

Original Article

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# Frommelt Attitude Toward Care of the Dying Scale Form B: Validation for Spanish health professionals

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## Abstract

**Objective.** The aim of this study is to culturally adapt and validate the Frommelt Attitude Toward Care of the Dying Scale Form B (FATCOD-B) in Spanish health professionals.

**Method.** A cultural adaptation and scale validation was carried out to evaluate the validity of appearance, content and construct, reliability and feasibility. The psychometric validation of the FATCOD-B was carried out on a sample of 2,446 Spanish physicians, nurses, psychologists, and social workers and students of these disciplines, between January 2017 and December 2018. This sample was selected by intentional sampling. Descriptive statistics were used to characterize the sample. An exploratory multi-group factor analysis was performed, internal consistency was evaluated by calculating Cronbach's  $\alpha$  and stability by test–retest.

**Results.** A total of 2,446 people participated in the study, 1,134 students and 1,312 professionals. The exploratory multi-group factor analysis revealed a two-dimensional factor structure, with a total of 17 items retained in the model from the 30 of the original scale. The results showed that this version has adequate reliability ( $\alpha = 0.79$ ) and for each subscale, and stability (ICC = 0.843,  $p < 0.001$ ).

**Significance of results.** FATCOD has been used with physicians and nurses from different countries. However, no reports have been found in the literature of its use with psychologists and social workers. It is important to have an instrument that allows us to know the attitudes of these professionals since they are all directly involved in the care of patients at the end of their lives and their families. The Spanish version of FATCOD-B has proven to be a reliable and valid instrument for its use in Spanish health professionals while allowing comparisons between disciplines.

## Introduction

Many chronic patients will at some point have end-of-life palliative needs (Gómez-Batiste et al., 2014). In order to achieve the best possible quality of life for patients and families, health professionals need to acquire specific skills and have positive attitudes toward palliative care, so that they can respond appropriately to patients' and their families' needs (Smith, 2003; de Vlieger et al., 2004; Agusti et al., 2018; Jiang et al., 2019).

Bandura (1990) defines competence as the ability to translate secondary skills (cognitive, social, emotional, and sensory-motor), knowledge, values, and attitudes into appropriate actions. Attitudes refer to the positive or negative evaluations that people make about any aspect of reality (Briñol et al., 2007). Traditionally, attitudes have been considered to have three fundamental components: affective (feelings or affective evaluation about the attitude object), cognitive (knowledge, opinion, conviction, or thought about the attitude object) and behavioral (behavior in the presence of the attitude object) (Escámez et al., 2007). Attitudes are directly related to the thoughts and beliefs one has toward the object of attitude.

The training that health professionals receive in relation to end-of-life care has been found to be deficient: Agusti et al. (2018) showed how medical students showed great concern about the death of patients. On the other hand, Bassah et al. (2014) conclude in their review on end-of-life attitudes in nursing students that little time is usually devoted to palliative care education or that it is often included in other specialized nursing courses. This can cause stress and anxiety for professionals when caring for patients in end-of-life situations, which can affect their own health in the long term (Cox et al., 2000; Mallory, 2003; Caton and Klemm, 2006; Shoji et al., 2016).

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Moreover, training in palliative care and previous experience related to the end of life have an influence on improving the attitude of health professionals toward the care of patients at the end of life (Berndtsson et al., 2019; Dimoula et al., 2019; Smothers et al., 2019). At the same time, a more positive attitude to care for these people is also associated with less fear of death and avoidance of death, anxiety, and stress (Espinoza-Venegas et al., 2016; Bermejo et al., 2018; Barnett et al., 2020).

Quality palliative care requires both the competence of the health professionals and a positive attitude on their part that promotes dignified care, where in addition to pain relief and symptom control, there is emotional accompaniment (Espinoza-Venegas et al., 2016). The attitude of professionals has been found to be one of the most significant predictors of quality of care, which has a positive impact on quality of life at the end of patients' lives (Ascencio et al., 2014). Negative attitudes create barriers to providing comprehensive patient care (Arslan et al., 2014; Sadowska et al., 2020). For this reason, it is important to have tools that allow us to know the attitude of health professionals toward the care of people who are at the end of their lives.

One of the instruments used to assess the attitude of professionals toward end-of-life care is the Frommelt Attitude Toward Care of the Dying Scale (FATCOD). The FATCOD Form A (FATCOD-A) was developed in the United States by Frommelt to assess nurses' attitudes toward the care of people at the end of life and their families (Murray-Frommelt, 1991).

This one-dimensional scale consists of 30 items that evaluate by means of a Likert scale from 1 to 5 (strongly disagree to strongly agree) the nurses' attitude toward the care of people at the end of their lives and their families. Of these items, 15 are written positively, and the rest are written negatively. The total score varies from 30 to 150 points, with a higher score indicating a better attitude toward care. The validity was determined by the Content Validity Index (CVI), finding an interrater agreement of 0.98 among the experts. To determine reliability, a test-retest was conducted first with 18 nurses from an oncology unit, obtaining a Pearson's correlation coefficient of  $r = 0.94$ , and secondly with 30 oncology and surgery nurses with a result of  $r = 0.90$  (Murray-Frommelt, 1991).

In order to make the scale applicable to different professionals, the author made modifications, resulting in the FATCOD Form B (FATCOD-B) (Murray-Frommelt, 2003). The FATCOD-B was administered to students of nursing, psychology and physiotherapy, among others. The CVI obtained was 1.0, and the Pearson correlation coefficient of the test-retest  $r = 0.93$ .

The FATCOD has been validated in different languages and countries, and in professionals from different disciplines. FATCOD-A has been validated in Spain, proving to be a valid instrument for assessing attitudes toward end-of-life care in nursing students (Edo-Gual et al., 2018). However, there is no evidence to indicate that this version of FATCOD is useful for assessing attitudes in other health professionals.

On the other hand, version B has greater use internationally (Japan, Sweden, Italy, China, Palestine, Poland, Turkey) (Nakai et al., 2006; Leombruni et al., 2015; Mastroianni et al., 2015; Wang et al., 2016; Henoch et al., 2017; Loera et al., 2018; Akbolat et al., 2020; Browall et al., 2020; Sadowska et al., 2020). This is possibly due to a greater usefulness of version B as it is applicable to a larger number of professionals.

Therefore, the aim of this study was to carry out the adaptation and validation of the FATCOD-B in Spanish professionals and students of medicine, nursing, psychology, and social work,

evaluating the validity of appearance, content and construct, reliability, and feasibility.

## Methods

### Methodological type and design

An adaptation and scale validation was carried out following the process proposed by Ramada et al. (2013). This includes the translation, revision by a committee of experts (CE), pilot test, retro-translation and comparison with the original version, and validation of the instrument by checking the psychometric properties that determine reliability, validity, and feasibility.

### Phase I: Adaptation

With the author's permission, the original scale was translated from English into Spanish by two independent native Spanish bilingual translators. A summary of the translations was made and sent in two rounds to a CE made up of 12 professionals with a minimum of 5 years' clinical and/or research experience in palliative care, for the review and evaluation of the semantic equivalence, content and appearance validity, and feasibility of the instruments, using a Likert scale. A minimum level of agreement among experts of 80% was established (García and Suárez, 2013). Once the recommendations made by the CE had been consolidated, the preliminary version obtained was back-translated by two bilingual translators and compared with the original version.

The pilot test was carried out with 40 professionals who had similar characteristics to the population under study (Ramada-Rodilla et al., 2013). They were given the Spanish version of the FATCOD-B (FATCOD-B-S), a sociodemographic information question form and another form to write down their observations on the scale. The pilot test served to establish whether the questionnaire could be satisfactorily understood and completed by the professionals and to estimate the time required for its completion. Items that were referred to as difficult to understand by 15% or more of the participants would be modified, refining the final version of the instrument (García and Suárez, 2013). However, none of the items met this criterion.

### Phase II: Psychometric validation

#### Setting

The population under study was made up of Spanish physicians, nurses, psychologists, and social workers who are registered in the respective professional associations, as well as students of these qualifications who are enrolled in the final years of their degree at different universities.

#### Sample

An intentional sampling was carried out, seeking the participation of Spanish physicians, nurses, psychologists, and social workers who are professionally active, registered in professional associations, who practice in Spain, who have 1 year or more of professional experience, whose mother tongue is Spanish and who have email registered in the database of the corresponding professional association; and students in their 5th and 6th year of the degree in medicine and in their 4th year of nursing, psychology, and social work. The data were collected between January 2017 and December 2018.

### *Instruments and variables*

Together with FATCOD-B-S (Annex 2), a sociodemographic information form was used to obtain data such as age, sex, and previous training and experience at the end of life.

### *Procedure for data collection*

The FATCOD-B-S, together with the sociodemographic information form and the informed consent, was entered into a virtual platform (Google-Forms) with free access to administer online questionnaires. The URL of this platform was sent by email to professionals through the professional associations and professors of the grades that provided it to the students.

### *Data analysis*

Descriptive data analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 22 for Windows. Descriptive statistics were used to characterize the sample.

The validity of appearance and semantic equivalence was determined with the results obtained in the CE review and the pilot test, and the validity of content from the CE's evaluations with the CVI.

Reliability was determined by assessing internal consistency by Cronbach's  $\alpha$  for the full scale and for each subscale; and stability by test-retest, re-administering the scale to a group of 37 students one month after they had first done so.

The Mplus version 8 statistical package was used to perform structural equation modeling. This modeling, specifically the exploratory multi-group factor analysis (EMGFA), allowed the simultaneous evaluation of the validity of FATCOD-B-S in four different disciplines: physicians, nurses, psychologists, and social workers. Since only FATCOD-A had been validated in Spanish nursing students (Edo-Gual *et al.*, 2018), it was decided to adopt an exploratory rather than confirmatory approach. Through the EMGFA, different degrees of invariance between the groups analyzed can be tested (configuration invariance, mild metric invariance, strong metric invariance) (Kline, 2016). The fit of each model was evaluated with the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) coefficients. The critical values used in these cases were:  $\chi^2$  significant, IFC > 0.90 (Bentler, 1990), and RMSEA < 0.08 (Browne and Cudeck, 1993). In order to compare models with different degrees of invariance, the coefficients  $\Delta$ CFI and  $\Delta$ RMSEA were used. Values greater than 0.01 in these coefficients indicate that the model fit has worsened, and therefore, the model with the highest degree of invariance cannot be supported (Cheung and Rensvold, 2002). With regard to factorial loads, for all models the value >0.30 suggested by Hair *et al.* (2008) was adopted, for sample sizes above 350 observations. Since the sample was composed by both professionals and students of the four aforementioned disciplines, the authors introduced the dedication variable (professionals/students) in the selected EMGFA.

On the other hand, a correlation was performed between the two subscales, and between each subscale and the FATCOD-B-S using Spearman's Rho correlation coefficient.

To determine the feasibility of the scale, the time needed to complete it, the simplicity of the format and the clarity of the items were assessed.

### *Ethical considerations*

This study meets the basic ethical principles for the responsible conduct of research involving people. Informed consent was sought from all participants and the consent of the scale's author,

K. Murray Frommelt, was obtained for the adaptation and validation of the scale in the Spanish context. The approval of the Research Ethics Committee of the University of Granada, Spain, was obtained in act n° 270/CEIH/2017.

## **Results**

Table 1 shows the sociodemographic characteristics of the participants. A total of 2,446 people participated in the study, with 1,134 students and 1,312 professionals.

Among the students, 82.00% were female and the average age was 22.57 years (SD  $\pm$  4.320). Among professionals, 75.70% were women and the average age was 40.24 years (SD  $\pm$  12.286). 27.80% had a specialty and 43.30% a postgraduate degree. With respect to previous training in palliative or end-of-life care, 31.70% of students and 52.00% of professionals reported having received training in this area. On the other hand, 20.80% and 57.50% respectively indicated having previous professional and/or personal experience related to the end of life.

### *Linguistic validation*

The process of adaptation of the scale to the Spanish context took place between June and October 2016. Adjustments were made according to the recommendations made by the CE, changing some terms so that they were adapted to the context where the scale was to be used (Supplementary Annex 1). The number of items was not changed.

The changes made it possible to determine the semantic equivalence and content validity (CVI = 0.933). There was agreement that, apparently, the scale measured what was intended (100%). The items were relevant and easy to understand.

### *Feasibility*

The average time required by pilot participants to complete the scale was 5.50 min (SD  $\pm$  3.289), which was adequate for 100% of the respondents. Comments made by participants indicated that for 97.50% all items were of interest and easily understood. 97.50% of the participants indicated that the FATCOD-B-S has a simple format.

### *Construct validity*

With regard to the adjustment of the invariance models, it should be noted that  $\chi^2$  was not significant in any of the cases. However, this coefficient has been the subject of debate because of its sensitivity to sample size. According to the CFI and RMSEA coefficients, the configuration invariance and mild metric invariance models were successfully fitted to the data. In contrast, the strong metric invariance model obtained a satisfactory fit in only one of the coefficients (RMSEA) (Table 2). Despite this, the comparison between the three models was made. When comparing the configuration invariance model and the mild metric invariance model, no significant worsening was noted. According to this result, the model of mild metric invariance was preferred over the model of configuration invariance.

The models of mild and strong metric invariance were then compared. Both coefficients ( $\Delta$ CFI and  $\Delta$ RMSEA) showed a worsening of the fit. Therefore, the model with mild metric invariance was finally selected over the other two EMGFA models. Although the model of mild invariance does not allow the comparison of

**Table 1.** Sociodemographic characteristics of the participants (*n* = 2,446)

Variables	Medicine		Nursing		Psychology		Social work		<i>n</i> (%)
	Professionals	Students	Professionals	Students	Professionals	Students	Professionals	Students	
	211 (16.1)	186 (16.4)	552 (42.1)	440 (38.8)	370 (28.2)	247 (21.8)	179 (13.6)	261 (23.0)	
Age	42.7 (±12.73) 24–70	22.7 (±3.13) 20–48	37.1 (±12.70) 22–65	22.0 (±4.57) 18–50	42.8 (±10.68) 22–70	22.9 (±4.70) 20–54	41.8 (±11.47) 22–66	23.2 (±4.13) 20–50	Mean (SD) <i>R</i>
Sex									
Female	115 (54.5)	127 (68.3)	442 (80.1)	378 (85.9)	280 (75.7)	200 (81.0)	156 (87.2)	225 (86.2)	<i>n</i> (%)
Male	96 (45.5)	59 (31.7)	110 (19.9)	62 (14.1)	90 (24.3)	47 (19.0)	23 (12.8)	36 (13.8)	<i>n</i> (%)
Professional experience (years)	15.4 (±11.83) 0–44	0.40 (±2.52) 0–26	12.88 (±12.44) 0–42	0.58 (±2.89) 0–26	12.87 (±10.63) 0–50	0.16 (±1.33) 0–14	9.25 (±11.51) 0–50	0.19 (±1.42) 0–18	Mean (SD) <i>R</i>
Specialty training									
Yes	170 (80.6)	1 (0.5)	68 (12.3)	1 (0.2)	124 (33.5)	0	3 (1.7)	0	<i>n</i> (%)
No	41 (19.4)	185 (99.5)	484 (87.7)	439 (99.8)	246 (66.5)	247 (100)	176 (98.3)	261 (100)	<i>n</i> (%)
Postgraduate education									
Yes	85 (40.3)	4 (2.2)	157 (28.4)	0	255 (68.9)	8 (3.2)	71 (39.7)	3 (1.1)	<i>n</i> (%)
No	126 (59.7)	182 (97.8)	395 (71.6)	440 (100)	115 (31.1)	239 (96.8)	108 (60.3)	258 (98.9)	<i>n</i> (%)
Previous training in end-of-life care									
Yes	123 (58.3)	102 (54.8)	337 (61.1)	179 (40.7)	161 (43.5)	40 (16.2)	61 (34.1)	38 (14.6)	<i>n</i> (%)
No	88 (41.7)	84 (45.2)	215 (38.9)	261 (59.3)	209 (56.5)	207 (83.8)	118 (65.9)	223 (85.4)	<i>n</i> (%)
Previous experience in end-of-life care									
Yes	134 (63.5)	58 (31.2)	332 (60.1)	100 (22.7)	196 (53.0)	33 (13.4)	92 (51.4)	45 (17.2)	<i>n</i> (%)
No	77 (36.5)	128 (68.8)	220 (39.9)	340 (77.3)	174 (47.0)	214 (86.6)	87 (48.6)	216 (82.8)	<i>n</i> (%)

Source: Sociodemographic information form completed by Spanish students and health professionals.



**Table 2.** Invariance models

Model	$\chi^2$	Degrees of freedom	p-value	CFI	RMSEA	$\Delta$ CFI	$\Delta$ RMSEA
Configural invariance model	945.28	412	>0.05	0.915	0.046		
Mild metric invariance model	1052.52	502	>0.05	0.912	0.042	0.003	0.004
Strong metric invariance model	1495.71	547	>0.05	0.848	0.053	-0.064	-0.011

means at the level of constructs or factors as the model of strong metric invariance would do, it is possible to conclude from the model of mild invariance that the different groups of participants in the study have a similar understanding or idea about the factors that are being measured by FATCOD-B-S. Figures 1–4 show the specific results of the mild invariance model for groups of student–professionals in medicine, nursing, psychology, and social work.

Seventeen of the 30 items were retained in the model. The remaining items were eliminated because their factorial loads did not reach the limit value or because they had cross-factorial loads. This result is similar to the findings of previous studies (Loera et al., 2018).

In the mild invariance model, the nonstandardized factor loads were set equally across all groups. The standardized factor loads are shown in the figures. The acceptance of the mild metric invariance model indicates that the same reagents measure the same constructs in all analyzed groups. The model also suggests that the participants of the different groups interpret the FATCOD-B-S reagents in the same way. Put another way, regardless of which group the participants belong to, the PACDP (Positive Attitudes toward Caring for Dying Patients) and PPFCC (Perceptions of Patient and Family-Centered Care) factors have the same meaning.

When repeating the analyses introducing the dedication variable (professionals/students), it was found that the factor structure and nonstandardized factor loads remain the same in all groups.

On the other hand, a Spearman’s Rho correlation coefficient was found between the two subscales (PACDP–PPFCC) of

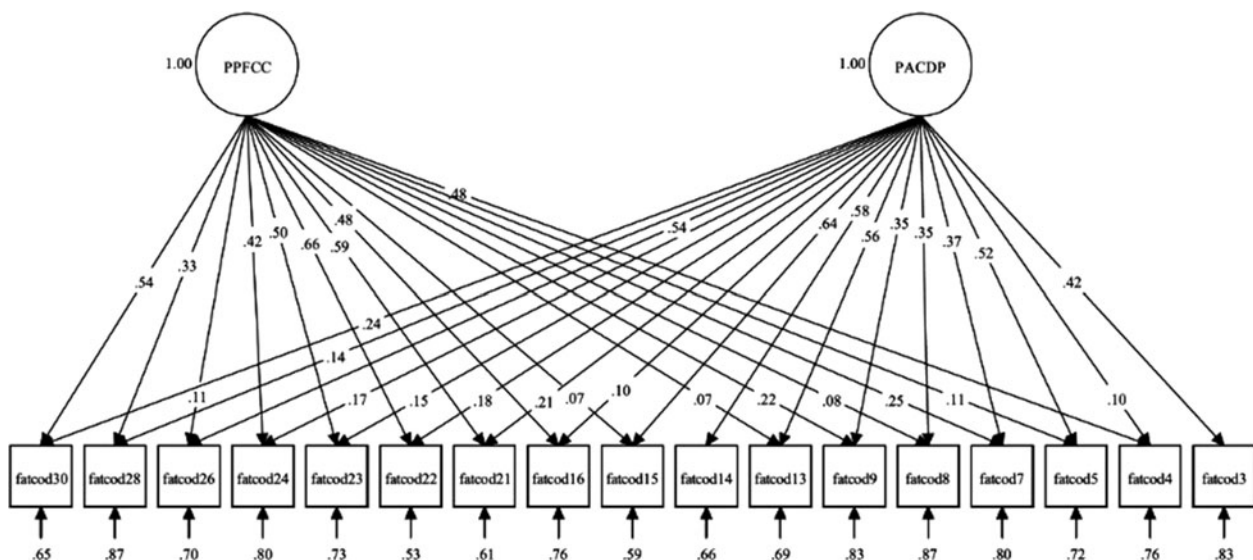
0.296 ( $p < 0.001$ ), and between the PACDP subscale and the FATCOD-B-S of 0.909 ( $p < 0.001$ ), and between the PPFCC subscale and the FATCOD-B-S of 0.641 ( $p < 0.001$ ).

**Reliability**

Once the invariance of the instrument was established, Cronbach’s  $\alpha$  was calculated for each of the factors, taking into account only the items retained. For the PACDP factor, the values were the following: physicians 0.74, nurses 0.79, psychologists 0.82, and social workers 0.76. For the PPFCC factor, the coefficients were as follows: physicians 0.72, nurses 0.70, psychologists 0.70, and social workers 0.66. Cronbach’s  $\alpha$  for total retained items is 0.79. It should be noted that for exploratory studies, values higher than 0.60 are considered acceptable (Hair et al., 2019). Consequently, the results suggest that the instrument factors are reliable in each of the groups examined in this study. The results of the test–retest showed good results in relation to the stability of the scale (ICC = 0.843,  $p < 0.001$ ).

**Discussion**

Palliative care is a field of interdisciplinary practice. The involvement of different health professionals in care of patients at the end of life and their families is essential. It is important that health professionals, not only nurses, demonstrate positive skills and attitudes toward palliative care in order to respond appropriately to patients’ and families’ needs. In Spain, FATCOD-A had only been validated in nurses, which prevented the use of the



**Fig. 1.** Mild metric invariance physicians’ group.

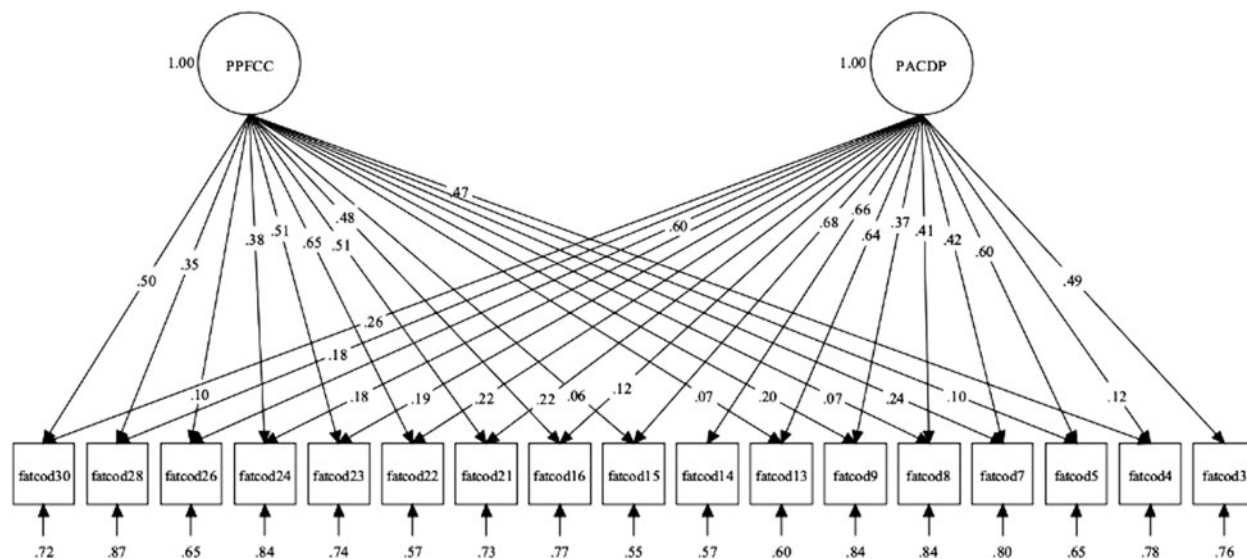


Fig. 2. Mild metric invariance nurses' group.

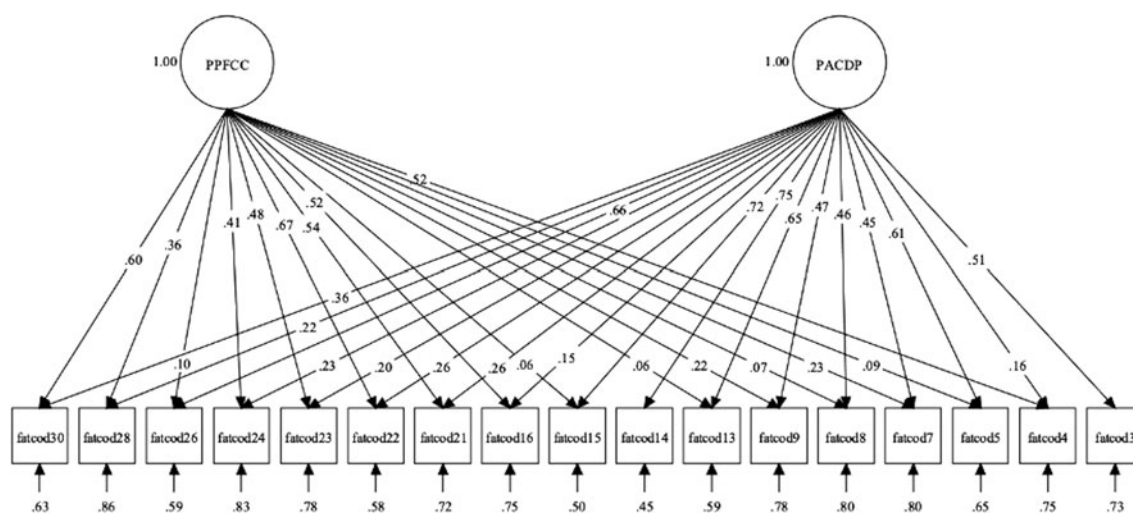


Fig. 3. Mild metric invariance psychologists' group.

instrument to assess the attitude toward the care of people at the end of their lives in different health professionals.

The translation of an instrument is a necessary process, but it is not sufficient to guarantee its validity in a different context for which it was designed (Sousa and Rojjanasrirat, 2011). For this reason, the methodological process for the adaptation and validation of FATCOD-B in the Spanish context was carried out in this study, as a strategy to ensure its validity and reliability. To do so, it is necessary to look for the adaptation of it to the specific conditions of the population to which it is going to be applied.

This scale has been used in different countries, administered to professionals in different areas, validated by different statistical methods, and with different results in relation to the factor structure of the scale. The great variability in the validation results can make us think of possible failures since the original construction of the instrument, making it necessary to revise the items that make it up. However, it is an instrument that since its publication

(Murray-Frommelt, 1991, 2003) has been widely used in different contexts. In this study, the validation of FATCOD-B-S was carried out simultaneously in Spanish physicians, nurses, psychologists, and social workers, and students of these disciplines.

The factorial distribution of FATCOD found in previous studies varies from the one-dimensional distribution reported in the original validation study (Murray-Frommelt, 1991, 2003) and in the short version validated by Browall et al. (2020) up to a maximum of 7 factors found in the Chinese version (Wang et al., 2016). Most studies found a two-dimensional structure (Nakai et al., 2006; Leombruni et al., 2015; Edo-Gual et al., 2018; Loera et al., 2018; Sadowska et al., 2020). However, the distribution of items in the factors and the number of items retained vary. The distribution of items obtained in this study, although with a lower number of items retained, is very similar to that found by other authors (Nakai et al., 2006; Leombruni et al., 2015; Edo-Gual et al., 2018; Loera et al., 2018; Sadowska et al., 2020).

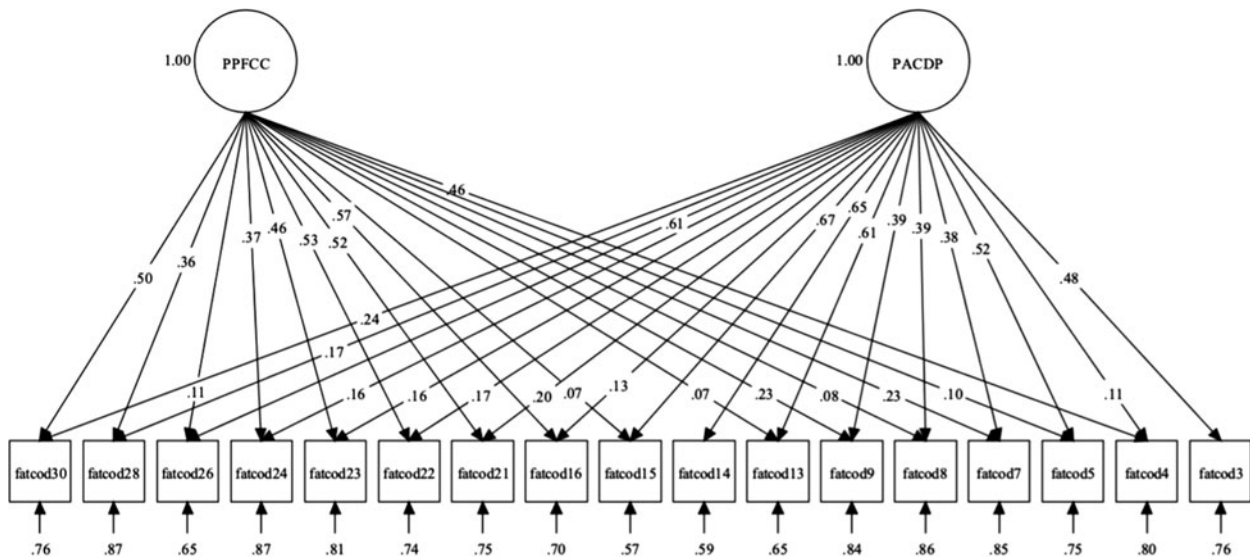


Fig. 4. Mild metric invariance social workers' group.

The data analysis technique used in this study allows the inclusion of measurement errors in the validation model. It is a technique that involves greater constraints than traditional factor analyses, and even more demanding than the principal component analysis used by Edo-Gual *et al.* (2018) to analyze the data provided by a sample of Spanish nursing students. The major restrictions of the technique used in this study, the restriction to equality of the number of factors and nonstandardized factor loads, plus the inclusion of residual variances, may explain the reduction with respect to the original number of items in the FATCOD-B. However, if comparisons between health professionals are to be made using this instrument, only reagents subjected to multi-group analysis such as those used in this study should be used for this purpose. In this sense, although a greater quantity of reagents was eliminated through the analyses reported in this study, the value of these results is to suggest that only those items of the FATCOD-B-S should be used to make comparisons between physicians, nurses, psychologists, and social workers. It is also important to point out that it is not convenient to use a validated instrument in nurses to make measurements in other types of professionals. With the validation made in this study, the interested parties can use the extracted items to make measurements in the groups examined here.

The scale has proven to be a reliable tool for assessing health professionals' attitudes to end-of-life care, with a Cronbach  $\alpha$  ranging from 0.74 to 0.82 for different professionals in the PACDP subscale and from 0.66 to 0.72 in the PPFCC subscale. In the previous studies, the lowest values in reliability were those reported by Mastroianni in the validation of the scale with Italian nursing students, where they found 6 factors with a Cronbach  $\alpha$  between 0.47 and 0.69 (Mastroianni *et al.*, 2015) and the highest found in the short version of the scale, one-dimensional, validated in Sweden with nurses, with a 0.87 Cronbach  $\alpha$  (Browall *et al.*, 2020).

The basic palliative care teams are made up of physicians and nurses, with the support of psychologists and social workers (Ministry of Health, 2011). Although FATCOD has been used with physicians and nurses from different countries, no reports have been found in the literature of its use with psychologists

and social workers. It is considered important to have an instrument that allows us to know the attitudes of these professionals since they are all directly involved with the care of patients at the end of life and their families. This study allows us to have a validated instrument to evaluate the attitude of health professionals, which will allow, on the one hand, to select the professionals who have the best attitude toward the care of people who are at the end of their lives in order to carry out their care work in these areas, and on the other hand, to implement the necessary actions to improve the attitude of the professionals, which is related to an improvement in the quality of care (Ascencio *et al.*, 2014; Jiang *et al.*, 2019) and a decrease in the negative side effects of this care on professionals (Agusti *et al.*, 2018; Bermejo *et al.*, 2018; Dimoula *et al.*, 2019).

### Limitations

The selection of the sample was intentional. However, the sample size is larger than that used in previous studies. However, results may vary when using another sample selection method, so results obtained in other studies will need to be confirmed.

The FATCOD-B-S was administered virtually. Although the response format has not been modified, it is unknown whether there may be differences with respect to paper administration.

### Conclusion

The linguistic and psychometric validation of FATCOD-B-S in Spanish physicians, nurses, psychologists, and social workers provides a valid instrument for determining attitudes toward the care of people at the end of their lives. The number of items in FATCOD-B-S is lower than in the original version. However, the results show that only these items should be used to make comparisons between health professionals in the different disciplines where it has been validated.

FATCOD-B-S demonstrates its validity of appearance, since the items, in appearance, measure what they are proposed to; and it also demonstrates its validity of content, since the content of each item is relevant in the context in which it is intended to be



applied and the aspects which are relevant to the construction of attitudes toward the care of people at the end of their lives are included in it. The scale has proven to be useful in relation to the time required and the ease of completion of the format.

The Spanish version of the scale is made up of two subscales in the four professional groups: "Positive attitudes toward caring for dying patients" and "Perceptions of patient and family-centered care," and a high internal consistency index is obtained that demonstrates the validity and reliability of the instrument.

Being able to know the attitudes of physicians, nurses, psychologists, and social workers toward the care of people who are at the end of their lives will make it possible to implement the necessary actions to improve the attitude of the professionals, which is related to an improvement in the quality of care and a reduction in the negative side effects of this care on the professionals.

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## References

- Agusti AM, Esquerda M, Amorós E, *et al.* (2018) Fear of death in medical students. *Palliative Medicine*. doi:10.1016/j.medipa.2017.05.005
- Akbolat M, Ünal Ö and Karakaya BG (2020) Turkish adaptation of the Frommelt Attitude Toward Care of the Dying Scale. *OMEGA - Journal of Death and Dying*, 003022282093013. doi:10.1177/0030222820930139
- Arslan D, Akca NK, Simsek N, *et al.* (2014) Student nurses' attitudes toward dying patients in central Anatolia. *International Journal of Nursing Knowledge* 25(3), 183–188. doi:10.1111/2047-3095.12042
- Ascencio L, Allende S and Verastegui E (2014) Beliefs, attitudes, death anxiety in a multidisciplinary team oncology palliative care. *Psicooncología* 11(1), 101–115. doi:10.5209/rev\_Psic.2014.v11.n1.44920
- Bandura A (1990) Reflections on nonability determinants of competence. In Sternberg R & Kolligian J (eds.), *Competence Considered*. London, UK: Yale University Press, pp. 315–362.
- Barnett MD, Reed CM and Adams CM (2020) Death attitudes, palliative care self-efficacy, and attitudes toward care of the dying among hospice nurses. *Journal of Clinical Psychology in Medical Settings*, 1–6. doi:10.1007/s10880-020-09714-8
- Bassah N, Seymour J and Cox K (2014) A modified systematic review of research evidence about education for pre-registration nurses in palliative care. *BMC Palliative Care* 13(1), 56. doi:10.1186/1472-684X-13-56
- Bentler PM (1990) Comparative fit indexes in structural models. *Psychological Bulletin* 107(2), 238–246.
- Bermejo JC, Villaceros M and Hassoun H (2018) Attitudes towards end of life patient care and fear of death in a healthcare student sample. *Medicina Palliativa*. doi:10.1016/j.medipa.2017.02.004
- Berndtsson IEK, Karlsson MG and Rejnö ÅCU (2019) Nursing students' attitudes toward care of dying patients: A pre- and post-palliative course study. *Heliyon* 5(10). doi:10.1016/j.heliyon.2019.e02578
- Briñol P, Falces C and Becerra A (2007) Attitudes. In Cejudo JM (ed.), *Social Psychology*, 3rd ed. Madrid, Spain: McGRAW-HILL, pp. 457–490.
- Browall M, Pakpour AH, Melin-Johansson C, *et al.* (2020) Development and psychometric evaluation of a new short version of the Swedish frommelt attitudes toward care of the dying scale. *Cancer Nursing* 44(4), 305–313. doi:10.1097/NCC.0000000000000794
- Browne MW and Cudeck R (1993) Alternative ways of assessing model fit. In Bollen KA & Long JS (eds.), *Testing Structural Equation Models*. California: SAGE Publications Inc, pp. 136–163.
- Caton A and Klemm P (2006) Introduction of novice oncology nurses to end of life care. *Clinical Journal of Oncology Nursing* 10(5), 604–608.
- Cheung G and Rensvold R (2002) Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal* 9(2), 233–255. doi:10.1207/S15328007SEM0902\_5
- Cox T, Griffiths A and Rial-González E (2000) *Research on Work-Related Stress*. Luxembourg: European Agency for Safety and Health Work.
- de Vlieger M, Gorchs N, Larkin PJ, *et al.* (2004). *A guide of development of palliative nurse education in Europe*. [www.eapcnet.eu/themes/education/nursing.aspx](http://www.eapcnet.eu/themes/education/nursing.aspx)
- Dimoula M, Kotronoulas G, Katsaragakis S, *et al.* (2019) Undergraduate nursing students' knowledge about palliative care and attitudes towards end of life care: A three-cohort, cross-sectional survey. *Nurse Education Today* 74, 7–14. doi:10.1016/j.nedt.2018.11.025
- Edo-Gual M, Tomás-Sábado J, Gómez-Benito J, *et al.* (2018) Spanish adaptation of the Frommelt Attitude Toward Care of the Dying Scale (FATCOD-S) in nursing undergraduates. *Omega* 78(2), 120–142. doi:10.1177/0030222816688294
- Escámez J, García R, Pérez C, *et al.* (2007) *Learning Values and Attitudes*, 1st ed. Barcelona, Spain: Octahedron - OEI.
- Espinoza-Venegas M, Luengo-Machuca L and Sanhueza-Alvarado O (2016) Attitudes held by Chilean nursing professionals on care of the dying. A multivariate analysis. *Aquichan* 16(4), 430–446. doi:10.5294/aqui.2016.16.4.3
- García M and Suárez M (2013) Delphi method for the expert consultation in the scientific research. *Revista Cubana de Salud Pública* 39(2), 253–267.
- Gómez-Batiste X, Martínez-Muñoz M, Blay C, *et al.* (2014) Prevalence and characteristics of patients with advanced chronic conditions in need of palliative care in the general population: A cross-sectional study. *Palliative Medicine* 28(4), 302–311. doi:10.1177/0269216313518266
- Hair JF, Anderson RE, Tatham R, *et al.* (2008) *Multivariate Analysis*. Madrid, Spain: Prentice Hall.
- Hair JF, Page M and Brunsveld N (2019) *Essentials of Business Research Methods*, 4th ed. New York: Routledge.
- Henoch I, Melin-Johansson C, Bergh I, *et al.* (2017) Undergraduate nursing students' attitudes and preparedness toward caring for dying persons – A longitudinal study. *Nurse Education in Practice* 26, 12–20. doi:10.1016/j.nepr.2017.06.007
- Jiang Q, Lu Y, Ying Y, *et al.* (2019) Attitudes and knowledge of undergraduate nursing students about palliative care: An analysis of influencing factors. *Nurse Education Today* 80, 15–21. doi:10.1016/j.nedt.2019.05.040
- Kline RB (2016) *Principles and Practice of Structural Equation Modeling*, 4th ed. New York: The Guilford Press.
- Leombruni P, Loera B, Miniotti M, *et al.* (2015) Confirmatory factor analysis of the Frommelt Attitude Toward Care of the Dying Scale (FATCOD-B) among Italian medical students. *Palliative and Supportive Care* 13(5), 1391–1398. doi:10.1017/S1478951515000139
- Loera B, Molinengo G, Miniotti M, *et al.* (2018) Refining the Frommelt Attitude Toward the Care of the Dying Scale (FATCOD-B) for medical students: A confirmatory factor analysis and rasch validation study. *Palliative and Supportive Care* 16(1), 50–59. doi:10.1017/S147895151700030X
- Mallory J (2003) The impact of a palliative care educational component on attitudes toward care of dying in undergraduate nursing students. *Journal of Professional Nursing* 19(5), 305–312.
- Mastroianni C, Piredda M, Taboga C, *et al.* (2015) Frommelt Attitudes Toward Care of the Dying Scale Form B: Psychometric testing of the Italian version for students. *Omega* 70(3), 227–250. doi:10.1177/0030222815568944
- Ministry of Health (2011) *Palliative Care Strategy of the National Health System. 2010-2014 Update*. <http://www.msps.es/organizacion/sns/planCalidadSNS/docs/paliativos/cuidadospaliativos.pdf>
- Murray-Frommelt K (1991) The effects of death education on nurses' attitudes toward caring for terminally ill persons and their families.



- American Journal of Hospice and Palliative Medicine* 8(5), 37–43. doi:10.1177/104990919100800509
- Murray-Frommelt K** (2003) Attitudes toward care of the terminally ill: An educational intervention. *American Journal of Hospice and Palliative Medicine* 20(1), 13–22. doi:10.1177/104990910302000108
- Nakai Y, Miyashita M, Sasahara T, et al.** (2006) Factor structure and reliability of the Japanese version of the Frommelt Attitudes Toward Care of the Dying Scale (FATCOD-B-J). *Japanese Journal of Cancer Nursing* 11, 723–729.
- Ramada-Rodilla JM, Serra-Pujadas C and Delclós-Clanchet GL** (2013) Cross-cultural adaptation and health questionnaires validation: Revision and methodological recommendations. *Salud Pública de México* 55(1), 57–65. doi:10.1590/S0036-36342013000100009
- Sadowska A, Nowak M and Czarkowska-Pączek B** (2020) Assessment of the reliability of the Polish language version of the FATCOD-B scale among nursing students. *Journal of Cancer Education*. doi:10.1007/s13187-019-01665-5
- Shoji K, Cieslak R, Smoktunowicz E, et al.** (2016) Associations between job burnout and self-efficacy: A meta-analysis. *Anxiety, Stress, & Coping* 29(4), 367–386. doi:10.1080/10615806.2015.1058369
- Smith S** (2003) Developing and utilizing end of life nursing competencies. *Home Health Care Management and Practice* 15(2), 116–122.
- Smothers A, Young S and Dai Z** (2019) Prelicensure nursing students' attitudes and perceptions of end of life care. *Nurse Educator* 44(4), 222–225. doi:10.1097/NNE.0000000000000606
- Sousa VD and Rojjanasrirat W** (2011) Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice* 17(2), 268–274. doi:10.1111/j.1365-2753.2010.01434.x
- Wang LP, Li YJ, Yan WZ, et al.** (2016) Development and psychometric testing Chinese version of the Frommelt Attitude Toward Care of the Dying Scale, Form B in nurses and nursing students. *Journal of Cancer Education* 31(1), 123–130. doi:10.1007/s13187-015-0810-7