (KMO=0.81%), however, the similar explained variance (48%)[12]. In this study, the KMO values are good and reveal adequacy of the model to the data[18-19]. The factor weights were similar to the Portuguese version for people with CKD[12]. All items were loaded in two factors, similar to other studies of the European Portuguese versions, the 20-item version[11], the reduced version[14] and the Portuguese version for people with CKD[12].

Convergent validity also showed results in the expected directions for PA and NA. In this sense, it was found that high scores on positive affect are associated with higher scores on subjective happiness; satisfaction with life in general and all dimensions of the multidimensional scale of sense of humor. In addition, higher scores on negative affectivity were found to be related to lower scores on subjective happiness; in satisfaction with life in general; adaptive humor and appreciation of humor and also with attitude towards humor. Thus, there are indications that these results fit the SWB models[6] in which pleasant or positive affect is related to joy, contentment, pride and happiness; and that unpleasant or negative affect is associated with guilt and shame, anxiety and worry, anger, stress and depression[6]. Thus, support was obtained for the external validity of measures PA and NA, similarly to the samples[10,20].

The PA subscale can discriminate people with CKD undergoing HD according to age, education, professional activity and diabetes. Older people with CKD, less educated, retired and with diabetes report lower levels of PA.

Reliability values were similar to the original version[10], the European Portuguese version in the 20-item version[11], the reduced version[14], and the Brazilian Portuguese version[13]. The Portuguese version of the PANAS scale in this sample is reliable and reproducible[18-19].

The results of the psychometric properties are globally in agreement with the original scale[10] and the adapted versions for European Portuguese in the 20-item version[11], and in the reduced version[14] and Brazilian Portuguese[13] as well. with the Portuguese version PANAS and in people with CKD[12], which indicates that this reduced version allows valid

and reliable measurements of positive and negative affectivity in people with CKD undergoing HD.

Study limitations include: data collection during the hemodialysis session, which may have influenced the responses, since the technique may at some point cause discomfort to the person. In this regard, it is recommended that in future research data collection be performed prior to the HD session.

This study used a representative sample of people with CKD who underwent HD. A confirmatory factor analysis is recommended for this specific population to confirm the scale structure of the reduced version of PANAS.

CONCLUSION

The validation of the reduced version of the Portuguese PANAS scale in people with CKD has similar properties to the PANAS scale of 20 items in people with CKD.

In the construct validity study, exploratory factor analysis was used, and two factors measuring positive and negative affect were verified. In convergent validity, PA is associated with measures of subjective well-being (subjective happiness, general satisfaction with life), and sense of humor. In discriminant validity it was verified that the PA can discriminate the age, education, professional activity and presence of diabetes.

The reproducibility study showed that the reduced version of the Portuguese PANAS scale is reliable and stable when data collection is done through interviews and self--completed questionnaires.

The reduced version of the Portuguese PANAS scale can be used to evaluate positive and negative affect in people undergoing HD, both in the self-completed questionnaire and in the interview version.

The assessment of affectivity should be a key point of nursing interventions in people with CKD undergoing HD, and as implications for practice, we consider this instrument to be useful in assessing their impact. In addition, the reduced version has some advantages such as being easier to apply and having a shorter filling time.

REFERENCES

1. Lascasas JM, Fonseca I, Malheiro J, Santos S, Campos A, Castro A, et al. Dados demográficos, características clínicas e peso da doença cardiovascular em uma coorte portuguesa de pacientes idosos com doença renal crônica. J Bras Nefrol. 2019 Jan 10 [cited on 2019 Dec 24];41(1):29-37. DOI: 10.1590/2175-8239-JBN-2018-0120

2. Sociedade Portuguesa de Nefrologia. Relatório de 2018 do Gabinete de Registo do Tratamento da Doença Renal Crónica. 2019 [cited on 2019 Dec 24]. Available from: http://www.bbg01.com/cdn/rsc/spnefro/gabreg/305/RelatriosAnuais2018.pdf

3. Silva ZN, de Castro Souza ME, Romão AK. Doença renal crônica: o impacto da adesão do paciente ao tratamento hemodialítico. ÚNICA Cad Acad. 2018 Sep 27[cited on 2019 Dec 24];3(1). Available from: http://co.unicaen.com.br:89/periodicos/index.php/UNICA/article/view/76

4. Rocha MA, Barata RS, Braz LC. O bem-estar de pacientes renais crônicos durante o tratamento com hemodiálise e diálise peritoneal. Rev Electrón Acervo Saúde. 2019 Apr [cited on 2019 Dec 24]; 1(21): e670. Available from: https://doi.org/10.25248/reas.e670.2019

5. Weinberg MK, Bennett PN, Cummins RA. Validation of the personal wellbeing index for people with end stage kidney disease. Applied Research in Quality of Life. 2016 Dec 1 [cited on 2019 Dec 24];11(4):1227-1240. Available from: https://doi.org/10.1007/s11482-015-9431-x

6. Diener E, Suh EM, Lucas RE, Smith HL. Subjective well-being: Three decades of progress. Psychological Bulletin. 1999 [cited on 2019 Dec 24];125:276-302. Available from: http://web.yonsei.ac.kr/suh/file/Subjective%20Well%20Being_Three%20Decades%20of%20Progress%20-Diener,%20Suh,%20Lucas&Smith.pdf

7. Sousa LM, Antunes AV, Baixinho CR, Severino SS, Marques-Vieira C, José HM. Subjective Wellbeing Assessment in People with Chronic Kidney Disease Undergoing Hemodialysis. In T Rath (Ed.) Chronic Kidney Disease - from Pathophysiology to Clinical Improvements. Croácia: InTech; 2018:281-93 DOI: 10.5772/intechopen.71194. Available from: https://www.intechopen.com/books/chronic-kidney-disease-from-pathophysiology-to-clinical-improvements/subjective-wellbeing-assessment-in-people-with-chronic-kidney-disease-undergoing-hemodialysis

8. Sousa LM, Antunes AV, Marques-Vieira CM, Silva PC, Valentim OM, José HM. Subjective wellbeing, sense of humor and psychological health in hemodialysis patients. Enferm Nefrol. 2019 Mar[cited on 2019 Dec 24]; 22(1):34-41. Available from: http://sciel o.isciii.es/scielo.php?script=sci_arttext&pid=S2254-28842019000100006

9. Galinha IC, Pais-Ribeiro JL. The Structure and Stability of Subjective Well-Being: a Structure Equation Modelling Analysis. Appl Res Qual Life [Internet]. 2008 [cited on 2019 Dec 24]; 3(4):293-314. Available from: https://www.researchgate.net/profile/Jose_ Pais-Ribeiro/publication/226002463_The_Structure_and_Stability_of_Subjective_Well-Being_a_Structure_Equation_Modelling_Analysis/links/00463527e4e2405535000000. pdf

10. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. J Pers Soc Psychol. 1988; 54:1063-70.

11. Galinha I, Ribeiro J. Contribuição para o estudo da versão portuguesa da Positive and Negative Affect Schedule (PANAS): II - Estudo psicométrico. Anal Psicol [Internet]. 2005 [cited on 2019 Dec 24]; 23(2):219-27. Available from: http://publicacoes.ispa.pt/index.php/ ap/article/viewFile/84/pdf

12. Sousa LM, Marques-Vieira CM, Severino SS, Rosado JL, José HM. Validação da Positive And Negative Affect Schedule em Pessoas com doença renal crônica. Texto Contexto Enferm. 2016;25(4):1-8. Available from: http://dx.doi.org/10.1590/0104-070720 16005610015

13. Carvalho HWD, Andreoli SB, Lara DR, Patrick CJ, Quintana MI, Bressan, RA et al. Structural validity and reliability of the Positive and Negative Affect Schedule (PANAS): evidence from a large Brazilian community sample. Rev Bras Psiquiatr [Internet]. 2013 [cited on 2019 Dec 24]; 35(2): 169-172. Available from: http://dx.doi.org/10.1590/1516-4446-2012-0957.

14. Galinha IC, Pereira CR, Esteves F. Versão reduzida da escala portuguesa de afeto positivo e negativo-PANAS-VRP: Análise fatorial confirmatória e invariância temporal. Psicologia [Internet]. 2014 [cited on 2019 Dec 24]; 28(1):50-62. Available from: http://w ww.scielo.mec.pt/scielo.php?script=sci_arttext&pid=S0874-20492014000100005&lng=pt &tlng=p.

15. Sousa LM, Marques-Vieira CM, Severino SS, Pozo-Rosado JL, José HM. Validation of the Subjective Happiness Scale in people with Chronic Kidney Disease. Enferm Global. 2017 [cited on 2019 Dec 24];16(3):60-70. Available from: https://www.redalyc.org/pdf/ 3658/365851829002_2.pdf

16. Sousa LMM, Marques-Vieira CMA, Severino SSP, Pozo Rosado JL, José HM. Validación del Índice de Bien-estar Personal en personas con enfermedad renal crónica. Enferm Nefrol. 2016 [cited on 2019 Dec 24];19(2):135-41. Available from: http://scielo.isciii.es/scielo.php?pid=S2254-28842016000200005&script=sci_arttext&tlng=en

17. Sousa LMM, Marques-Vieira CM, Severino S, Pozo-Rosado J, Antunes AV, José HM. Validation of the multidimensional sense of humor scale in people with chronic kidney disease. J Nurs Educ Pract. 2018 [cited on 2019 Dec 24];8(3):72-9. Available from: http://www.sciedupress.com/journal/index.php/jnep/article/view/12155

18. Sousa LMM, Marques-Vieira CMA, Carvalho ML, Veludo F, José, HMG. Fidelidade e validade na construção e adequação de instrumentos de medida. Enformação [Internet]. 2015 [cited on 2019 Dec 24]; 5:25-32. Available from: http://www.acenfermeiros.pt/index.php?id1=15&id2=9

19. Sousa LM. As propriedades psicométricas dos instrumentos de hétero-avaliação. Enformação [Internet]. 2015 [cited on 2019 Dec 24]; 6:20-24. Available from: https://repositorio-cientifico.essatla.pt/bitstream/20.500.12253/998/1/enformacao_06_2015_20-24.pdf

20. Singh K, Jha, SD. Positive and negative affect, and grit as predictors of happiness and life satisfaction. J Indian Acad Appl Psychol [Internet]. 2008 [cited on 2019 Dec 24]; 34(2):40-5. Available from: http://medind.nic.in/jak/t08/s1/jakt08s1p40.pdf

Correspondence: lmms@uevora.pt