*Original Article*

# A Brief Measure for the Assessment of Competence in Coping With Death: The Coping With Death Scale Short Version



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## Abstract

**Context.** The coping with death competence is of great importance for palliative care professionals, who face daily exposure to death. It can keep them from suffering compassion fatigue and burnout, thus enhancing the quality of the care provided. Despite its relevance, there are only two measures of professionals' ability to cope with death. Specifically, the Coping with Death Scale (CDS) has repeatedly shown psychometric problems with some of its items.

**Objective.** The aim of this study was to develop and validate a short version of the CDS.

**Methods.** Nine items from the original CDS were chosen for the short version. Two cross-sectional surveys were conducted in Spanish ($N = 385$) and Argentinian ($N = 273$) palliative care professionals. The CDS and the Professional Quality of Life Scale were used in this study. Statistical analyses included two confirmatory factor analyses (CFAs), followed by a standard measurement invariance routine. Reliability estimates and evidence of validity based on relations with other measures were also gathered.

**Results.** CFA models had excellent fit in both the Spanish ($\chi^2(27) = 107.043$, $P < 0.001$; Comparative Fit Index [CFI] = 0.978; Tucker-Lewis Index [TLI] = 0.970; Root Mean Square Error of Approximation [RMSEA] = 0.093 [0.075, 0.112]; Standardized Root Mean Square Residual = 0.030) and Argentinian ($\chi^2(27) = 102.982$, $P < 0.001$; CFI = 0.963; TLI = 0.950; RMSEA = 0.106 [0.085, 0.128]) samples. A standard measurement invariance routine was carried out. The most parsimonious model ($\chi^2(117) = 191.738$, $P < 0.001$; CFI = 0.987; TLI = 0.992; RMSEA = 0.046 [0.034, 0.058]; Standardized Root Mean Square Residual = 0.043) offered evidence of invariance across countries, with no latent mean differences. Evidence of reliability and evidence of validity based on relations with other measures were also appropriate.

**Conclusion.** Results indicated the psychometric boundaries of the short version of the CDS. J Pain Symptom Manage 2019;57:209–215. 

***Key Words***

*Coping with death, palliative care professionals, validity, invariance measurement, reliability, Spain, Argentina*

## Background

Establishing a proper helping relationship is essential in caring for and accompanying people in their end-of-life process. This relationship implies empathetic, intense, and continuous communication with the person and his/her relatives and being intimately in touch with their emotions. Working in an environment with potentially stressful factors such as contact with other people's pain, feelings of loss, suffering, and death makes the helping relationship a powerful experience that can have important consequences

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for professionals. These consequences can be negative, but they can also stimulate the development of coping strategies.[1]

Death, as a phenomenon that escapes our control, produces great concern in most people, along with fear and anxiety. Health professionals are not oblivious to these feelings. People coexist with the fear of death, but health professionals are continually confronted with the reality of death and are in constant contact with it.[2] In fact, being close to pain, suffering, and death has been shown to be one of the main stressors for professionals.[3,4] In addition, the attitudes of professionals who face impacting situations can modulate the quality of their care.[5] Therefore, professionals' personal resources are needed to allow them to cope with high-impact situations with empathy, but maintaining their emotional balance and equanimity.

The coping with death competence is a construct that represents a wide range of skills for facing death, as well as our beliefs and attitudes about these capacities.[6] This ability is especially relevant because it has been shown that professionals who are competent in coping with death are more effective in providing care[6–8] It is of great importance for palliative care professionals, who are exposed to death daily.[2] It can keep them from suffering compassion fatigue and burnout, thus enhancing the quality of the care provided.[6–8] The lack of this competence can lead to emotional distress and burnout.[9]

Although there are many instruments to assess death anxiety (e.g., the Death Anxiety Inventory[10] or the Death Anxiety Scale[11]), fear of death (i.e., the Collett-Lester Fear of Death Scale[12]), and other attitudes toward death (i.e., the Revised Profile of Attitudes toward Death[13]), as far as we know, there are only two measures of professionals' ability to cope with death. The Self-Competence in Death Work Scale[14] was successfully tested with helping professionals performing death work. It is a 16-item scale with two subscales (existential and emotional subscales) whose items were generated from a qualitative study with palliative care professionals.[15] The other measure is the Coping with Death Scale (CDS).[16]

The CDS was originally developed in the context of palliative care, and it was designed to measure the improvement in this competence after attending a training program.[16,17] The scale was designed to 1) measure the benefits of a proper death education; 2) assess the effectiveness of coping with a death training program; and 3) emphasize that coping is a desirable consequence after an educational experience about death. Bugen specifically worked with eight topics to enhance the coping with death competence through training. These topics were as follows: epidemiology of death, fundamentals of human grief, crisis intervention, process of dying, community resources for prevention and coping, children and death, religious and parapsychological views of death, and organizational and societal constraints.[16] The CDS is a 30-item tool specifically created for hospice and palliative care professionals. It has been used in different populations, including health science students,[18,19] hospice volunteers,[16,20,21] people in religious contexts,[22] and health care professionals.[23,24]

Despite its relevance as a construct, studies carried out on the psychometric properties of the CDS are scarce.[6,23,25] The first study to test its items' reliability was carried out by Schmidt.[6] In this study, a one-dimensional structure was assumed (but not tested), and the author found problems with three items on the scale: numbers 1, 13, and 24. However, the author did not offer the scale factorial structure or other evidence of validity. Regarding evidence of validity, the first study focused on the CDS factorial structure was carried out by Galiana et al.,[25] who performed confirmatory factor analysis (CFA) to test a one-factor structure for the complete version of the CDS. Again, problems were found with Items 1, 13, and 24, which were removed from the analysis, and low factor loadings were found for seven additional items. Another study focusing on the scale's properties was carried out by Forte and Gomes,[23] who again reported several items with inadequate psychometric behavior, this time in the Portuguese version of the scale.

Taking into account these problems and the convenience of having brief measures in demanding work contexts such as end-of-life care, the aim of the present study was to develop and validate a short version of Bugen's Coping with Death Scale. For this purpose, a brief, simpler questionnaire was developed using some of the original items proposed by Bugen.[16] This study will focus on its factorial validity, invariance measurement, reliability, and evidence of validity based on relations with other measures, in two representative samples of palliative care professionals from Spain and Argentina.

## Method

### *Development of the Short Version*

To choose the best items from the CDS, a two-step procedure was carried out, taking into account both a theoretical and an empirical approach. First, experts in end-of-life care, specifically a sample of two clinicians and three researchers, chose the items with valid content from the original scale. The main criterion they followed was to reject items with confusing meaning in the context of palliative care. For this purpose, they used their experience as experts, but also information gathered from professionals in a pilot test with the original version. Twenty items from the original scale

were selected as representative of the coping with death construct, removing Items 1, 2, 3, 4, 5, 13, 14, 25, 29, and 30. The second step was based on previous empirical results. Among the 20 items chosen first, the ones that showed greater factor loadings and reliability in previous research[25] were selected to make up the new short version. To retain a reduced number of items, the cutoff point for item homogeneity was set at 0.55. Therefore, items with lower loadings were removed, specifically Items 7, 8, 10, 11, 12, 16, 17, 18, 21, 23, and 24. Retained items and their descriptive statistics can be consulted in Table 1. These items maintained the original seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

*Design and Procedure*

Two cross-sectional surveys were conducted in Spanish and Argentinian palliative care professionals. Professionals were encouraged to participate through the Spanish Society for Palliative Care and the Pallium Latin-American Institute, with additional support from the Argentinian Association for Palliative Medicine and Care. Participants were sampled from their lists of members, and they were asked to complete an online survey using SurveyMonkey, a secure and anonymous online platform that also restricted multiple survey responses. Participation was completely voluntary.

*Participants*

Spanish sample: 385 participants answered the survey (response rate 33%); 77.55% were women. The mean age was 46.8 years (SD = 8.87). Regarding their professions, 40.3% were doctors, 33.1% nurses, 14.2% psychologists, 4.8% nursing assistants, 4.0% social workers, and 0.8% had other professions.

Argentinian sample: In Argentina, 273 palliative care professionals participated (response rate 55%); 80.8% of the participants were women. The mean age was 43.41 years (SD = 9.69). Regarding their professions, 51.5% were doctors, 16.3 psychologists, 14.8% nurses, 8.0% social workers, 1.5% occupational therapists, 1.2% nursing assistants, and the remaining 6.8% had other professions.

*Measurement Outcomes*

The survey included demographic data, along with a battery of tests designed to measure professional quality of life (compassion satisfaction, compassion fatigue, and burnout) and other related variables (i.e., coping with death, self-care, awareness …). For the purposes of this study, along with the Coping with Death Scale,[16] we used the Professional Quality of Life Scale (ProQOL).[24]

The ProQOL comprises three subscales: compassion satisfaction, compassion fatigue, and burnout. Compassion satisfaction refers to the positive consequences of helping others. Cronbach's alphas were 0.77 and 0.86 for the Spanish and the Argentinian samples, respectively. Compassion fatigue refers to the negative consequences of helping others. Cronbach's alphas were 0.78 and 0.77 for the Spanish and the Argentinian samples, respectively. Finally, burnout is defined as a form of distress manifested by decreased work performance resulting from negative attitudes and behaviors. Cronbach's alphas were 0.54 and 0.65 for the Spanish and the Argentinian samples, respectively.

*Data Analyses*

Statistical analyses included two CFAs, followed by a standard measurement invariance routine. A one-factor structure, in which a factor of coping with death competence explained Items 6, 9, 15, 19, 20, 22, 26, 27, and 28, was hypothesized, estimated, and tested in each sample. Once evidence about the adequacy of this model had been gathered, the measurement invariance of factor loadings, intercepts, and factor means was carried out, following Thompson and Green[26] and van de Schoot, Lugtig, and Hox's[27] recommendations. First, the configural or baseline model was tested, in which the one-factor structure was estimated in two samples. This model's goodness of fit was used as the baseline fit with which to compare the rest of the models. Second, metric invariance was tested: factor loadings were constrained to be the same across samples. Third, and if the metric model is retained, scalar invariance is tested: intercept thresholds were constrained across samples, maintaining previous constraints (factor loadings). Fourth, and if the scalar

*Table 1*
**Items of the Short Version of Bugen's Coping With Death Scale**

| Original Item Number | New Item Number | Item Content |
|---|---|---|
| 6 | 1 | I am aware of the full array of emotions which characterize human grief |
| 9 | 2 | I feel prepared to face my dying process |
| 15 | 3 | I can put words to my gut-level feelings about death and dying |
| 19 | 4 | I know who to contact when death occurs |
| 20 | 5 | I will be able to cope with future losses |
| 22 | 6 | I know how to listen to others, including the terminally ill |
| 26 | 7 | I can help someone with their thoughts and feelings about death and dying |
| 27 | 8 | I would be able to talk to a friend or family member about their death |
| 28 | 9 | I can lessen the anxiety of those around me when the topic is death and dying |

model is retained, latent means across countries are tested, by constraining them (while maintaining both factor loadings and intercept thresholds constrained).

All the models were estimated with weighted least square mean and variance corrected because the items were nonnormal and ordinal. Model fit was evaluated using several statistics and indices: the chi-square, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation, and the Standardized Root Mean Square Residual (SRMR). Following Hu and Bentler's[28] two-index presentation strategy, and cutoff points presented by the same authors,[29] the combination rule of CFI and TLI $> 0.95$ and SRMR $< 0.06$ will be used in the present study. To test the hypothesized invariance, models were also comparatively assessed. Chi-square difference tests were carried out, with no statistically significant differences between chi-squares implying the retention of the constrained model. As this approach has been recently criticized as being too powerful to detect even meaningless differences,[30] differences between the CFIs were also used, considering negligible differences of 0.05 or less[30] of 0.01 or less[31] and meaning, then, the retention of the constrained model.

Reliability estimates were also calculated, using both Cronbach's alpha and the Composite Reliability Index (CRI). Alpha is the most widely used index for reliability estimation. However, alpha is influenced by the scale's length. As the short version is a reduced version of the original one, CRI was also used.[32]

Finally, evidence of validity based on relations with other measures was gathered. Estimates of validity were offered by means of Pearson correlations between the original CDS and the short version. Pearson correlations between both the original and short version and the ProQOL dimensions were also calculated and compared.

Mplus version 8 software (Los Angeles, CA)[33] and SPSS version 24 (Chicago, IL) were used.

## Results

First, two completely a priori CFAs were hypothesized, estimated, and tested in each sample. Model fit was excellent in both the Spanish and Argentinian samples, except for the Root Mean Square Error of Approximation (see Table 2). However, this index has shown poor performances in structural models with low degrees of freedom.[34] The models' fit, then, was considered adequate, and the invariance routine was executed.

With regard to the invariance results, the configural model fitted the data adequately, according to the CFI, TLI, and SRMR (see Table 2), and consequently, it was retained as the baseline model. Then, metric invariance was tested, with no statistically significant differences found between the chi squares, and an improvement of 0.017 found in the CFI. Evidence pointed to metric invariance across samples. When scalar invariance was tested, statistically significant differences were found between the chi squares. However, the CFI was again higher than the one presented in the configural model, and it only decreased by 0.006 when compared to the metric model. These differences were considered negligible,[30,31] and the model was retained. Finally, and given that the scale was invariant across countries, means comparison was carried out by estimating a latter model with constrained latent means. This model showed no statistically significant differences between the chi squares and an improvement in the CFI of 0.015 when compared to the configural model and 0.004 when compared to the scalar model, and a decrease of 0.002 when compared to the metric model. The model with constrained latent means was retained as the best representation of the data because it was the most parsimonious one and showed excellent fit. Unstandardized and standardized factor loadings and intercepts in the retained model are presented in Table 3.

Regarding reliability, the new version showed good estimates of Cronbach's alpha (0.854) and CRI (0.870).

Finally, correlations among the new short version, the original one, and the dimensions of the ProQOL were calculated. Both in Spanish and Argentinian professionals, the new scale showed appropriate evidence of validity based on relations with other measures, with high correlations with the original scale (above 0.90 in each sample), and with statistically significant but

*Table 2*
**Confirmatory Factor Analyses and Set of Nested Models to Test for Measurement Invariance**

| Model | $\chi^2$ | df | *P* | CFI | TLI | RMSEA | RMSEA IC | SRMR | $\Delta\chi^2$ | Δdf | *P* | ΔCFI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CFA in Spain | 107.043 | 27 | <0.001 | 0.978 | 0.970 | 0.093 | 0.075, 0.112 | 0.030 | — | — | — | — |
| CFA in Argentina | 102.982 | 27 | <0.001 | 0.963 | 0.950 | 0.106 | 0.085, 0.128 | 0.041 | — | — | — | — |
| Configural invariance | 209.348 | 54 | <0.001 | 0.972 | 0.963 | 0.099 | 0.085, 0.113 | 0.035 | — | — | — | — |
| Metric invariance | 123.181 | 63 | <0.001 | 0.989 | 0.988 | 0.057 | 0.042, 0.072 | 0.040 | 10.747 | 9 | 0.294 | 0.017 |
| Scalar invariance | 213.402 | 116 | <0.001 | 0.983 | 0.989 | 0.053 | 0.042, 0.064 | 0.044 | 92.819 | 62 | 0.003 | 0.011 |
| Constrained latent means | 191.738 | 117 | <0.001 | 0.987 | 0.992 | 0.046 | 0.034, 0.058 | 0.043 | 89.108 | 63 | 0.017 | 0.015 |

CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; RMSEA IC = RMSEA 90% confidence interval; SRMR = Standardized Root Mean Square Residual; CFA = confirmatory factor analysis.

*Table 3*
**Items' Descriptive Statistics, Unstandardized and Standardized Factor Loadings, and Intercepts' Thresholds for the Short Version of Bugen's Coping With Death Scale**

| | Spanish Sample | | Argentinian Sample | | Factor Loadings | | | Intercepts Thresholds | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | M | SD | M | SD | UN | ST Spanish Sample | ST Argentinian Sample | $\nu_1$ | $\nu_2$ | $\nu_3$ | $\nu_4$ | $\nu_5$ | $\nu_6$ |
| 1 | 5.66 | 1.31 | 5.65 | 1.55 | 0.73 | 0.59 | 0.59 | −2.66 | −2.03 | −1.62 | −1.19 | −0.47 | 0.52 |
| 2 | 4.39 | 1.67 | 4.15 | 1.77 | 0.52 | 0.46 | 0.46 | −1.69 | −0.95 | −0.54 | −0.01 | 0.61 | 1.57 |
| 3 | 5.56 | 1.35 | 5.40 | 1.59 | 0.79 | 0.62 | 0.62 | −2.41 | −2.11 | −1.69 | −0.92 | −0.36 | 0.72 |
| 4 | 6.18 | 1.34 | 5.95 | 1.57 | 0.77 | 0.61 | 0.61 | −2.21 | −2.06 | −1.98 | −1.48 | −1.06 | −0.18 |
| 5 | 5.10 | 1.36 | 4.87 | 1.56 | 0.71 | 0.58 | 0.58 | −2.45 | −1.76 | −1.37 | −0.47 | 0.16 | 1.34 |
| 6 | 6.13 | 1.00 | 6.15 | 1.23 | 1.20 | 0.77 | 78 | −3.58 | −3.06 | −2.81 | −2.39 | −1.45 | 0.20 |
| 7 | 5.94 | 1.13 | 6.13 | 1.21 | 1.95 | 0.89 | 0.89 | −5.08 | −4.10 | −3.20 | −3.03 | −1.75 | .055 |
| 8 | 6.03 | 1.23 | 5.92 | 1.46 | 1.48 | 0.83 | 0.83 | −0.367 | −3.20 | −2.77 | −2.05 | −1.30 | 0.17 |
| 9 | 5.76 | 1.13 | 5.80 | 1.26 | 1.48 | 0.83 | 0.82 | −4.13 | −3.32 | −3.16 | −2.08 | −0.87 | 0.96 |

M = mean; UN = unstandardized estimates (constrained to equality across samples); ST = standardized estimates.
All factor loadings were statistically significant ($P < 0.001$).

moderate correlations with the dimensions of professionals' quality of life (with absolute values ranging from 0.33 to 0.41), and similar validity to the long version (whose absolute values ranged from 0.31 to 0.45). More information can be found in Table 4.

## Discussion

The short version of Bugen's Coping with Death Scale presented here is a brief questionnaire composed of nine of the original items. This nine-item version was tested in two representative samples of palliative care professionals from Spain and Argentina. Results about its factorial validity, invariance measurement across the two countries, reliability, and validity based on relations with other measures will guide the discussion.

With regard to the factorial validity, the evidence gathered indicated the adequacy of a one-dimensional structure of the scale. The structure tested maintained the original approach proposed by Bugen,[16] but using only nine items to assess the competence instead of 30. This result is consistent with recent findings in the Spanish context.[6,25] The chosen items contain all the facets of coping with death, including items on the knowledge of the process of death and dying (i.e., "I am aware of the full array of emotions which characterize human grief"), practical implications of death and dying in the health care context (i.e., "I know who to contact when death occurs"), and the professionals' own death (i.e., "I feel prepared to face my dying process").

*Table 4*
**Correlations Among the Short Version of Bugen's Coping With Death Scale, the Original One, and the Dimensions of the ProQOL**

| | Spanish Sample | | Argentinian Sample | |
|---|---|---|---|---|
| | Short Version | Long Version | Short Version | Long Version |
| Original CDS | 0.93 | — | 0.92 | — |
| Compassion satisfaction | 0.41 | 0.45 | 0.39 | 0.42 |
| Burnout syndrome | −0.36 | −0.36 | −0.33 | −0.38 |
| Compassion fatigue | −0.33 | −0.33 | −0.36 | −0.38 |

ProQOL = Professional Quality of Life Scale; CDS = Coping with Death Scale.
All the correlations were statistically significant ($P < 0.001$).

Our second step was to test whether the scale was invariant across the Spanish and Argentinian samples. Measurement invariance is a core issue in making group comparisons when groups are understood as different populations (e.g., different countries).[35] The results of the invariance routine performed provided evidence of the scalar invariance of this short version of Bugen's scale, and therefore, it pointed out the absence of measurement bias when groups are compared. The last step in the invariance process when scalar invariance holds, as in this research, is latent means comparison. When this last step was carried out, the model fit did not significantly decrease, and thus, we can say that our evidence revealed that the coping with death means were not different in the two samples. That is, according to our results, Spanish and Argentinian professionals show the same levels of coping with death competence. Although in these two countries the levels of development of palliative care (number of resources per million inhabitants or degree of public coverage) are not comparable,[36–38] the degree of training and clinical experience of professionals and their maturity in facing death are quite similar. Argentina, although coming from a quite different health care system, is one of the few American countries where hospice and palliative care is widely provided throughout the country.[37,38] Both Spain and Argentina have made major efforts in developing palliative professionals' inner curricula during the past decade. In fact, both countries have national associations of palliative care professionals that have encouraged specific training, offering courses and guidelines to cope with patients' and families' needs, including coping.[39,40]

Argentina could be partially understood by its major efforts in developing palliative care. In addition, the Argentinean palliative system has encouraged specific training due to the role played by *Pallium Latinoamérica*.[40] If we focus on Latin America, clear differences arise in palliative care contexts. Argentinian palliative institutions emerged in the early 1980s, whereas in Brazil, they did so in the late 1990s, and its main association (ANCP) was created in 2005.[38] Chile, Costa Rica, Argentina, and Uruguay pioneered the palliative care in this area; Brazil (and other countries such as Colombia, Mexico, and Paraguay) has a medium state of development, and countries such as Honduras, Nicaragua, or Bolivia show the most delay in this development.

Finally, this study offered evidence of reliability and validity based on relations with other measures, with appropriate estimates for the new short version of the CDS. Indeed, our results revealed not only a relationship between coping with death, measured by the short version of Bugen's scale, and measures of professionals' quality of life found in previous literature,[9] but also an almost identical amount as the original long version of the scale.

Compared to the original, longer version of the scale, this short version offers evidence of adequate validity of all its items (with statistically significant factor loadings) in two different samples of professionals. In fact, the CFA models' fits were better than the ones obtained with the long version of the scale in previous research.[25] In addition, the Coping with Death Scale short version has offered evidence of measurement invariance across two different countries, which has not been tested with the original scale. Reliability estimates of the short scale are also adequate, despite reducing the original length of the scale by more than two-thirds.

However, the study has some limitations. For instance, levels of competence in coping with death were high, and variability in the responses was low. This could affect the generalization of the results to populations with other characteristics. Other issues that could be addressed in future research include using different groups to test measurement invariance of the CDS short version. For instance, measurement invariance could be tested using another variable to group the participants, such as gender or type of profession.

In summary, it can be concluded that the short version of the CDS is a brief, robust measure of palliative care professionals' coping with death competence. Although the length has been reduced to less than one-third of the original, the psychometric properties in terms of factorial validity and reliability have improved, the predictive power is maintained, and its invariance across countries has been successfully tested for the first time. This new version could be very useful for intervention and educational purposes and also for longer surveys aimed at capturing a bigger picture of palliative care professionals' work.

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