Revista Bioética
Print version ISSN 1983-8042 | On-line version ISSN 1983-8034

Rev. Bioét. vol.31 Brasília 2023

Brazilian psychometrics of the Collett-Lester fear of death scale

Ana Maria Garcia Andrade [1], *José Vitor da Silva* [2], *Makilim Nunes Baptista* [2]

1. Universidade do Vale do Sapucaí, Pouso Alegre/MG, Brasil. **2.** Universidade de São Paulo, São Paulo/SP, Brasil.

Abstract

Methodological study conducted with 279 individuals to evaluate the reliability of the Collett-Lester fear of death scale and relate it to the spiritual well-being scale. Its multifactorial structure was confirmed by four dimensions and 24 items. Internal consistency obtained Cronbach's α of 0.951. Pearson's correlation (r=0.87 and *p*=0.000) confirmed stability. Collett-Lester fear of death scale showed positive correlation with three of the four spiritual well-being scale items, ranging from weak to moderate magnitudes. The Collett-Lester fear of death scale proved to be reliable for the Brazilian reality.

Keywords: Bioethics. Death. Psychometry.

Resumo

Psicometria brasileira da escala do medo da morte de Collett-Lester

Estudo metodológico para avaliar a confiabilidade da escala de medo da morte de Collett-Lester e relacioná-la com a escala de bem-estar espiritual em amostra de 279 pessoas. A estrutura multifatorial da escala foi confirmada por quatro dimensões e 24 itens. A consistência interna obteve α de Cronbach: 0,951. A estabilidade foi confirmada pela correlação de Pearson (r=0,87 e *p*=0,000). A correlação escala de medo da morte de Collett-Lester ocorreu com três dos quatro fatores da escala de bem-estar espiritual, sendo positiva e variando de magnitudes fracas a moderadas. A escala de medo da morte de Collett-Lester se mostrou confiável à realidade brasileira.

Palavras-chave: Bioética. Morte. Psicometria.

Resumen

Psicometría brasileña de la escala de miedo a la muerte de Collett-Lester

Estudio metodológico que evalúa la confiabilidad de la escala de miedo a la muerte de Collett-Lester y la relaciona con la escala de bienestar espiritual en una muestra de 279 personas. La estructura multifactorial de la escala se confirmó en cuatro elementos y 24 ítems. La consistencia interna obtuvo el α de Cronbach de 0,951. La estabilidad se confirmó mediante la correlación de Pearson (r=0,87 y *p*=0,000). La correlación de la escala de miedo a la muerte de Collett-Lester ocurrió con tres de los cuatro factores de la escala de bienestar espiritual, siendo positiva y variando de magnitudes bajas a moderadas. La escala de miedo a la muerte de Collett-Lester es confiable al contexto brasileño.

Palabras clave: Bioética. Muerte. Psicometría.

Research

The authors declare no conflict of interest.

Death and birth are phenomena inherent to life and constitute natural events of human existence. Although cultural and religious beliefs help shape attitudes towards death, some people find it difficult to face and cope with end of life [1,2].

Reflections on the meaning of life, the existence of the soul and the possibility of life after death are beliefs that guide human behavior when faced with the reality of death. Such behavior can be perceived and defined through different perspectives, either positive or negative. Positive behavior is related to acceptance of death, while negative behavior indicates fear and avoidance of death. Fear of death is characterized by the dread that this possibility stirs in individuals, while avoidance is defined by doing everything possible not to think or talk about the subject [2].

This situation is closely linked to the fear of the unknown expressed in the conception of the finitude of life, which causes great fear and denial. Present in all beliefs, values and cultures, death is one of the greatest enigmas to inhabit human thought [3].

The population in general views death views death with detachment and restrictions and considers it a despicable phenomenon. In this setting, the words death and dying are often associated with feelings of pain, separation and loss. Therefore, contemporary society tends to avoid this topic, making it extremely dreadful taboo during life [4].

With advances in medical science, death became a more predictable and expected event, and mortality rates started to be controlled by medicine. Healthcare providers, especially physicians, were given the ability, through technological advances in science, to reduce mortality rates and, consequently, the responsibility for prolonging life. Death ceases to be a natural event and part of existence to be the result of pathological changes resulting from serious illnesses. The moment that marks the end of life, in some cases, results in the replacement of the family environment by the hospital, where individuals start to be cared for by therapists and health teams [3].

Fear of death is universal and relates to the instinct to preserve life. It is important for encouraging individuals to defend their existence, fighting or fleeing when attacked, and to avoid situations that might jeopardize their survival. Fear of death can also make people adopt behaviors to preserve their health and, consequently, their life as long as possible. However, under certain circumstances, this can become pathological, inhibiting one's actions and making it impossible to enjoy life [5].

Humans are the only living beings that are aware of their mortality [6], even if their unconscious does not accept it. There comes a time when humans are able to understand their finitude [7]. Fear related to the phenomenon of death is closely linked to such awareness [8].

There are two great fears that humans face when their final moments are close: fear of the physical pain that precedes death and of that pain at the moment of death, and fear of loneliness and abandonment, of dying with no one by one's side. In addition, other fears pervade those moments: fear of ceasing to do the things they currently do in life, fear of what their existence will be like after the dreaded death, fear of what will happen to family and friends, fear of not having enjoyed all of life's experiences before dying [9].

Fear of death may be due to several factors, such as lack of knowledge about what happens after death, uncertainty about how one will leave life, attachment to material goods and human expectation of having a long life [10].

Humans are immersed in the fear of death. The very cycle of life leads humans to fear it. The way death is talked about throughout human life reveals, implicitly or explicitly, the fear of this outcome, which has two aspects. One is the fear of the death of others. People may be afraid that other people will die. Second, based or not on this first experience or contact, people start to fear their own death [11].

In this sense, the Collett-Lester Fear of Death Scale (CL-FODS) was developed in the United States and initially published in the *Journal of Psychology* by the Suicide Prevention and Crisis Service in 1969. However, it was only formally

published almost three decades later, after being reviewed by one of its authors. This scale was designed in an attempt to resolve the problem of heterogeneity of item content observed in other scales aimed at measuring fear of death that had already been developed at the time. The scale produced by those authors does not include items related to funerals and cemeteries [12].

In designing CL-FODS, Collett and Lester made a distinction between death and dying and between behavior in coping with one's own death and that of others. This multidimensional way of evaluating the phenomenon of death gave rise to four subscales:

1. Fear of death of self: this concerns anxiety about one's own finitude, the end as an outcome, ceasing to exist;
2. Fear of dying of self: this is anxiety about a process of suffering that leads to death, which may be associated with some prolonged illness, a slow and painful death;
3. Fear of death of others: this concerns feelings of being faced with the possibility of the death of loved ones, generally associated with coping with separation; and
4. Fear of dying of others: this concerns feelings of being faced with the possibility of painful illness and slow death of loved ones [12-14].

The original CL-FODS had 36 items: nine related to fear of death of self, ten related to fear of death of others, six related to fear of dying of self and 11 related to fear of dying of others. As the factors grouped the items in different ways, this hindered their use in investigations and in writing articles. Some items were formulated in a positive way and others in a negative way. In the original scale, the items were formulated in the first person. The idea of creating a scale divided by factors stems from the possibility of mirroring the multidimensional nature of feelings about death. Although the scale was recently published, it had already been widely used in several studies by direct request to the authors. Results were found regarding its validity and guarantee, as well as its suitability and usefulness in the context of measuring the fear of death construct [13,14].

Since many difficulties were identified in the original scale in its use in both research works and writing and analyzing results, Lester proposed a reformulation of the instrument to make the number of items in the four subscales homogeneous (eight items each). He designed a sequential presentation of the items related to each scale instead of interleaving items from several different scales. Thus, Lester eliminated some items from the original scale, created new ones and significantly changed their order of presentation and formulation (from first to third person) [12].

The scale was then fully concluded, reviewed and published, containing 32 items. The psychometric analysis of the scale was carried out through studies that verified it test-retest reliability, internal consistency, factor analysis and correlations. Although the psychometric analysis shown by those studies was not very solid, Lester concluded that the review achieved reasonable levels of evidence of validity, reliability and usefulness for researchers in the field [14]. In 2003, items for each factor that did not contribute to the significance of Cronbach's α coefficient were eliminated, resulting in a final version with 28 items, which is still used today [15].

CL-FODS has been widely validated in several countries and continents. Previous studies are considered parameters for new research. Chart 1 shows the comparison between CL-FODS validation studies regarding psychometric assessment.

This research aimed to evaluate the psychometric properties of CL-FODS in a version adapted to Brazilian Portuguese, with evidence of validity of the internal structure of CL-FODS through exploratory factor analysis, testing of its reliability and relation between the Spiritual Well-Being Scale (SWBS) and CL-FODS.

Chart 1. Comparison of factor analysis, internal consistency and correlation of CL-FODS in different countries.

Authors	Country	Factor analysis	Internal consistency (Orion)	Internal consistency (Cronbach's α)	Correlation
Mooney, O'Gorman; 2001 [16]	Australia	Five factors	Not performed	α=0.93	Multidimensional fear of death scale $p<0.05$
Tomás-Sábado, Limonero, Abdel-Khalek; 2007 [17]	Spain	Four factors	Not performed	α=0.92	Kuwait University anxiety scale; Death anxiety inventory $p<0.001$
Kolawole, Olusegun; 2008 [18]	Nigeria	Three factors	Not performed	α=0.91	Not performed
Naderi, Esmaili; 2009 [19]	Iran	Four factors	Not performed	α=0.89	Not performed
Espinoza Venegas, Sanhueza Alvarado, Barriga; 2011 [20]	Chile	Five factors	Not performed	α=0.91	Behavior towards death scale $p<0.001$
Buccella Sifontes, Moreira, Fernández Urrea; 2012 [21]	Venezuela	Not performed	Not performed	α=0.89	Not performed
Quintero, Simkin; 2017 [22]	Argentina	Two factors	Not performed	α=0.73	Not performed
Bužgová, Janíková; 2019 [23]	Czech Republic	Four factors	Not performed	α=0.914	Not performed

CL-FODS: *Collett-Lester fear of death scale*

Method

This is a methodological, descriptive and analytical study with a quantitative approach. The participants were residents of Pouso Alegre/MG, with different levels of schooling, from different social classes and living in both urban and rural areas. The sample consisted of 279 participants, with a mean age of 40.75 years (SD=15.45), most of whom were women (67.7%).

The number of participants in this study was calculated to obtain stable factor solutions. To this end, the item/subject ratio criterion was used. To establish the sample size, a minimum of five participants must be used for each item [24]. Therefore, for this study, 9.95 respondents were used, considering the sample size mentioned above. Sampling was non-probabilistic, by convenience or accidental.

To obtain a sample with greater credibility, a pre-test was carried out to verify possible questions about the CL-FODS items and identify biases. For a heterogeneous and diversified sample, the following social segments were generally selected for the study's participants: patients who were waiting for medical care at the primary health center; residents in urban and rural neighborhoods; healthcare providers from the municipal health system; professors of a master's program in bioethics; medical, nursing and physical therapy students; leaders of Catholic and evangelical churches; high school teachers; homeless persons that frequented a drop-in center. The participants had no questions about or difficulties regarding the items of the instruments adopted.

The self-completion technique was used with participants with complete and incomplete higher education. With the others,

hetero-completion of the instruments was adopted. Inclusion criteria were: people of both genders, aged 18 or over, with preserved cognitive and communication skills (confirmed by administration of a sociodemographic and health characterization instrument).

Exclusion criteria consisted of: people who had recently experienced mourning; people who refused to answer all or part of the instruments, as well as questions and instrument items; and individuals who resided in long-term care (LTC) facilities for older adults and were hospitalized.

CL-FODS, cross-culturally adapted to Brazilian Portuguese and known as EMMCL, comprises four factors with seven items each, consisting of a multidimensional scale. The factors are: 1) fear of death of self; 2) fear of dying of self; 3) fear of death of others; and 4) fear of dying of others. The answers are Likert-type and range from 1 (not) to 5 (very). Each item is composed of five levels of fear intensity, ranging from 1 (not) to 5 (very), and only one response should be marked in each item. Scores are obtained for the total scale and for each factor by averaging responses. Higher mean scores indicate greater fear of death or dying and vice versa. This scale has been used and validated in several areas of research and adapted for use in other languages and countries [25].

The original scale does not present factor analysis data related to minimum factor loading and total variance. Regarding reliability, Cronbach's α test was used to establish internal consistency, presenting the following data in the original scale: factor 1: fear of death of self (Cronbach's α=91); factor 2: fear of dying of self (Cronbach's α=89); factor 3: fear of death of others (Cronbach's α=72); and factor 4: fear of dying of others (Cronbach's α=87).

SWBS is one of the pioneering scales related to spirituality and religiosity. Spiritual well-being is understood as a feeling of well-being experienced when one finds a purpose in life, which involves an ultimate meaning for existence. This feeling is a synthesis of health, a feeling of wholeness and satisfaction with life, of peace with oneself and with the world.

To design this scale, the authors drew on studies that indicated a vertical and a horizontal dimension for spiritual well-being, which became the two factors measured by the scale: religious well-being—the analysis of the vertical dimension, of satisfaction in the personal connection with God or something considered transcendent—and existential well-being—the analysis of the horizontal dimension, related to the perception of a purpose in life, regardless of being religious or not.

This scale was influenced by the trend to assess quality of life in the United States, where there was a movement at the time to measure this aspect through objective social indicators. Gradually, it was acknowledged that objective measures were insufficient to understand the complexity of the construct [26].

The psychometric properties in Brazil were evidenced by factor analysis and the two-factor solution was the most adequate, explaining 47.97% of total variance. The 20 items on the scale had factor loadings above 0.38 in both factors. The internal consistency of the factors calculated by Cronbach's alpha was 0.92 for religious well-being, 0.85 for spiritual well-being and 0.92 for the total scale.

This instrument was chosen for this study due to the impossibility of validating the convergent-type construct, considering the hitherto lack of valid and reliable instruments on the subject of death in Brazil.

The pre-test serves to evaluate the data collection instrument from the point of view of its comprehensibility and check the ambiguity of the questions and the duration of the interview. It involved interviews with 28 residents of Pouso Alegre/MG, Brazil, which corresponded to 10% of the total sample size. The participants fitted the inclusion and exclusion criteria for the total sample.

Initially, confirmatory factor analysis (CFA) was run by the Jasp Team to analyze whether the original CL-FODS structure would generate adequate fit indices, which did not occur (comparative fit index—CFI-0.868; Tucker-Lewis index—TLI=0.849; root mean square error of approximation—RMSEA=0.081). Therefore, to study the internal structure of CL-FODS, exploratory factor analysis (EFA) was performed, using the robust unweighted least square (RULS) extraction method, with Varimax rotation and

polychoric correlations, forcing four factors, procedures appropriate to the ordinal level of measurement, through the Factor program [27].

In addition, Spearman's correlation index was used to establish the correlation between CL-FODS and SWBS. For the reliability of the scale from the point of view of internal consistency, Cronbach's alpha and Orion were used. Pearson's correlation index was used for test and retest (stability), when the correlation between the first and second administration of CL-FODS was performed (after 15 days of administration).

The precepts provided by Resolution 466/2012 [28] of the Brazilian National Health Council were observed. The participants signed an informed consent.

Results

For EFA, Kaiser-Meyer-Olkin (KMO) was 0.915 and the Barlett sphericity test×2=4026.2 (df=276; *p*=0.000010). The explained variance for the four factors was 73.34% and the fit indices were also adequate, namely: unidimensional congruence (uniCo)=0.943 (which portrays that the data are not unidimensional); RMSEA=0.000 (values below 0.01 are excellent); CFI=1.0 (values above 0.990 are excellent).

The rotation matrix shown in Table 1 illustrates the result obtained after performing the exploratory factor analysis using the Factor 10 program.

Table 1. Rotation matrix generated by the Factor 10 program of the responses to the variables of CL-FODS after performing the rotation matrix, 2019 (n=279)

Variable	Factor 3	Factor 4	Factor 2	Factor 1	Communalities
1. The loneliness caused by your death	-0.220	0.262	0.226	0.632	0.675
2. The shortness of life	0.120	-0.028	-0.050	0.933	0.890
3. Missing out on so much after you die	0.132	-0.090	0.210	0.550	0.533
4. Dying young	0.075	0.046	-0.016	0.761	0.644
5. How it will feel to be dead	-0.328	0.131	0.629	0.301	0.598
7. The disintegration of your body after you die	-0.235	0.020	0.880	0.078	0.702
8. The physical degeneration involved	-0.189	-0.037	0.929	-0.036	0.658
9. The pain involved in dying	0.016	0.022	0.720	0.083	0.630
10. The intellectual degeneration of old age	0.247	-0.065	0.565	-0.047	0.437
11. That your abilities will be limited as you lay dying	0.144	0.035	0.660	0.040	0.627
12. The uncertainty as to how bravely you will face the process of dying	0.076	0.004	0.897	-0.147	0.735
13. Your lack of control over the process of dying	0.194	-0.102	0.763	-0.008	0.675
14. The possibility of dying in a hospital, far from family and friends	0.265	0.016	0.704	-0.207	0.597
15. Losing someone close to you	0.714	0.220	-0.004	-0.082	0.720
17. Never being able to communicate with the person again	0.638	0.172	-0.103	0.170	0.624
18. Regret over not being nicer to the person when he or she was alive	0.826	0.040	-0.082	0.070	0.707
19. Growing old alone, without the person	0.697	0.067	0.248	-0.115	0.726

continues...

Table 1. Continuation

Variable	Factor 3	Factor 4	Factor 2	Factor 1	Communalities
21. Feeling lonely without the person	0.618	0.174	0.034	0.043	0.619
22. Having to be with someone who is dying	-0.143	0.914	0.058	0.043	0.619
23. Having the person want to talk about death with you	-0.119	0.945	0.003	0.033	0.748
24. Watching the person suffer from pain	0.176	0.826	-0.183	0.045	0.774
25. Seeing the physical degeneration of the person's body	-0.181	0.831	0.128	0.066	0.792
26. Not knowing what to do about your grief at losing the person when you are with him or her	0.140	0.756	0.148	-0.145	0.653
27. Watching the degeneration of the person's mental abilities	0.278	0.793	-0.132	-0.092	0.077

Source: CL-FODS [12]

EMMCL: Collett-Lester fear of death scale; F1: death of self; F2: fear of dying of self; F3: fear of death of others; F4: fear of dying of others

The existence of four CL-FODS factors is possible, in which are grouped 24 items from the original scale. The original scale had 28 items; however, in the factoring process, four items were excluded because they were not grouped in any factor, in addition to presenting below 0.5 factor loading, the value established by the current research. The four excluded items were (items 6, 16, 20 and 28): "Never thinking or experiencing anything again," "having to see the dead person's body," "feeling guilty that you are relieved that the person is dead" and "being reminded that you are going to go through the experience also one day."

The first factor, called "death of self," was composed of four items, with factor loadings between 0.550 and 0.933. This dimension aims to assess how much the interviewee feels uncomfortable with feelings related to their own death experience: "The loneliness caused by your death", "the shortness of life," "missing out on so much after you die" and "dying young."

The second factor, called "fear of dying of self," grouped nine items, with factor loadings between 0.565 and 0.929. This dimension evaluates the feelings of anxiety generated in interviewees when they think about the process they will experience until their terminality: "how it will feel to be dead," "the disintegration of your body after you die," "the physical degeneration involved," "the pain involved in dying," "the intellectual degeneration of old age," "that your abilities will be limited as you lay dying," "the uncertainty as to how bravely you will face the process of dying," "your lack of control over the process of dying" and "the possibility of dying in a hospital, away from family and friends."

The third dimension, "fear of death of others," grouped five items with factor loadings between 0.618 and 0.826 and concerns the anxiety generated in the interviewees when asked about how they feel when thinking about the death of close loved ones. The grouped items were: "losing someone close to you," "never being able to communicate with the person again," "regret over not being nicer with the person while he or she was alive," "growing old alone without the person" and "feeling lonely without the person."

The fourth and last dimension, "fear of dying of others," comprised six items with factor loadings between 0.756 and 0.945 and assesses the anxieties that arise when the interviewees think about how they will face the process leading to the close person's death. The items that are part of this factor are: "having to be with someone who is dying," "having the person want to talk about death with you," "watching the person suffer from pain," "seeing the physical

Research

degeneration of the person's body," "not knowing what to do about your grief at losing the person when you are with him or her" and "watching the deterioration of the person's mental abilities."

From the results obtained by exploratory factor analysis, the multifactorial or multidimensional structure of CL-FODS can be confirmed. The four CL-FODS factors showed weak to moderate Pearson correlations, that is, F1×F2=0.619; F1×F3=0.391; F1×F4=0.344; F2×F3=0.526; and F3×F4=0.691, with statistical significance (p<0.005).

Reliability

Internal consistency and stability

Reliability was analyzed using two different criteria: scale stability (test-retest) and internal consistency or accuracy. From the total sample of 279 participants, 30 respondents were randomly selected and invited to take the retest (re-administration of CL-FODS) after a 15-day interval. The mean of the results in the first administration was correlated with the mean of the results of the second evaluation, and then Pearson's correlation coefficient was calculated, the result of which was r=0.87 (p=0.000).

Internal consistency was determined using the following procedures: Cronbach's α and Orion index. The results of these procedures are shown in Chart 2.

Chart 2. Orion (general reliability of fully informative anterior oblique N-EAP scores) and Cronbach's α values for CL-FODS and their respective factors (n=279) (Pouso Alegre/MG)

Total scale and its factors	Cronbach's α	Orion
Total scale	0.951	0.951
Factor 1	0.919	0.919
Factor 2	0.954	0.954
Factor 3	0.945	0.945
Factor 4	0.928	0.928

Source: CL-FODS [12]

N-EAP: expected a posteriori score; CL-FODS: Collett-Lester Fear of Death Scale; F1: death of self; F2: fear of dying of self; F3: fear of death of others; F4: fear of dying of others. For this type of investigation, precision rates from 0.70 are acceptable [15]

Correlation between the spiritual well-being scale and the Collett-Lester fear of death scale

When relating CL-FODS and SWBS, r (relationship) of weak, medium and strong magnitude, significant p (probability) (≤0.05) and non-significant p (>0.05) were found. SWBS is significantly correlated with the factors "death of self" (p=0.004), "death of others" (p=0.035) and "dying of others" (p=0.046), which correspond to factors 1, 3 and 4. It also shows a significant correlation with the total scale (p=0.000). There was no significant relationship between factor 2 of CL-FODS and SWBS. These values can be found in Chart 3.

Chart 3. Correlation values of CL-FODS and SWBS factors

Correlation	*r*	*p*
Factor 1×SWBS	0.10	0.004
Factor 2× SWBS	0.97	0.347
Factor 3× SWBS	0.36	0.035
Factor 4× SWBS	0.59	0.046
Total factor× SWBS	0.61	0.000

Source: CL-FODS [12]

CL-FODS: Collett-Lester Fear of Death Scale; SWBS: spiritual well-being scale; F1: death of self; F2: fear of dying of self; F3: fear of death of others; F4: fear of dying of others

Discussion

After carrying out the psychometric analyses of CL-FODS, it was evident that the data obtained are valid and reliable for the Brazilian reality. The evaluation of the internal structure of CL-FODS was performed through exploratory factor analysis, using the RULS extraction method, with Varimax rotation and polychoric correlations. It is important to mention that the parallel analysis demonstrated the existence of only two factors; however, the original four-factor model was chosen.

The scale obtained through this study comprised 24 items in its final version, unlike the original scale, which has 28 items after its

reformulation. The items excluded from the original scale were 6, 16, 20 and 28. The scale in the Brazilian version also grouped the items differently in each factor, varying the number of items for each one, whereas in the original scale each factor contains seven items, totaling 28 [12].

It is relevant to mention that studies in different countries found different factor compositions. Research in Barcelona, Spain [17], in Iran [19] and the validation done in the Czech Republic [23] preserved the four factors. Analyses by Quintero and Simkin, carried out in Argentina, grouped the items into two factors after exploratory factor analysis [22]. Grouping into five distinct factors was found in studies done in Chile [20] and Australia [16]. The validation carried out by researchers in Nigeria resulted in three acceptable congruent factors [18].

Regarding reliability assessment from the point of view of internal consistency, analyses were performed by checking the accuracy index by Orion and Cronbach's α, both with similar values. Values close to α were found in other studies, such as the validation carried out in the Czech Republic, where α=0.914 was found [23]; in Argentina, α=0.73 [22]; in Venezuela, α=0.89 [21]; in Chile, α=0.91 [20]; in Iran, α=0.89 [19]; in Nigeria, α=0.91 [18]; in Spain, α=0.92 [17]; and in Australia, α=0.93 [16]. All these Cronbach's α values above 0.70 reinforce the internal consistency of this scale in different countries where CL-FODS has already been validated.

In this study, Cronbach's α was also calculated for each scale factor and the results found are also similar to those recorded in the total scale. The α of factor 1, in this study, was 0.919 (in the original scale it was 0.89). For factor 2, in this validation, α=0.954 was obtained (whereas in the original scale this value was 0.92). In factor 3, this research indicated α=0.945 (whereas in the original scale this value was 0.78). Lastly, in factor 4, this study reached an α value of 0.928 (whereas in the original scale this value was 0.92) [15].

The stability of the scale was confirmed by test-retest, which provides a calculation of the coefficient of precision between the scores of the same subject, in the same test, but on two different occasions. In this study, this coefficient reached, according to the Pearson correlation, r=0.87, for p=0.000, which shows that the close results between the first and second administration of CL-FODS reveals a high and positive correlation, evidencing the stability of the scale in question. This correlation was also identified in another validation carried out in Venezuela [21], where r=0.716, and in the Australian study [16], where r=0.82.

With regard to the evidence of validity related to external variables, SWBS was positively and significantly correlated with the factors "death of self," "death of others" and "dying of others." This indicates that spirituality has a significant relationship with people's own death and with the death and dying of others, that is, the greater the spirituality, the greater the fear of death. No studies were found that correlated these two variables.

However, Pessini [29] argues that even the most spiritual people, according to that author's priestly experience, have great fear of death, especially when it is close due to serious illness. He also notes that the possible cause, according to his inference, is lack of knowledge of what will happen. However, the association between these two subjects lacks studies and confirmation. No studies were identified correlating CL-FODS with another spirituality scale.

The structural or factorial validity of CL-FODS was sustained with 24 items in four factors, partially different from the items that composed the factors of the original scale. Reliability under the aspect of internal consistency showed that the scale is consistent and accurate. Its items measure the same phenomenon: the fear of death. Regarding stability, the pre-test showed the maintenance of very close values in the two different administrations of the referred scale. Stability shows that the scale in question, regardless of time, is relatively stable in its measurement.

In the correlation between SWBS and CL-FODS, the presence of correlation between SWBS and three CL-FODS factors was identified, as well as its relationship with the total scale. This shows that the fear of death construct is also related to other phenomena of its nature.

Conclusions

Finitude of life has been an object of study in recent decades, despite being a subject that is still poorly explored and not very comfortable to discuss. One example of this statement is the design of CL-FODS. This instrument has drawn attention in several countries, especially Brazil. The tool, validated for the Brazilian reality, will have two impacts:

1. Availability to the scientific community in relation to research and provision of care;
2. Possibility of expanding and acquiring new knowledge about the phenomena of death and dying.

Further validation and reliability studies of this scale are recommended, as they will make it more robust from a structural and reliability point of view. However, as in all psychometric instrument validation processes, further research should continue to demonstrate evidence of validity of CL-FODS, either with larger samples or with other methods. Each new use of the instrument, regardless of the context, represents progress towards improving the theoretical value of the concept under study, that is, fear of death.

Lastly, considering that hitherto there was no fear of death assessment scale in Portuguese, it is intended that the available Brazilian version of CL-FODS stimulate the development of future research on the subject. In view of the growing interest among researchers in this subject, it is expected that further studies on death and dying emerge as a result of future analyses.

References

1. Silveira LC, Brito MB, Portella SDC. Os sentimentos gerados nos(as) profissionais enfermeiros(as) diante o processo morte/morrer do paciente. Revista Enfermagem Contemporânea [Internet]. 2013 [acesso 14 fev 2023];4(2):152-69. DOI: 10.17267/2317-3378rec.v4i2.256
2. Souza MCS, Sousa JM, Lago DMSK, Borges MS, Ribeiro LM, Guilherm DB. Avaliação do perfil de atitudes acerca da morte: estudo com graduandos da área de saúde. Texto Contexto Enferm [Internet]. 2017 [acesso 14 fev 2023];26(4):e3640016. DOI: 10.1590/0104-07072017003640016
3. Praxedes AM, Araújo JL, Nascimento EGC. A morte e o morrer no processo de formação do enfermeiro. Psicol Saúde Doenças [Internet]. 2018 [acesso 14 fev 2023];19(2):369-76. DOI: 10.15309/18psd190216
4. Perboni JS, Zilli F, Oliveira SG. Profissionais de saúde e o processo de morte e morrer dos pacientes: uma revisão integrativa. Pers Bioét [Internet]. 2018 [acesso 14 fev 2023];22(2):288-302. DOI: 10.5294/pebi.2018.22.2.7
5. Salomé GM, Cavali A, Espósito VHC. Sala de emergência: o cotidiano das vivências com a morte e o morrer pelos profissionais de saúde. Rev Bras Enferm [Internet]. 2009 [acesso 14 fev 2023];62(5):681-6. DOI: 10.1590/S0034-71672009000500005
6. Sherman DW, Norman R, McSherry CB. A comparison of death anxiety and quality of life of patients with advanced cancer or AIDS and their family caregivers. J Assoc Nurses AIDS Care [Internet]. 2010 [acesso 14 fev 2023];21(2):99-112. DOI: 10.1016/j.jana.2009.07.007
7. Kübler-Ross E. On death and dying. London: Routledge; 1973.
8. Solomon S, Greenberg J, Pyszczynski T. The cultural animal: twenty years of terror management theory and research. In: Greenberg J, Koole SL, Pyszczynski T, editors. Handbook of experimental existential psychology. New York: Guilford Press; 2004. p. 13-34.
9. Hennezel M, Leloup JY. A arte de morrer: tradições religiosas e espiritualidade humanista diante da morte na atualidade. Petrópolis: Vozes; 2005.
10. Sartori AV, Battistel ALHT. A abordagem da morte na formação de profissionais e acadêmicos da enfermagem, medicina e terapia ocupacional. Cad Bras Ter Ocup [Internet]. 2017 [acesso 14 fev 2023];25(3):497-508. DOI: 10.4322/2526-8910.ctoAO0770

11. Oliveira ES, Agra G, Morais MF, Feitosa IP, Gouveia BLA, Costa MML. O processo de morte e morrer na percepção de acadêmicos de enfermagem. Rev Enferm UFPE On Line [Internet]. 2016 [acesso 14 fev 2023];10(5):1709-16. DOI: 10.5205/reuol.9003-78704-1-SM.1005201617
12. Lester D. The Collett-Lester fear of death scale: the original version and a revision. Death Stud [Internet]. 1990 [acesso 14 fev 2023];14(5):451-68. DOI: 10.1080/07481189008252385
13. Collett LJ, Lester D. The fear of death and the fear of dying. J Psychol [Internet]. 1969 [acesso 14 fev 2023];72(2):179-81. DOI: 10.1080/00223980.1969.10543496
14. Lester D. The Collett-Lester fear of death scale. In: Neimeyer RA, editor. Death anxiety handbook: research, instrumentation and application. New York: Taylor and Francis; 1994. p. 121-48.
15. Lester D, Abdel-Khalek A. The Collett-Lester fear of death scale: a correction. Death Stud [Internet]; 2003 [acesso 14 fev 2023];27(1):81-5. DOI: 10.1080/07481180302873
16. Mooney DC, O'Gorman JG. Construct validity of the revised Collett-Lester fear of death and dying scale. Omega [Internet]. 2001 [acesso 14 fev 2023];43(2):157-73. DOI: 10.2190/13PW-QPFY-B1PB-2AQA
17. Tomás-Sábado J, Limonero JT, Abdel-Khalek AM. Spanish adaptation of the Collett-Lester fear of death scale. Death Stud [Internet]. 2007 [acesso 14 fev 2023];31(3):249-60. DOI: 10.1080/07481180601152625
18. Kolawole MS, Olusegun A. The reliability and validity of revised Collett-Lester fear of death and dying scale (version 3) in a Nigerian population. Omega [Internet]. 2008 [acesso 14 fev 2023];57(2):195-205. DOI: 10.2190/OM.57.2.e
19. Naderi F, Esmaili E. Collett-Lester fear of death scale validation and gender-based comparison of death anxiety, suicide ideation and like satisfaction in university students. J Appl Sci [Internet]. 2009 [acesso 14 fev 2023];9(18):3308-16. DOI: 10.3923/jas.2009.3308.3316
20. Espinoza Venegas M, Sanhueza Alvarado O, Barriga O. Validation of Collett-Lester's fear of death scale in a sample of nursing students. Rev Latinoam Enferm [Internet]. 2011 [acesso 14 fev 2023];19(5):1171-80. DOI: 10.1590/S0104-11692011000500015
21. Buccella Sifontes S, Moreira RB, Fernández Urrea D. Validación de la versión española de la escala de miedo a la muerte de Collett-Lester en estudiantes de medicina de la Universidad de Carabobo. Inf Méd [Internet]. 2012 [acesso 14 fev 2023];14(1):47-54. Disponível: https://bit.ly/3KfRudq
22. Quintero S, Simkin H. Validación de la escala de miedo a la muerte abreviada al contexto argentino. Psocial [Internet]. 2017 [acesso 14 fev 2023];3(1):53-9. Disponível: https://bit.ly/3ZhwgAt
23. Bužgová R, Janíková E. Czech adaptation of the Collett-Lester fear of death scale in a sample of nursing students. Omega [Internet]. 2019 [acesso 14 fev 2023];80(1):20-34. DOI: 10.1177/0030222817725183
24. Pasquali L. Instrumentação psicológica: fundamentos e práticas. Porto Alegre: Artmed; 2010.
25. Oliveira CR Jr, Machado DR, Santos FS, Silva JV, Domingues EAR. Adaptação transcultural da Collett-Lester Fear of Death Scale à realidade brasileira. Rev Pesqui Cuid Fundam [Internet]. 2018 [acesso 14 fev 2023];10(1):210-6. DOI: 10.9789/2175-5361.2018.v10i1.210-216
26. Paloutzian RF, Ellison CW. Loneliness, spiritual well-being and the quality of life. In: Peplau LA, Perlman D, editors. Loneliness: a sourcebook of current theory, research and therapy. Hoboken: Wiley; 1982. p. 224-37.
27. Lorenzo-Seva U, Ferrando PJ. Factor: a computer program to fit the exploratory factor analysis model. Behav Res Methods [Internet]. 2006 [acesso 14 fev 2023];38:88-91. DOI: 10.3758/BF03192753
28. Brasil. Ministério da Saúde. Resolução n° 466, de 12 de dezembro de 2012. Dispõe sobre diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União [Internet]. Brasília, n° 12, p. 59, 13 jun 2013 [acesso 14 fev 2023]. Seção 1. Disponível: http://bit.ly/1mTMIS3
29. Pessini L. Morrer com dignidade. Aparecida: Santuário; 1990.

Ana Maria Garcia Andrade – Master – aninhamedic@yahoo.com.br
0000-0001-5176-528X

José Vitor da Silva – PhD – enfjvitorsilva2019@gmail.com
0000-0001-9045-1398

Makilim Nunes Baptista – PhD – makilim01@gmail.com
0000-0001-6519-254X

Correspondence
Ana Maria Garcia Andrade – Rua Três, 120, Condomínio Bela Villa CEP 37553-803. Pouso Alegre/MG, Brasil.

Participation of the authors
Ana Maria Garcia Andrade contributed to the conception of the article, search in the Periódicos Capes database, selection and analysis of the articles, development of the discussion, and review and adjustment of content and form. José Vítor da Silva contributed to supervising the preparation of the manuscript and reviewing content and format. Makilim Nunes Baptista did the psychometric analyses of the study and reviewed content and format. All authors approved the final version for publication.

Received: 4.25.2022
Revised: 10.8.2022
Approved: 10.10.2022