











Spanish version of the Maastricht Personal Autonomy Questionnaire: A validation study among community-dwelling older adults with chronic multimorbidity

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Abstract

Background: Loss of personal autonomy in older adults with chronic multimorbidity is associated with worsened biopsychosocial health. In order to facilitate the standardised assessment of personal autonomy in older adults with chronic conditions, nurses could use the Maastricht Personal Autonomy Questionnaire (MPAQ).

Objective: To translate, culturally adapt and psychometrically assess the Spanish version of the MPAQ in community-dwelling older adults with chronic multimorbidity (MPAQ-Sp).

Methods: Observational cross-sectional study. A convenience sample of 884 community-dwelling older adults was recruited from 10 community centres in five health districts in southeastern Spain. Data were collected between January 2021 and September 2022. The study was completed in four phases. Phase 1: The MPAQ was translated into Spanish. Phase 2: A pilot test of reliability and content validity was conducted. Phase 3: To test the dimensionality of the tool, an exploratory factor analysis (EFA) was conducted. Phase 4: a final validation study was conducted which included a confirmatory factor analysis (CFA) and assessed the validity (content, criterion and construct), reliability and readability of the MPAQ-Sp.

Results: The average age of the sample was 75.89 years ($SD = \pm 8.04$). Their mean number of chronic conditions was 4.84 ($SD = \pm 2.19$) and 67% were women. The MPAQ-Sp is comprised of 16 items distributed in four subscales: [1] the 'Degree of autonomy' scale, [2] the 'Working on autonomy' scale, [3] the 'Dilemmas: health over preferences' scale and [4] the 'Dilemmas: preferences over health' scale.

Conclusions: The Spanish version of the MPAQ-Sp is a valid and reliable instrument to assess personal autonomy in Spanish-speaking, community-dwelling older adults with chronic multimorbidity.

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Implications for Practice: The use of the MPAQ-Sp would allow researchers and healthcare professionals to identify a loss of personal autonomy among Spanish-speaking community-dwelling older adults with chronic multimorbidity.

KEYWORDS

autonomy, chronic illness, elderly, multimorbidity, psychometrics, validity

1 | INTRODUCTION

Up to 90% of the world's older adults have at least one chronic condition and more than 50% suffer from chronic multimorbidity (two or more chronic conditions) (Nguyen et al., 2019; Souza et al., 2021). Chronic conditions (diseases of long duration and slow progression) are estimated to cause 70% of deaths globally (World Health Organization (WHO), 2022) and their prevalence is expected to increase as a consequence of population ageing (World Health Organization (WHO), 2022; Zhang et al., 2021). Multimorbidity is associated with biopsychosocial deterioration in older adults (Bao et al., 2019) and it negatively affects their personal autonomy (Bimou et al., 2021; Sánchez-García et al., 2019). Personal autonomy can be defined as the right of people to make decisions and govern themselves (Moilanen et al., 2021) or as the correspondence between how people want their lives to be and how they actually are (Mars et al., 2008). Personal autonomy is fundamental for older adults with multimorbidity (Killackey et al., 2020). Hence, nurses must be able to maintain and promote personal autonomy in this population (Hedman et al., 2019; Lindsey Jacobs et al., 2019).

Loss of personal autonomy in older adults with chronic conditions is associated with increased likelihood of physical disability and frailty (Nicholson et al., 2021; Pivetta et al., 2020), increased pain (Ma et al., 2021), poorer quality of life (Bao et al., 2019; Sánchez-García et al., 2019), higher rates of hospital admissions (Masnoon et al., 2020) and increased risk of mortality (Zheng et al., 2021). Furthermore, loss of personal autonomy is associated with depression (Ma et al., 2021), sleep disturbances (Vanfleteren et al., 2020) or suicidal ideation (Oh et al., 2020). Impaired personal autonomy is also associated with higher rates of poverty (Sapkota et al., 2021), loneliness and social isolation (Nicholson et al., 2021). Nurses therefore need to be able to detect loss of autonomy in older adults early on to avoid further associated problems (Bimou et al., 2021). However, nurses have difficulties in assessing patients' personal autonomy (lack of time, training, etc.) and it is often not part of their assessments (Kuipers et al., 2020; Lindsey Jacobs et al., 2019).

According to the theory of actual autonomy (Agich, 1993) and the theory of relational autonomy (Mackenzie & Stoljar, 2000), personal autonomy is seen as an ongoing process of constantly adapting to new circumstances, adjusting one's intentions and desires to the opportunities and constraints encountered in interacting with the world (Agich, 1993). This process starts from the conscious reflection of the individual, which takes place in a social context in which

What does this research add to existing knowledge in gerontology?

- This research confirms that the MPAQ-Sp is a valid and reliable instrument for measuring personal autonomy among Spanish-speaking, community-dwelling older adults with chronic multimorbidity.
- Validation of the MPAQ-Sp in the growing population of Spanish-speaking, community-dwelling older adults with chronic multimorbidity is an essential contribution to the assessment of their autonomy.

What are the implications of this new knowledge for nursing care with older adults?

- Personal autonomy among community-dwelling Spanish older adults with chronic multimorbidity is often related to greater independence and better health; this version of the MPAQ-Sp allows to measure it and to understand its evolution.
- The use of this tool could have a real impact on the care of community-dwelling Spanish older adults with chronic multimorbidity, as it would allow for early identification of this population's loss of personal autonomy.

How could the findings be used to influence policy or practice or research or education?

- Our results contribute to the validity and reliability of the MPAQ-Sp for assessing personal autonomy in a wider range of populations.
- The results of this validation study allow researchers and healthcare professionals to use the MPAQ-Sp to measure personal autonomy among Spanish-speaking, community-dwelling older adults with chronic multimorbidity.

people depend on each other. Only through this social interaction and communication can personal autonomy take shape (Mackenzie & Stoljar, 2000). In the context of chronic conditions, personal autonomy can be conceptualised as a correlation between how patients want their lives to be and how they actually are (Mars et al., 2008).

Therefore, this correlation is different and unique to each patient, hence the importance for nurses to be able to assess personal autonomy in older adults with chronic conditions.

In order to facilitate the standardised assessment of personal autonomy in older adults with chronic conditions, nurses could use the Maastricht Personal Autonomy Questionnaire (MPAQ) (Mars et al., 2014). The MPAQ comprises 16 items divided into 3 dimensions: degree of autonomy (5 items measuring the correlation between how people want their lives to be and how they actually are), working on autonomy (5 items measuring the ongoing challenge people experience in working on their autonomy in their daily activities and social relationships) and dilemmas (6 items measuring the frequency with which people encounter dilemmas about whether to make decisions based on what is best for their health or based on their personal preferences). However, the MPAQ has not been validated in Spanish-speaking older adults with multimorbidity. The aim of this study was to translate, culturally adapt and psychometrically assess the Spanish version of the MPAQ in community-dwelling older adults with chronic multimorbidity.

2 | METHODS

2.1 | Design and location of the study

An observational cross-sectional study was conducted in four phases. In the first phase, we translated the MPAQ into Spanish. In the second phase, we conducted a pilot study to test the reliability (internal consistency) and content validity of the tool. In the third phase, we conducted an exploratory factor analysis to test the dimensionality of the tool. In the fourth phase, we conducted a final validation study in which we assessed the validity, reliability and readability of the Spanish version of the MPAQ (hereafter, MPAQ-Sp). The study was conducted in five health districts in southeastern Spain.

2.2 | Participants and sample

Using a convenience sampling method, we recruited a total sample of 884 community-dwelling older adults to participate in the study. The sample size was decided according to expert recommendations to recruit around 50 participants for a pilot study, 10 participants per instrument item for the exploratory factor analysis (with a minimum of 250) and 20 participants per instrument item for the final validation study including a confirmatory factor analysis (with a minimum of 400) (Coaley, 2014; Norman & Streiner, 2014; Streiner & Kottner, 2014). Participants from the pilot study ($n=58$) were not included in the exploratory factor analysis ($n=250$), nor in the final validation study ($n=576$). All participants met the following inclusion criteria: (1) aged 65 years or older, (2) diagnosed with 2 or more chronic conditions, (3) living at home and (4) no cognitive impairment that would prevent them from understanding and completing the survey.

2.3 | Ethical considerations

The study was approved by the Nursing, Physiotherapy and Medicine Department's Ethics Committee (EFM-89/2020). All participants received information about the study and their right to withdraw at any time. We treated all data in accordance with European data protection legislation to protect the anonymity and confidentiality of the participants. All participants signed an informed consent form before participating in the study.

2.4 | Data collection

Data were collected in 10 community centres in five health districts in southeastern Spain between January 2021 and September 2022. Two members of the research team administered the data collection questionnaire to older adults who attended the community centres and volunteered to participate. The data collection questionnaire consisted of three sections. The first section aimed to collect socio-demographic information about the participants. The second section was used to introduce the MPAQ-Sp. The third section included the Barthel Index (Mahoney & Barthel, 1965) for the subsequent criterion validity analysis.

2.4.1 | Phase 1: Translation of the MPAQ into Spanish

Before starting the study, permission was obtained from the authors of the original version of the MPAQ. The original English version of the MPAQ was translated into Spanish following a forward and backward translation procedure (Epstein et al., 2015). Two independent bilingual translators (native Spanish and proficient in English) separately translated the English version into Spanish. Minor differences between the two translators' versions were reconciled and they reached a consensus to produce the Spanish version of the MPAQ. An independent bilingual translator (native English, competent in Spanish) then performed a blind back-translation of the Spanish version into English. The translations and back-translations were reviewed by the researchers and two independent bilingual academics, who agreed that the MPAQ-Sp respected the meanings of the original tool.

2.4.2 | Phase 2: Pilot study of the MPAQ-Sp

In the second phase, we conducted a pilot study to test the reliability (i.e. internal consistency) and content validity of the MPAQ-Sp. We also tested the test-retest reliability of the scales by administering the MPAQ-Sp to the pilot sample ($n=58$) twice, with a 6-week interval between measurements (Streiner et al., 2015). We analysed the test-retest reliability of the scales comprising the MPAQ-Sp by calculating the intraclass correlation coefficient (ICC).

Content validity

First, we submitted the MPAQ-Sp to a panel of 15 independent experts from 5 different institutions for critical review. The experts met the following criteria: (1) being a qualified registered nurse, (2) having more than 10 years of experience in caring for older adults with chronic multimorbidity and (3) having worked in intervention programmes to improve personal autonomy among community-dwelling older adults with chronic multimorbidity. The experts were asked to rate each item as “not relevant”, “somewhat relevant”, “quite relevant” or “very relevant” to assess personal autonomy in older adults with chronic multimorbidity in our context (Polit & Beck, 2020). Following Polit and Beck's (2020) method, we calculated the item content validity index (i-CVI) by adding the number of experts who rated each item as somewhat or very relevant and dividing it by 15 (number of experts who participated). The benchmark for the i-CVI to be considered acceptable was set at 0.78 (Polit & Beck, 2020).

Reliability

We conducted a pilot test of the reliability of the scales comprising MPAQ-Sp by assessing their internal consistency. We examined the internal consistency of the three scales by calculating their Cronbach's alpha (α), the corrected item-total correlation for each item (C-ITC) and the α of the scales if one item had been removed. We considered the scales comprising the MPAQ-Sp to have acceptable internal consistency if their $\alpha > 0.7$. Items were also considered to contribute to the internal consistency of the tools if their C-ITC > 0.3 and the α of the scales did not increase significantly after removal.

2.4.3 | Phase 3: Dimensionality test through exploratory factor analysis

To test the dimensionality of the MPAQ-Sp, the questionnaire was administered to a sample of 250 participants, and an exploratory factor analysis (EFA) with principal axis factoring and Varimax rotation was performed. First, we tested the appropriateness of conducting an EFA on the database by calculating the Kaiser-Meyer-Olkin test (KMO) and Bartlett's test of sphericity (BTS). It was considered appropriate to perform an EFA if the KMO ≥ 0.70 and the BTS was significant ($p < .05$) (Coaley, 2014; Polit & Beck, 2020; Tabachnick & Fidell, 2018). For the extracted factors to be considered latent dimensions of the scales comprising the MPAQ-Sp, they had to have an eigenvalue ≥ 1 ; for items to be considered as contributing to a factor, they had to have a factor loading value ≥ 0.40 on a single factor (Coaley, 2014; Tabachnick & Fidell, 2018).

2.4.4 | Phase 4: Final validation study

In the final phase of the study, we administered the MPAQ-Sp to 576 participants and tested its validity, reliability and readability

(Polit & Beck, 2020; Streiner & Kottner, 2014). All data were analysed with IBM® SPSS Statistics® 26 y SPSS AMOS® 24.

Validity

The validity of the MPAQ-Sp was tested in terms of content, criterion and construct validity.

Content validity. The content validity of the MPAQ-Sp was examined using the same approach as described in the pilot study section. In addition, we calculated the average total content validity index (t-CVI) for the scales comprising the MPAQ-Sp, which was considered acceptable if t-CVI ≥ 0.78 (Polit & Beck, 2020).

Criterion validity. Previous research has shown that perceived autonomy is linked to having limitations to carrying out activities of daily life (Sánchez-García et al., 2019). Consequently, to test the criterion validity of the MPAQ-Sp, we decided to compare participants' scores on the MPAQ-Sp with their scores on the Barthel Index (Mahoney & Barthel, 1965). Participants' scores on the MPAQ-Sp were correlated with their scores on the Barthel index by calculating the Pearson's correlation coefficient (r).

Construct validity. The construct validity of the MPAQ-Sp was tested by performing a confirmatory factor analysis (CFA) in order to check that the data fit the model that was proposed after conducting the EFA. After testing for normality, the data were considered to have a normal distribution if the variables' skewness was ± 2 and the kurtosis was ± 7 (Byrne, 2016). Therefore, we chose the maximum likelihood method for parameter estimation (Brown, 2015). The comparative fit index (CFI) and the Tucker-Lewis index (TLI) were used to examine the fit of the models, with values ≥ 0.90 or ≥ 0.95 indicating adequate or excellent fit, respectively (Hooper et al., 2008). We also used the root mean square error of approximation (RMSEA), where values ≤ 0.08 or ≤ 0.05 indicate an acceptable or excellent model fit, respectively (Hooper et al., 2008).

Reliability

The reliability of the MPAQ-Sp was tested by examining its internal consistency using the same approach as described in the pilot study section.

Readability

The readability of the MPAQ-Sp was examined with the INFLESZ scale (Barrio-Cantalejo et al., 2008). This scale assigns a score from 0 to 100 to a text and it allows its categorisation according to its reading difficulty and comprehensibility: very difficult (< 40), fairly difficult (40–55), average (55–65), fairly easy (65–80) and very easy (> 80).

3 | RESULTS

3.1 | Characteristics of the participants

The socio-demographic characteristics of the total sample and the sub-samples are presented in Table 1.

TABLE 1 Sociodemographic characteristics of the study sample and subsamples.

Characteristics	Pilot study sample (n = 58)	Dimensionality and EFA study sample (n = 250)	Final validation study sample (n = 576)	Total sample (N = 884)
	M ± SD	M ± SD	M ± SD	M ± SD
	n (%)	n (%)	n (%)	n (%)
Age	77.14 ± 7.71	76.12 ± 7.97	75.67 ± 8.09	75.89 ± 8.04
Gender				
Woman	41 (70.7)	170 (68.0)	381 (66.1)	592 (67.0)
Man	17 (29.3)	80 (32.0)	195 (33.9)	292 (33.0)
Marital status				
Single	1 (1.7)	6 (2.4)	13 (2.3)	20 (2.3)
Married	32 (55.2)	135 (54.0)	324 (56.3)	491 (55.5)
Divorced	0 (0)	8 (3.2)	15 (2.6)	23 (2.6)
Widowed	25 (43.1)	101 (40.4)	224 (38.8)	350 (39.6)
Lives alone				
Yes	16 (27.6)	75 (30.0)	166 (28.8)	257 (29.1)
No	42 (72.4)	175 (70.0)	410 (71.2)	627 (70.9)
Education level				
None completed	21 (36.2)	83 (33.2)	192 (33.3)	296 (33.5)
Primary	27 (46.6)	102 (40.8)	232 (40.3)	361 (40.8)
Secondary	3 (5.2)	19 (7.6)	45 (7.8)	67 (7.6)
Vocational training	4 (6.9)	22 (8.8)	51 (8.9)	77 (8.7)
University	3 (5.2)	24 (9.6)	56 (9.7)	83 (9.4)
Number of chronic conditions	6.24 ± 3.85	4.87 ± 2.01	4.69 ± 1.98	4.84 ± 2.19
Number of medicines prescribed	7.33 ± 3.44	5.92 ± 3.76	5.46 ± 3.65	5.72 ± 3.69

Abbreviations: EFA, exploratory factor analysis; M, mean; SD, standard deviation.

3.2 | Results of the pilot study

Table 2 summarises the results of the pilot study. The experts considered all items to be relevant for assessing personal autonomy in community-dwelling older adults with chronic multimorbidity (ICVi > 0.78). Therefore, the 16-item MPAQ-Sp was tested among the pilot sample. Cronbach's alpha (α) was above 0.7 for all three scales (Table 2). After checking that the C-ITC was not lower than 0.3 for any of the items and that the α of their total scale would not have increased marginally if we had removed these items, they were all kept as part of the MPAQ for the next stage of the process. The test-retest reliability analysis ($n = 58$) showed that while the scales "Degree of autonomy" (average measures ICC = 0.763; 95% CI = 0.600–0.860; $F_{(57,57)} = 4.23$; $p < .001$) and "Working on autonomy" (average measures ICC = 0.780; 95% CI = 0.628–0.870; $F_{(57,57)} = 4.54$, $p < .001$) were highly stable, the scale "Dilemmas" (average measures ICC = 0.541; 95% CI = 0.224–0.728; $F_{(57,57)} = 2.18$, $p = .002$) only yielded a moderate temporal stability result.

3.3 | Results of the dimensionality study

The KMO test and Bartlett's test of sphericity showed that a factor analysis on the database ($n = 250$) was adequate (KMO = 0.859;

$\chi^2 = 1984.989$; $df = 120$; $p < .001$). The EFA results showed that the MPAQ-Sp items were distributed into four factors and that these explained 68.19% of the total variance found. The dimensional structure of the MPAQ-Sp is summarised in Table 3. Thus, the six-item "Dilemmas" scale of the original version (Mars et al., 2014) was divided into two scales of three items each: "Dilemmas: health over preferences" (where people say how often they face the dilemma of doing what is good for their health, even if it is not their personal preference), and "Dilemmas: preferences over health" (where patients report how often they face dilemmas of doing what they prefer, even if they know it is not ideal for their health).

3.4 | Final results of the validation study

3.4.1 | Validity

Content validity

The i-CVI for all items comprising the MPAQ-Sp is presented in Table 4. The t-CVI for the 'Degree of Autonomy' scale was 0.90. The t-CVI for the "Working on Autonomy" scale was 0.89. The t-CVI for the scale "Dilemmas: health over preferences" was 0.89. The t-CVI for the scale "Dilemmas: preferences over health" was 0.79.

TABLE 2 Reliability and content validity of the pilot version of the MPAQ-Sp ($n=58$).

	i-CVI ^a	Cronbach's α if item deleted	C-ITC ^b	Scale's Cronbach's α
"Degree of Autonomy" scale				
Item 1. My life now is how I want it to be.	1	0.932	0.753	0.934
Item 2. The life I lead now suits the person I am.	1	0.923	0.804	
Item 3. Considering the possibilities I have now, my life is as I want it to be.	0.93	0.918	0.832	
Item 4. I am comfortable with the way I lead my life now.	0.93	0.905	0.896	
Item 5. My life now is arranged the way I want it to be.	1	0.916	0.841	
"Working on Autonomy" scale				
Item 1. I try to find things that I like doing and am able to do in my present state of health.	1	0.907	0.759	0.917
Item 2. I try to find a way of doing the things I enjoy within the limitations of my present state of health.	0.93	0.887	0.840	
Item 3. I try to arrange my life in the way that suits me best (maybe with help from other people).	0.93	0.892	0.817	
Item 4. I try to create conditions that fit in with what I want.	0.86	0.887	0.843	
Item 5. I try to adapt my wishes to my capabilities.	1	0.916	0.695	
"Dilemmas" scale				
Item 1. How often do you have to choose between what you like doing and what is best for your health?	0.86	0.724	0.402	0.740
Item 2. How often do you decide not to do something that you really want to do due to your health condition?	0.93	0.697	0.498	
Item 3. How often do you do something because it is good for your health, even though you do not really enjoy it?	0.79	0.742	0.338	
Item 4. How often do you do something that you like doing, even though the doctor has advised against it?	0.93	0.687	0.532	
Item 5. How often do you find it difficult to decide between doing something you like and doing what is best for your health?	0.93	0.661	0.611	
Item 6. How often do you do something that you enjoy, even though you know that it could be bad for your health?	0.86	0.701	0.490	

Abbreviation: MPAQ-Sp, Spanish version of the Maastricht Personal Autonomy Questionnaire.

^aItem Content Validity Index.

^bCorrected item-total correlation.

Criterion validity

Our criterion validity analysis ($n=576$) showed that the participants' scores on the "Degree of autonomy" and "Working on autonomy" scales moderately and positively correlated to their scores on the Barthel Index ($r=.469, p<.001$; $r=.533, p<.001$). The "Dilemmas: health over preference" scale was moderately and inversely correlated to the Barthel Index ($r=-.398, p=.003$). At last, the "Dilemmas: preferences over health" scale showed low, negative correlation with the Barthel Index ($r=-.185, p<.031$).

Construct validity

The results from the normality assessment suggested that there was not significant deviation from normality for any of the variables included in the analysis, so we decided to use the maximum likelihood method for parameters estimates (see skewness and kurtosis results in Table 5). Following the results of our EFA, we specified a four-factor confirmatory model including the 16 items of the MPAQ-Sp. The goodness-of-fit indices of this model were good: $\chi^2(98, N=576)=421.831, p<.001$,

CFI=0.926, TLI=0.910, RMSEA=0.076 (90% CI=0.068–0.083).

Figure 1 shows the final model's latent dimensions of the MPAQ-Sp with their factorial loads. The MPAQ-Sp was comprised of 16 items divided in four scales: [1] the "Degree of autonomy" scale (5 items measuring the extent to which people live an autonomous life), [2] the "Working on autonomy" scale (5 items measuring the effort people make to be autonomous), [3] the "Dilemmas: health over preferences" scale (3 items measuring how often people face dilemmas with which they choose to do what is good for their health, even if it is not their personal preference) and [4] the "Dilemmas: preferences over health" scale (3 items measuring how often people face dilemmas to decide whether to do what they prefer over what it is good for their health).

3.4.2 | Reliability

Table 4 summarises the main reliability results ($n=576$) in relation to the internal consistency of the tools that comprise the MPAQ-Sp.

TABLE 3 Summary of the EFA results for the dimensionality study of the MPAQ-Sp ($n=250$).

Items	Factor			
	1	2	3	4
"Degree of Autonomy"				
Item 1. My life now is how (...)	0.739	0.271	-0.058	-0.063
Item 2. The life I lead now (...)	0.779	0.246	-0.078	0.000
Item 3. Considering the possibilities (...)	0.811	0.339	-0.052	-0.025
Item 4. I am comfortable (...)	0.806	0.177	-0.101	-0.127
Item 5. My life now is arranged (...)	0.746	0.286	-0.038	-0.040
"Working on Autonomy"				
Item 1. I try to find things (...)	0.227	0.659	0.040	0.013
Item 2. I try to find a way (...)	0.174	0.805	0.019	0.003
Item 3. I try to arrange my life (...)	0.258	0.789	-0.103	0.007
Item 4. I try to create conditions (...)	0.301	0.753	-0.047	-0.011
Item 5. I try to adapt my wishes (...)	0.278	0.744	-0.033	-0.031
"Dilemmas: health over preferences"				
Item 1. How often do you choose between what you like (...)	-0.112	0.016	0.105	0.576
Item 2. How often do you decide not to do something (...)	-0.100	-0.172	0.024	0.742
Item 3. How often do you do something because it is good (...)	0.067	0.094	0.108	0.455
"Dilemmas: preferences over health"				
Item 1. How often do you do something (...) the doctor has advised against (...)	-0.051	0.008	0.699	0.124
Item 2. How often do you find it difficult to decide (...)	-0.090	-0.013	0.462	0.341
Item 3. How often do you do something that you enjoy (...)	-0.073	-0.066	0.772	0.031
Eigenvalue	5.72	2.23	1.59	1.37
% of variance	35.721	13.958	9.962	8.553
% of accumulated variance	59.640	49.679	59.640	68.194

Note: Bold values are meant to facilitate the reading of the table, since they mean that those items load onto the factor in that column.

Abbreviations: EFA, exploratory factor analysis; MPAQ-Sp, Spanish version of the Maastricht Personal Autonomy Questionnaire.

Cronbach's alpha (α) was above 0.7 for all four scales. None of the items' C-ITC was lower than 0.3 and the α of its total scale would not have significantly increased if we had removed these items.

3.4.3 | Readability

The INFLESZ score for the MPAQ-Sp was 87.72 points, which means that the questionnaire is very easy to read, understand and complete (average estimated time to complete was 3.4 min).

4 | DISCUSSION

In this paper, we aimed to translate, culturally adapt and psychometrically assess the Spanish version of the MPAQ (Mars et al., 2014)

in community-dwelling older adults with chronic multimorbidity. To explore the suitability of the MPAQ-Sp for measuring the degree of personal autonomy in community-dwelling older adults with chronic multimorbidity, its readability, reliability, content, criterion and construct validity were tested in four phases. In the first phase, a pilot study was conducted to explore the internal consistency and content validity of the MPAQ-Sp. A test-retest of reliability was also conducted, showing that the 'Degree of Autonomy' and 'Working on Autonomy' scales were temporarily stable, while the 'Dilemmas' scale showed relatively low stability. The pilot sample had a higher proportion of women and widows than the other samples. Its mean age was higher than the mean of the overall sample, with a higher number of chronic conditions and number of medications. Also, the pilot sample had the highest proportion of older adults with no education or only primary education. These factors are related to different outcomes in personal autonomy (Wan et al., 2023), which

TABLE 4 Reliability and content validity of the final version of the MPAQ-Sp ($n = 576$).

	i-CVI ^a	Cronbach's α if item deleted	C-ITC ^b	Scale's Cronbach's α
"Degree of Autonomy" scale				
Item 1. My life now is how (...)	1	0.889	0.735	0.904
Item 2. The life I lead now (...)	1	0.884	0.753	
Item 3. Considering the possibilities (...)	0.93	0.876	0.793	
Item 4. I am comfortable (...)	0.93	0.881	0.772	
Item 5. My life now is arranged (...)	1	0.885	0.748	
"Working on Autonomy" scale				
Item 1. I try to find things (...)	1	0.888	0.667	0.892
Item 2. I try to find a way (...)	0.93	0.859	0.778	
Item 3. I try to arrange my life (...)	0.93	0.862	0.767	
Item 4. I try to create conditions (...)	0.86	0.867	0.743	
Item 5. I try to adapt my wishes (...)	1	0.867	0.746	
"Dilemmas: health over preferences" scale				
Item 1. How often do you choose between what you like (...)	0.86	0.684	0.558	0.723
Item 2. How often do you decide not to do something (...)	0.93	0.666	0.614	
Item 3. How often do you do something because it is good (...)	0.79	0.704	0.432	
"Dilemmas: preferences over health" scale				
Item 1. How often do you do something (...) the doctor has advised against (...)	0.93	0.681	0.653	0.796
Item 2. How often do you find it difficult to decide (...)	0.93	0.755	0.527	
Item 3. How often do you do something that you enjoy (...)	0.86	0.672	0.663	

Abbreviation: MPAQ-Sp, Spanish version of the Maastricht Personal Autonomy Questionnaire.

^aItem Content Validity Index.

^bCorrected item-total correlation.

could have influenced the results of our pilot study. However, the original structure and content of the MPAQ was not changed after the pilot study.

In the next phase, an EFA was conducted to explore the dimensionality of the MPAQ-Sp. We found that the MPAQ-Sp did not have the same dimensional structure as the original MPAQ (Mars et al., 2014). The "Dilemmas" scale of the original study included 6 items and in the MPAQ-Sp it was divided into two scales of three items each. One scale was called 'Dilemmas: health over preferences' as it reflects how often older adults face dilemmas with which they choose to do what is good for their health, even if it is not their personal preference. The other scale was called "Dilemmas: preferences over health", which addresses how often older adults face dilemmas to decide whether to do what they prefer over what it is good for their health. The fact that this dimensional redistribution occurred at this stage, but with no loss of items, indicates that our study achieved a much more specific organisation of content. The EFA sample had the most people living alone, single and divorced, and the fewest married people. All of these factors have been found

to influence how health dilemmas and decisions are experienced (Li et al., 2021; Morsch et al., 2017).

The final stage of our study focused on analysing the content, criterion and construct validity of the 16-item MPAQ-Sp version ($n = 576$), as well as its reliability and readability. The content validity of the scales was considered excellent by the expert panel. This suggests that the 16 items included in the final version of the MPAQ-Sp contribute to operationalising the personal autonomy of community-dwelling older adults with chronic multimorbidity as a measurable construct (Polit & Beck, 2020; Tabachnick & Fidell, 2018). The Barthel Index (Mahoney & Barthel, 1965) was chosen for the criterion validity analysis. The results of the criterion validity analysis showed that the participants' scores on the "Degree of Autonomy" and "Working on Autonomy" scales correlated positively and moderately with their scores on the Barthel Index. This is consistent with the idea that previous research has shown that perceived autonomy is linked to having limitations in carrying out activities of daily life (Sánchez-García et al., 2019), and that loss of personal autonomy in older adults with chronic conditions is associated with

TABLE 5 Descriptive statistics for the items and total scales comprising the MPAQ-Sp (n = 576).

Items/scale	Mean	SD	Skewness	Kurtosis
Item 1. My life now is how (...)	3.53	1.30	-0.49	-0.86
Item 2. The life I lead now (...)	3.92	1.24	-1.16	0.30
Item 3. Considering the possibilities (...)	3.84	1.27	-0.85	-0.33
Item 4. I am comfortable (...)	3.95	1.25	-0.99	0.11
Item 5. My life now is arranged (...)	3.84	1.29	-0.81	-0.50
“Degree of Autonomy” scale	3.83	1.08	-0.81	-0.14
Item 1. I try to find things (...)	4.07	1.33	-1.20	0.06
Item 2. I try to find a way (...)	4.21	1.17	-1.33	0.60
Item 3. I try to arrange my life (...)	4.17	1.12	-1.40	0.98
Item 4. I try to create conditions (...)	4.20	1.13	-1.32	0.76
Item 5. I try to adapt my wishes (...)	4.22	1.06	-1.45	1.10
“Working on autonomy” scale	4.21	0.97	-1.26	0.87
Item 1. How often do you choose between what you like (...)	3.03	1.26	-0.06	-0.89
Item 2. How often do you decide not to do something (...)	3.04	1.28	-0.12	-1.01
Item 3. How often do you do something because it is good (...)	3.44	1.23	-0.41	-0.74
“Dilemmas: health over preferences” scale	3.17	0.94	-0.22	-0.26
Item 1. How often do you do something (...) the doctor has advised against (...)	2.12	1.18	0.79	-0.33
Item 2. How often do you find it difficult to decide (...)	2.50	1.25	0.36	-0.89
Item 3. How often do you do something that you enjoy (...)	2.08	1.14	0.72	-0.48
“Dilemmas: preferences over health” scale	2.23	0.94	-0.45	-0.59

Abbreviations: MPAQ-Sp, Spanish version of the Maastricht Personal Autonomy Questionnaire; SD, standard deviation.

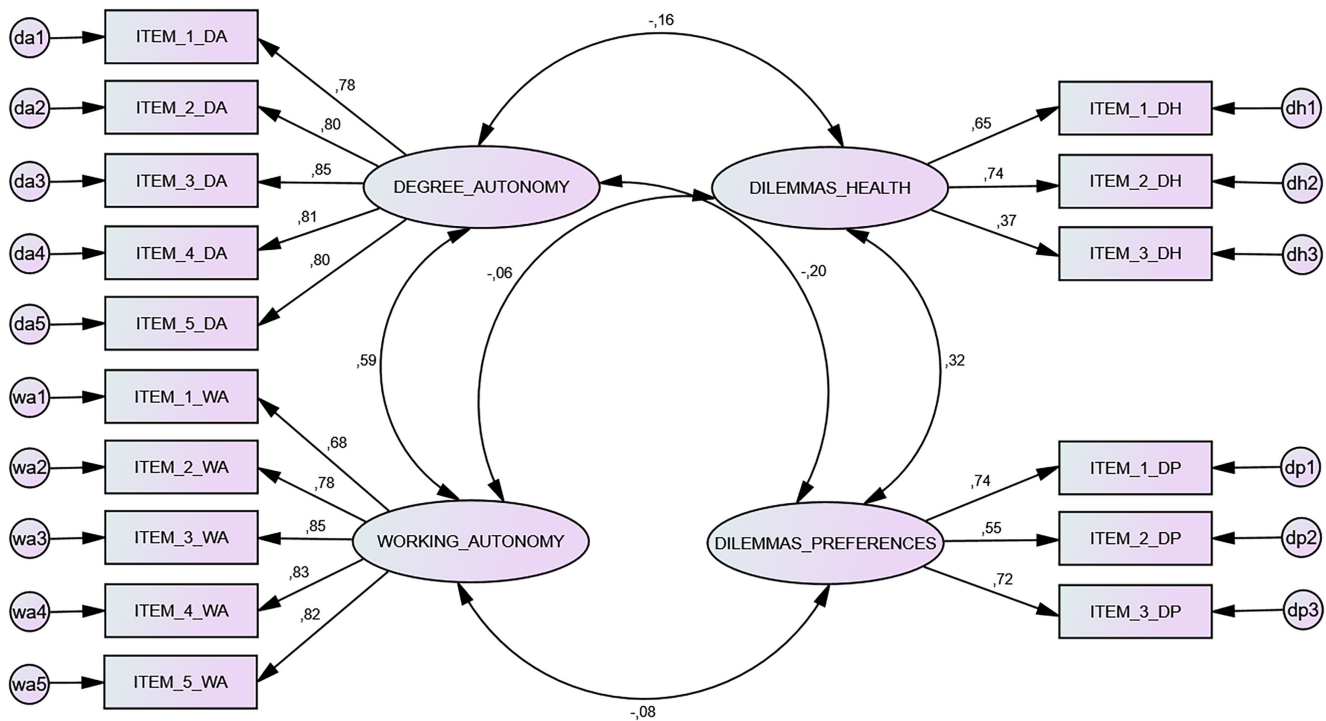


FIGURE 1 CFA model for the dimensional structure of the MPAQ-Sp (n = 576). CFA, confirmatory factor analysis; DA, degree of autonomy; DH, dilemmas: health over preferences; DP, dilemmas: preferences over health; MPAQ-Sp, Spanish version of the Maastricht Personal Autonomy Questionnaire; WA, working on autonomy.

an increased likelihood of physical disability and frailty (Nicholson et al., 2021; Pivetta et al., 2020). Conversely, the scales “Dilemmas: health over preferences” and “Dilemmas: preferences over health” are negatively related to the MPAQ-Sp. Moreover, “Dilemmas: health over preferences” did so with a low correlation index. This could be related to the fact that people with a higher degree of functional independence tend to report better health and quality of life (Alonso-Sardón et al., 2019) and, as a consequence, this could have made it easier for them to make decisions about their personal autonomy (Pel-Littel et al., 2021). Another factor that might also have had some influence is that the construct validity of the MPAQ-DI was not assessed in the original study (Mars et al., 2014). In our case, the construct validity of the MPAQ-Sp was assessed by conducting a CFA to test the dimensionality model extracted after the EFA. The relevance of the four-scale model was confirmed. Although the sample used for this CFA was comprised of retired community-dwelling older adults, with more female participants, with a higher mean age, with a lower educational level and with more chronic conditions on average than the sample of the original version, the theoretical dimensions that make up each of the scales coincided. Except for the splitting of the MPAQ-DI scale into two, we obtained the same distribution of items in each scale as in the original version. Despite all these differences, the results between the two studies were very similar, which contributes to support the instrument validity and highlights its relevance.

As previously stated, we could assume large differences given that the more conditions a person suffers from, the more personal autonomy is affected (Geithner & Wagner, 2021). Similarly, the original study included subjects who were at least 59 years old, with an average age of 70, while in our study we included subjects who were at least 65 years old with an average age of almost 76. This may have led to greater variation between the two studies (Li et al., 2021). While our sample was predominantly female, 68% of the original study's participants were male and this might have affected the results. In traditional gender roles, autonomy is different for men and women (Geithner & Wagner, 2021; Morsch et al., 2017). However, both validation studies seem to contradict this. The fact that the original study was conducted in the Netherlands where, unlike Spain, its health system model is not a National Health System, could have resulted in differences in patient autonomy (Leino-Kilpi et al., 2003). In terms of education, in our study, more than 70% of participants had no education or only primary education, compared to 23.5% in the study by Mars et al. (2014). This is pertinent given that there are data showing that autonomy is reinforced by educational level (Yeom & Lee, 2022). This could indicate that the value placed on autonomy and decision-making is defined by the person's life experiences that allow them to continuously adapt to their reality, rather than by educational level or other factors mentioned above (Hedman et al., 2015; Pel-Littel et al., 2021). The two studies are similar in the proportion of people who were living together. This could indicate that having people close to you and sufficient social support has more weight than the other factors mentioned above (Doekhie et al., 2020; Li et al., 2021; Stawnychy et al., 2021).

Reliability was tested by examining the internal consistency (IC) of each of the scales comprising the MPAQ-Sp. While the IC of “Degree of Autonomy” and “Working on Autonomy” was high, the IC of the two “Dilemmas” scales was adequate. Furthermore, due to the age of the older adults, as well as the severity of their multimorbidity, it is likely that they have accepted a passive role in decision-making, letting others decide for them and thus not facing dilemmas (Doekhie et al., 2020; Li et al., 2021; Morsch et al., 2017). Even so, the four scales provide detailed insights into the personal autonomy of community-dwelling older adults with chronic multimorbidity, as well as their underlying factors. The fact that the items of the original MPAQ-DA scale were not specifically developed for people with chronic conditions (Mars et al., 2014), could also be a strong reason to use the MPAQ-Sp among other populations such as healthy older adults.

4.1 | Limitations

Despite being a methodologically rigorous study, some limitations must be considered. The first limitation is related to convenience sampling, which makes it difficult to generalise the results. We tried to minimise the effects of this limitation by recruiting older adults from 10 community centres in five health districts in a large area of southeastern Spain. Researchers intending to use the MPAQ-Sp in samples with different characteristics may need to conduct a validation study beforehand. In addition, it is important to consider that the social and healthcare context of the study may have influenced the results. Second, it is not clear that the items and scales that comprise the MPAQ-Sp will be sufficient to understand how the phenomenon of personal autonomy is experienced by community-dwelling older adults with chronic multimorbidity, even though our results suggest that it can indeed assess personal autonomy. Future research should use mixed method designs to explore this phenomenon from a qualitative point of view as well. Thirdly, due to organisational problems, it was not possible to administer the MPAQ-Sp to participants twice in the final validation study. In future research it would be advisable to assess the test-retest reliability of the four-dimension MPAQ-Sp. Finally, given that reliability and validity are ongoing, incremental and never-ending processes, and psychometric properties must be established in the different circumstances in which the instrument is used (Streiner & Kottner, 2014), we cannot assert an unequivocal validity and reliability of the MPAQ-Sp. The authors commit to considering these limitations in future research, as well as the possibility of validating this instrument in other community and clinical contexts.

5 | CONCLUSION

The degree of personal autonomy achieved in older adults with chronic multimorbidity is an essential factor in managing their health effectively. The results of this study suggest that the MPAQ-Sp is a robust, reliable and valid instrument to measure personal autonomy

among Spanish-speaking, community-dwelling older adults with chronic multimorbidity. More research is needed to understand why most elements of personal autonomy remain unchanged across cultures and different degrees of comorbidity. To further increase the generalisability of these findings, validation in other geographical and cultural contexts would be necessary. The MPAQ-Sp fills a gap in existing literature and is expected to be useful in research and clinical practice to understand and improve the personal autonomy of the growing population of community-dwelling older adults with chronic multimorbidity. The MPAQ-Sp can be a useful instrument to be used in nursing assessments to detect early loss of autonomy in Spanish-speaking, community-dwelling older adults with chronic multimorbidity, as well as a means to help them achieve a direct correlation between how they want their lives to be and how they actually are.

AUTHOR CONTRIBUTIONS

Iria Dobarrio-Sanz: Data collection, formal analysis, writing original draft, and writing—reviewing and editing. José Manuel Hernández-Padilla, Cayetano Fernández-Sola: Conceptualisation, methodology, project administration, funding acquisition, interpretation, writing—reviewing and editing, and overall supervision. Matías Correa-Casado, María del Mar Jiménez-Lasserrotte: Formal analysis and writing original draft. María Dolores Ruiz-Fernández: Data collection, data collection, formal analysis, and writing—reviewing and editing. All authors contributed to the manuscript, read and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.





ETHICS STATEMENT

Ethical permission was granted from the Nursing, Physiotherapy and Medicine Department's Ethics Committee (EFM89/2020). All participants provided informed written consent for data collection and analysis.

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