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RESEARCH ARTICLE (ORIGINAL)

Positioning Scale for Adaptation to Retirement: validity and reliability assessment

Escala de Posicionamento Face à Adaptação à Reforma: avaliação da validade e fiabilidade

Escala de posicionamiento ante la jubilación: evaluación de la validez y la fiabilidad

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Abstract

Background: Assessing individuals' positioning regarding their adaptation to retirement is a relevant indicator of health status in one of the most critical life transitions occurring in adulthood.
Objective: To validate the Positioning Scale for Adaptation to Retirement (EPFAR).
Methodology: Methodological study of scale validation carried out with a random sample of 115 Portuguese retirees. The quality of the instrument was assessed. An exploratory factor analysis assessed construct validity, and an internal consistency analysis assessed reliability.
Results: The retained factors resulted in a 4-factor solution that explained 56.41% of the variance. The internal consistency analysis was performed using Cronbach's alpha, and the results obtained for all items of the scale revealed an $\alpha = 0.90$.
Conclusion: The EPFAR is a valid and reliable instrument for assessing individuals' positioning towards retirement.

Keywords: scale; validation; retirement; evaluation; reliability

Resumo

Enquadramento: A avaliação do posicionamento face à adaptação à reforma constitui um relevante indicador do estado de saúde, numa das mais críticas transições da vida ocorridas na idade adulta.
Objetivo: Validar a Escala de Posicionamento Face à Adaptação à Reforma (EPFAR).
Metodologia: Estudo metodológico de validação de escala efetuado com amostra aleatória de 115 recém-aposentados portugueses. Avaliou-se a qualidade do instrumento de medida. Para avaliar a validade de constructo procedeu-se a uma análise fatorial exploratória e a fiabilidade avaliou-se através da consistência interna.
Resultados: Os fatores retidos levaram a considerar uma solução com 4 fatores explicativa na globalidade de 56,41% da variância. A análise de consistência interna realizou-se com recurso ao alfa de Cronbach, tendo os resultados apurados para a totalidade dos itens da escala apresentado um $\alpha = 0,90$.
Conclusão: A EPFAR constitui um instrumento válido e fiável para avaliar o posicionamento face à reforma.

Palavras-chave: escala; validação; reforma; avaliação; fiabilidade

Resumen

Marco contextual: La evaluación del posicionamiento ante la adaptación a la jubilación constituye un indicador relevante del estado de salud en una de las transiciones vitales más críticas de la edad adulta.
Objetivo: Validar la Escala de Posicionamiento de Adaptación a la Jubilación (EPFAR).
Metodología: Estudio metodológico de validación de la escala realizado con una muestra aleatoria de 115 portugueses recién jubilados. Se evaluó la calidad del instrumento de medida. Para evaluar la validez de constructo se realizó un análisis factorial exploratorio y se evaluó la fiabilidad mediante la consistencia interna.
Resultados: Los factores retenidos llevaron a considerar una solución con 4 factores que explicaba el 56,41% de la varianza. El análisis de consistencia interna se realizó mediante el alfa de Cronbach, y los resultados de todos los ítems de la escala mostraron un $\alpha = 0,90$.
Conclusión: La EPFAR constituye un instrumento válido y fiable para evaluar el posicionamiento ante la jubilación.

Palabras clave: escala; validación; reforma; evaluación; confiabilidad

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Introduction

The concept of retirement has changed and is currently characterized by the revolution of longevity. This revolution is defined by the increased length of time individuals spend working and the increased number of years they remain retired. The growing number of retirees impacts society and the economy, both locally and globally (Hermon & Lent, 2012).

Retirement is an interdisciplinary concept whose research has increased. One of the factors that has led to the growth in retirement research is the rapid aging of populations in most developed countries, resulting from low birth rates, increased longevity, and the arrival at the retirement age of the Baby Boom cohort (Shultz & Wang, 2011).

Although desired by many, adapting to retirement proves to be more difficult than many anticipate. The transition to retirement constitutes the final phase of what is commonly referred to as the working life. This transition is eagerly anticipated as it represents the end of the responsibilities and constraints associated with the working world (Loureiro et al., 2012). However, it also represents the loss of identity as a worker, which for many is the only identity they have of themselves (Mintzer & Taylor, 2012).

Individuals adapt to retirement depending on their working life path. The attitudes and behavioral patterns adopted during working life influence the adequate adaptation to retirement and the coping strategies used (Fonseca, 2014). Individuals' good adaptation to retirement requires the reorganization of their lives and modifying their self-perception. Different scales were developed in other countries for measuring individuals' adaptation to retirement. Despite their validity, these scales do not assess the adaptation dimensions identified by recent Portuguese retirees and are even less suitable to their sociocultural reality. This premise led to the construction of an instrument to assess this adaptation transition among middle-aged individuals within the scope of the REATIVA project (PTDC/MHC-PSC/4846/2012).

In the first phase, thematic analysis was used with focus groups (18 groups for a total of 146 participants) and couple interviews (n = 32 couples), conducted with Portuguese retirees, in this condition for less than five years (Loureiro, 2015).

From the thematic analysis mentioned above, seven dimensions emerged identified by the participants as important in this stage of their life cycle, namely: (a) Retiree status, (b) Mental health, (c) Support networks, (d) Health and aging, (e) Economic management, (f) Family and conjugality, and (g) Family and parenting. A list of items considered crucial to the experience of the phenomenon was constructed based on the dimensions and central concepts of the participants' narratives during the focus groups and interviews.

At a later stage, after being submitted to a meta-analysis process for content validation of the items, this version was submitted to a first panel of experts (n = 9) specialized in health, aging, health promotion, and family. This careful process resulted in a list of 28 items arranged in the Positioning Scale for Adaptation to Retirement (EPFAR), with four items per dimension to ensure the thematic representativeness of the phenomenon. The same panel of experts also agreed that the scale should have a Likert-type response format, from 1 (*strongly disagree*) to 4 points (*strongly agree*).

The present article aims to present the next evolution phase of this instrument, during which a study was conducted to assess the validity and reliability of the EPFAR considering a sample of recent Portuguese retirees.

Background

The increasing population aging observed in developed countries is one of the greatest challenges for current societies (World Health Organization, 2020). With the increase in longevity, individuals spend more years retired, with repercussions on health and socio-economic policies. The historical evolution of the work environment over the years in different societies has impacted how individuals experience their employment and how they experience their retirement. Improvements in working conditions, particularly after the second half of the twentieth century, have had a major impact on the relationship between individuals and their jobs (Fonseca, 2014).

The emergence of new work demands, closely linked with new technologies, and the rapid technological advances revolutionized many professions and greatly impacted the way workers relate to their profession. Many workers have been unable to cope with these new demands and may have rushed the decision to retire. Nevertheless, in recent years, with the shift to less physically demanding work, increasing longevity, and the unsustainability of the social security system, the retirement age has tended to increase (Loureiro et al., 2012).

Recent changes in the labor market mean that reaching the age limit for entering retirement might not be regarded as the main condition for retirement. Several factors may lead to early or late retirement, including the professional area, number of working years, health status, termination of employment contract, and personal factors and associated constraints. According to several authors (Loureiro, 2011; Fonseca, 2011; Souza et al., 2020), individuals' health status changes are among the most common reasons for anticipating the transition to retirement.

Several authors refer that, even in situations of illness or family constraints, the decision to remain in the labor market or to retire is essentially a personal one (Barnett et al., 2013; Rocha et al., 2020). Some studies indicate that workers with greater work responsibilities, higher academic qualifications, and whose jobs enjoy greater social status show greater willingness to stay in the labor market while those without these characteristics will retire earlier (Eichhorst, 201; Nuss & Schroeder, 2002). Furthermore, people who have a greater connection with their work and have better time management skills tend to show greater job satisfaction and consequently retire later (Loureiro, 2011).

Retirement is one of the major life transitions (Meleis, 2010) and involves health risks and opportunities. This interference may lead to changes and difficulties in adapting to this transition. Regardless of the reason behind the decision to retire and whether it is desired or not, this event interferes with individuals' lives.

It seems consensual that retirement is an occurrence that involves gains and losses regardless of the process individuals go through. The outcomes of the adaptation process will greatly depend on highly personal factors, such as the individuals' life history, health, lifestyle, occupational patterns of non-professional time, and relationships established with their surrounding contexts (social relationships, family, social integration, etc.; Fonseca, 2014). Thus, the moment of retirement and the transition and adaptation processes associated with it can be particularly susceptible to changes in the individuals' functioning, which can have consequences on their psychological and social well-being (Paúl & Fonseca, 2005).

Methodology

This is a methodological study developed to validate the EPFAR, an instrument to assess the positioning of Portuguese retirees regarding their adaptation to retirement. A pre-test of the scale was conducted with a sample of 12 individuals selected from users enrolled in Family-Health Units (USFs) belonging to the Regional Health Administration of the Center (ARSC) to analyze the clarity, appropriateness, and understanding of the language used, as well as to evaluate the average response time. This procedure resulted in small changes in the graphical presentation of the instrument to its respondents.

The retirees participating in the study (Table 1) had a mean age of 63.58 years, 57.4% were women, and 87.4% were married or living in a non-marital partnership. Just 13.9% of the participants attended higher education, and 30.4% only completed the first cycle of education (4th school year). Regarding the length of retirement, 42.6% of the participants had been retired for three to five years, and only 7.8% for less than one year.

Table 1

Absolute and percentage distributions of participants according to sociodemographic characteristics (n = 115)

	n	%
Age (years)		
45-55	2	1.80
55-65	88	76.50
65-75	25	21.70
Marital Status		
Married/Non-marital partnership	98	85.20
Divorced/Separated	7	6.10
Widowed	7	6.10
Educational level		
1-4th year	35	30.40
5-9th year	22	19.10
Without Higher Education	42	36.50
With Higher Education	16	13.90
Length of Retirement		
Less than 1 year	9	7.80
1-2 years	5	4.30
2-3 years	8	7.00
3-4 years	17	14.90
4-5 years	76	66.00

The EPFAR was applied to a sample of 115 participants enrolled in six Health-Centers Groups (ACES) that were part of the ARSC organizational model. The selection of primary health care units was randomized (simple) using the randorm.org website.

Family health nurses of the selected units were contacted to identify participants who met the inclusion criterion: being retired for less than five years. Age, gender, the reason for retirement, or the professional area from which they retired were not considered exclusion criteria. Individuals who did not have Portuguese nationality were excluded. Individuals who met the criterion were later invited to participate, and the sample was created with 78 individuals who volunteered to participate in the study.

A snowball sample was used to ensure a minimum dimension for psychometric validation studies (Cook & Beckman, 2006). Students from the School of Health of the University of Aveiro (ESSUA) were invited to collaborate. They distributed the instrument to people from their social network who met the inclusion criterion and were enrolled in previously selected health units. From these contacts, 37 individuals were added to the sample of 78, resulting in a total sample of 115 participants. The scale was applied between June 2017 and September 2019.

The instrument's processing and analysis were performed using the IBM SPSS Statistics software, version 24. Descriptive statistics were calculated for sample characterization, including absolute and percentage distributions. Construct validity was measured through an exploratory factor analysis (EFA) with factor extraction through a principal components analysis (PCA) followed by orthogonal Varimax rotation for factor interpretation. The following criteria were used to decide the number of factors to retain: eigenvalues ≥ 1.00 on the scree plot and the proportion of variance explained by each factor. Before performing the EFA, the Kaiser-Meyer-Olkin (KMO) measure was calculated, and Bartlett's test of sphericity was applied. The reliability analysis was performed through an internal consistency analysis, using Cronbach's alpha coefficient for the items of each factor that emerged from the analysis. The Pearson correlation coefficient and significance were also calculated.

The Ethics Committee of the Health Sciences Research Unit: Nursing (UICISA: E) approved this study (Process no. 248/12-2014). All participants signed informed consent forms before participating in the study. The consent involved the clear and unambiguous explanation of the nature and objectives of the study, the modality and length of participation, the risks and benefits, the voluntary nature, anonymity and confidentiality of study participation and data, the possibility of withdrawing from the study without any prejudice, and the access to the results.

Results

Construct validity

The EFA (Table 2) revealed a structure with four factors that explained 56.41% of the variance. The 1st factor grouped items 9, 21, 22, 23, 24, 27, and 28 and explained 18.06% of the total variance. This factor was named Satisfaction with Marital Relationship and Family. The 2nd factor consisted of items 1, 2, 3, 4, 5, 10, 12, 18, and 20 and explained 13.93% of the total variance. This factor was named Satisfaction with the New Status and Well-being. The 3rd factor included items 8, 11, 13, 14, 15, 17 and 19, and explained 12.35% of the total variance. This factor was designated as Resources and Self-care. The 4th factor grouped items 6, 7, 16, 25, and 26 and explained 12.07% of the total variance. This factor was designated as Sense of Achievement.

Table 2

Matrix of factor loadings of EFA with principal components and Varimax rotation (n = 115)

Items:	F1	F2	F3	F4
21. I am satisfied with my marital relationship.	0.848			
23. In my relationship, there is dialogue and sharing.	0.843			
22. When I decide with my partner, I achieve more and better.	0.841			
28. My grandchildren make me happy.	0.737			
9. I feel supported by my family.	0.671			
24. I am sexually satisfied.	0.666			
27. I feel that my grandchildren count on me.	0.639			
1. I feel comfortable with my retiree status.		0.712		
4. Being retired allows me to carry out projects.		0.709		
2. I can identify goals for my current life.		0.597		
12. I feel I have the necessary support when I need it.		0.549		
5. I feel in harmony with my current life.		0.531		
3. I can identify goals for my future life.		0.526		
20. I am afraid of growing old*.		0.496		
10. The resources in my community are sufficient.		0.439		
18. I feel fine.		0.409		
15. I can set priorities for the purchases I make.			0.686	
13. I make a monthly plan of my expenses.			0.616	
19. I take care of myself.			0.581	
17. I like myself the way I am.			0.575	
14. I know how to manage my money.			0.553	
8. I can manage everyday stress.			0.540	
11. I know how to have access to my community's resources.			0.428	
26. I feel that I can continue to be useful to my children.				0.734
6. I feel that I have more time for my activities.				0.696
7. I use my time in a productive way.				0.642
25. I feel that I can count on my children.				0.619
16. I know how to resist the pressure of consumer advertising.				0.504
Eigenvalues	5.06	3.90	3.46	3.38
% explained variance	18.06	13.93	12.35	12.07
% cumulative explained variance	18.06	31.99	44.33	56.41

Note. KMO = 0.74; *inverted item

Reliability analysis

The internal consistency analysis (Table 3) was performed using Cronbach's alpha coefficient. The result for all 28 items of the scale was excellent (α = 0.90), confirming that the scale constituted a reliable measure. The internal consistency analysis of the items per factor emerging from the factor analysis showed a range between 0.73 and 0.90. The scores in all factors attest to the reliability of the scale. The scores of the corrected correlation coefficients (removing the item from the factor) attested to the consistency of the items with the factors being considered adequate. It is also noteworthy that the lowest alpha score was in factor 4, consisting of only five items, and that this score was deemed adequate and acceptable (α = 0,73).

Table 3

Correlation matrix between item and factor (corrected item-total) and alpha if the item related to the internal consistency analysis is removed (n = 115)

Items:	$r^{(a)}$	$\alpha^{(b)}$
Factor 1 (Alpha) – 7 items (0.90)		
21. I am satisfied with my marital relationship.	0.85	0.87
23. In my relationship, there is dialogue and sharing.	0.79	0.88
22. When I decide with my partner, I achieve more and better.	0.84	0.87
28. My grandchildren make me happy.	0.68	0.89
9. I feel supported by my family.	0.58	0.90
24. I am sexually satisfied.	0.69	0.89
27. I feel that my grandchildren count on me.	0.55	0.90
Factor 2 (Alpha) – 9 items (0.80)		
1. I feel comfortable with my retiree status.	0.64	0.75
4. Being retired allows me to carry out projects.	0.59	0.75
2. I can identify goals for my current life.	0.56	0.76
12. I feel I have the necessary support when I need it.	0.57	0.76
5. I feel in harmony with my current life.	0.38	0.78
3. I can identify goals for my future life.	0.51	0.76
20. I am afraid of growing old.	0.31	0.80
10. The resources in my community are sufficient.	0.43	0.77
18. I feel fine.	0.37	0.78
Factor 3 (Alpha) – 7 items (0.79)		
15. I can set priorities for the purchases I make.	0.52	0.76
13. I make a monthly plan of my expenses.	0.54	0.76
19. I take care of myself.	0.57	0.75
17. I like myself the way I am.	0.44	0.77
14. I know how to manage my money.	0.56	0.75
8. I can manage everyday stress.	0.64	0.74
11. I know how to have access to my community's resources.	0.35	0.79
Factor 4 (Alpha) – 5 items (0.73)		
26. I feel that I can continue to be useful to my children.	0.63	0.63
6. I feel that I have more time for my activities.	0.48	0.69
7. I use my time in a productive way.	0.53	0.67
25. I feel that I can count on my children.	0.46	0.70
16. I know how to resist the pressure of consumer advertising.	0.38	0.73
Cronbach's alpha (total of 28 items = 0.90)		

Note. r = Pearson's correlation coefficient; α = Cronbach's alpha. [(a)] Correlation corrected item-total; [(b)] Alpha value if item is removed.

The bivariate Pearson correlation matrix (Table 4) was calculated among the factors emerging from the EFA, except for the correlation between the 1st Factor (Satisfaction with Marital Relationship and Family) and the 4th Factor (Sense of Achievement) in which the correlation obtained did not reveal statistical significance ($r = 0.178$; $p > 0.05$). All correlations found proved to be moderate and statistically significant ($p < 0.01$).

Table 4

Bivariate Pearson correlation matrix between the factors of the EPFAR (n = 115)

	F1	F2	F3	F4
Satisfaction with Marital Relationship and Family (F1)	---	0.376**	0.387**	0.178
Satisfaction with the New Status and Well-being (F2)	0.376**	---	0.543**	0.494**
Resources and Self-care (F3)	0.387**	0.543**	---	0.386**
Sense of Achievement (F4)	0.178	0.494**	0.386**	---

Note. EPFAR = (Positioning Scale for Adaptation to Retirement). ** $p < 0,01$ (two-tailed tests).

Table 5 presents the descriptive statistics of the global scores and scores by factor. The option to transform the scores from 0 to 100 facilitated the comparison between factors. The analysis revealed that the highest score was obtained in the 4th Factor (Sense of Achievement) with a mean = 77.60 (*SD* = 15.77), followed by the 3rd Factor (Resources and Self-care) with a mean of 70.97 (*SD* = 14.75), the 1st Factor (Satisfaction with the Marital Relationship and Family) with a mean = 67.14 (*SD* = 21.27) and the 2nd Factor (Satisfaction with the New Status and Well-being) with a mean = 65.85 (*SD* = 15.14). The mean score for the global score of the EPFAR was 69.27 (*SD* = 12.44). The relative dispersion measures (coefficient of variation) for the scale's factors and total revealed moderate dispersions (heterogeneous), which per se constituted good indicators for the instrument.

Table 5

Descriptive statistics of the global scores and scores by factor of the EPFAR

	Min.	Max.	Mean	*SD*	CV
Satisfaction with Marital Relationship and Family (F1)	14.29	100.00	67.14	21.71	0.32
Satisfaction with the New Status and Well-being (F2)	18.52	100.00	65.85	15.14	0.23
Resources and Self-care (F3)	33.33	100.00	70.97	14.75	0.21
Sense of Achievement (F4)	40.00	100.00	77.60	15.77	0.23
Global Score	44.05	100.00	69.27	12.44	0.18

Note. EPFAR = (Positioning Scale for Adaptation to Retirement); *SD* = Standard Deviation; CV = Coefficient of Variation.

Discussion

Although the transition to retirement has been the subject of worldwide research in the last decades, we considered that the existing instruments did not correspond to all the issues faced by the Portuguese population in this age group who are experiencing this transition.

The use of focus groups and interviews with couples within the REATIVA project allowed the collection of information from the target audience in their own words and informed the construction of the scale. The seven dimensions present in the participants' narratives guided the construction of the scale, as explained in the methodology. We also consider that using a panel of experts benefited the construction of the EPFAR because the consensus formed around the creation, maintenance, and possible modification of the items contributed to building a more reliable instrument reinforced with the experts' knowledge (McMillan et al., 2016).

Before validating the instrument, its suitability to the target audience was tested through its application on a smaller scale. The pre-test (Ghiglione & Matalon, 1995) was relevant because testing the instrument in a smaller sample of people with characteristics identical to the target population allowed final adjustments to ensure the instrument's success and subsequent administrations. The pre-test on a small sample allowed confirming if the language was adequate, if the scale had too many items, if it was too long, or if the questions were clear. Although the pre-test did not alter the scale, it allowed estimating the time needed to complete it.

Determining the quality criteria for this scale resulted from the objective of creating a valid and reliable instrument to measure individuals' adaptation to retirement. The final version was applied to 115 participants, followed by the assessment of psychometric characteristics.

Although there are no previous studies with instruments that assess this construct, the fact that the α scores found in the different dimensions of the EPFAR revealed good internal consistency ensured that the validated scale could be applied in the future, with the guarantee of consistent results.

The instrument also revealed adequate validity characteristics when assessed through factor analysis. The scale

was grouped into four factors related to the dimensions mentioned by recent Portuguese retirees.
The validation results showed good psychometric properties of the constructed instrument. Both the results of factor analysis and reliability analysis attested that the scale is valid and reliable. Like other instrument validation studies, which show how the factors were analyzed, this study helps future EPFAR users know how it should be applied in research or clinical practice (Souza et al., 2017).
The use of the snowball technique conditioned the randomized nature of the present study, a limitation that can be overcome in future studies.

Conclusion

The transition to retirement has been the subject of research of several disciplines of knowledge in the last decades. However, the existing instruments to assess the adaptation to this transition did not correspond to the dimensions mentioned by the age groups of the Portuguese population experiencing this transition. This was when the need to develop the EPFAR was identified.
Validation with the Portuguese population was carried out to test the construct assessed by this instrument.
Given the results described, we conclude that the EPFAR proves to be a valid instrument (showing construct validity) and reliable (with adequate reliability indicators) that can be used as a measure to assess the adaptation to the retirement transition. The results fit the rational derivation implicit in the scale and the results obtained by factor analysis. Therefore, the instrument can assist health professionals in defining intervention and health promotion strategies among recent Portuguese retirees.
Given its nature and length, the EPFAR has the advantage of being easy and quick to administer. The main objective of this study - to validate a scale that allows assessing the adaptation to retirement - was achieved by determining the validity and reliability of the instrument.
By validating the EPFAR, we contributed to clinical and scientific practice because this scale is an innovative instrument in Portugal that assesses the adaptation of recent Portuguese retirees and allows health professionals to understand in which stage of adaptation they are, thus facilitating their intervention.
We recommend applying the scale more broadly to increase its robustness and to national samples to generalize the results. Further research with this instrument may expand the dimensions under study, thus seeking to respond to recent Portuguese retirees' continuous needs.

Author contributions

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