An assessment of the Bugen scale of competence about death

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Abstract
The present study provides relevant information about several aspects related to training in the field of palliative care. It shows the greater discriminative capacity of multidimensional instruments and highlights the need to deepen more in the development of training programmes, the consequences of their implementation, and improvement in certain training areas.

Introduction
Death is a universal experience that should always be considered in a concrete context [1]. However, it cannot be forgotten that individuals’ cultural and religious attitudes towards death and agony affect the psychological aspects. Every person conceives and confronts them individually, based on a family history, according to lived experiences, the philosophy that has governed their lives, their origin, and their personalities [2-4]. This is a complex issue, even more in the case of undergraduate studies in nursing, since it is part of the basic competencies that are essential for care from a multidimensional point of view. Competence in the face of death is a construct that represents a wide range of abilities and capacities (own and others’) that are necessary to confront death. Among these skills, Schmidt mentions communication; treatment of the corpse; information about the funeral, and management of physical and emotional care provided to dying individuals [5]. Emotional care acquires special relevance by constituting the adequate training base necessary for the remaining skills, because being emotionally competent represents having a variety of resources to understand and manage emotions. Proper management of emotions facilitates the daily life and modifies the ways of thinking, behaviours, and relationships with others. In addition, it facilitates emotional evaluation, using emotional signals for judgments and decision making [6].

This is a set of competencies that all individuals who deal with patients should acquire. Training should be based on the processes surrounding death, not only from the curative point of view and focused on the patients, but also taking the families into consideration [7-9]. The perception of competence as a global belief implies a constructive view of reality, as well as the rolls that the individuals play in it. In fact, perceived competence can be linked to other constructs, such as the expectation of self-efficacy [10] and self-esteem [11], which are also associated with greater psychological well-being.

Perceived competence, also known as ‘sense of competence’, can be defined as the perception of being able to interact with the environment in an effective manner [12,13]. Studies addressing competence in the face of death are fundamental, both for the election of the areas in which individuals want to interact, and for the effective performance of care provided to individuals at the end of life [14]. On the other hand, perceived competence is closely related to physical and psychological well-being [11,15,16], in such a way that different authors affirm that perceived competence adequately measures global behaviour indexes, which is why it is considered valid to predict variables such as the coping style. Also, it could be considered as the best predictor of behaviours—even better than the locus of control—when it comes to recognising the relationship between perceived control and emotional well-being [17]. Regardless of whether control is performed or not, there is a consensus that the individuals’ belief of control makes them feel able to relate effectively to their environment [18-21].

Bugen developed the Competence About Death Scale (hereinafter referred to using the Spanish abbreviation EBCAM) aims to assess specific competences acquired after having received training, to measure learning outcomes—behavioural and practical—in various training programmes [22]. This scale has been used to evaluate the influence of the passage of time on individuals’ competence, as well as to observe the change of competence resulting from work experience with death [23-28]. The questionnaire includes specific competencies and skills that the volunteers of the hospices should have acquired after their training, in order to communicate on the subject of death and provide emotional support to patients and their families regarding information about the funeral and physical care of the moribund patients. In short, the purpose is to develop intervention strategies as effectively as possible.

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The Bugen scale has exceeded several criteria of goodness in its Spanish version, showing a high reliability with Cronbach’s alpha greater than 0.80 [5], which makes it a candidate to conduct studies like the present one. Its application is intended to evaluate the acquisition of perceived competence in the face of death by undergraduate nursing students in comparison to the population in general. Therefore, we assessed university students from other undergraduate programmes to perform that comparison.

Material and methods

EBCAM is a self-administered 30-item questionnaire that attempts to determine beliefs and behaviours relating to individuals’ ability to face death [29]. This questionnaire is answered using a seven-point Likert scale, in which: 1 means that the respondents totally disagree with the assertion of the item; 4 means that they are neutral; and 7 means that they totally agree. To correct it, the total score was calculated by adding the 30 items after inversion of items 13 and 24. In this scale, the minimum score was 30 and the maximum 210. Values lower than 105 points indicated inadequate coping effectiveness and values greater than 157 points indicated optimal coping effectiveness. This measuring tool has shown high reliability in university students, for instance 0.89 in the study of Robbins [30], 0.83 in Schmidt [5] and 0.84 in Medrano [31].

The study population was composed of all first-and third-year undergraduate students from the Faculty of Nursing, Law and Education of the Valencia Catholic University, and undergraduate nursing students from La Fe Nursing School. When the questionnaires were handed out, those individuals who did not want to participate in the study, and the students who belonged to exchange study plans (Erasmus or Seneca) left the classroom. At the time of the tabulation of the questionnaires, we eliminated those with extreme scores and those with one or several unanswered items.

To achieve the proposed goal, we tried to control several confusing variables. Firstly, we assessed the influence of having received training in a public or a private university, comparing the results of the main sample of undergraduate students from a private university (Faculty of Nursing, Law and Education of the Valencia Catholic University) with the results of a control sample composed by undergraduate nursing students from a public university (La Fe Nursing School). Secondly, in order to control the maturation and motivation factor, we compared the main sample (undergraduate nursing students) with a degree that was not related to health (undergraduate law students), and another minimally related (undergraduate education students), both from the private university.

Finally, to evaluate whether more information could be obtained from the answers provided by the informants, we extracted the data and applied the abbreviated EBCAM scale, which we will hereafter call EBACAM. It was drawn up after factoring the EBCAM scale and having presented adequate content validity and reliability [31]. The data were treated using ANOVA and Bootstrap statistics, with a minimum confidence level equal to or less than 0.05.

Results

The final sample consisted of 413 participants from the first year and 255 from the third year (with an experimental mortality of 21.8 and 46.3%, respectively). Table 1 shows the sex of the participants by undergraduate programmes and courses, namely: 448 students from the private Faculty of Nursing; 61 students from the public La Fe Nursing School; 100 from the Faculty of Law; and 59 from the Faculty of Education.

There was greater number of female students in the groups of the first and the third years of the faculties of nursing in the two universities studied. There was a balanced proportion in the Faculty of Law, and predominance of male students in the two education programmes of the Faculty of Education. Regarding the total sample, 33.5% of the participants were men and 66.5% women.

The age of the participants ranged from 19 to 23.7 years, with a mean of 21.91 years for all the groups studied. There was a homogeneous distribution between the different undergraduate courses, with ages ranging from 23.3 to 23.7 years. According to the courses, the first range was between 19 years for Law and 21.39 for Nursing in the Valencia Catholic University (Table 2).

With respect to the marital status of the participants, most of them were single (92.9%) and 7.09% were married or divorced (Table 3).

The comparative analysis is shown in Table 4. The mean scores obtained in the EBCAM scale, by programme and course, did not indicate differences with statistical significance in perceived competence in the face of death between first-and third-year students from the Faculty of Nursing, nor between students from both courses in the Faculty of Education. However, there was greater perceived

Table 1. Sex

| Faculty     | Year | Single | Married | Div/Sep | T     |
|-------------|------|--------|---------|---------|-------|
| Nursing UCV| 1st  | 76     | 26.7    | 209     | 73.3  | 285   |
|             | 3rd  | 57     | 35.0    | 106     | 65.0  | 163   |
| Nursing La Fe| 1st | 4     | 10.4    | 34      | 89.5  | 38    |
|             | 3rd  | 1      | 4.3     | 22      | 95.7  | 23    |
| Law UCV     | 1st  | 29     | 48.3    | 31      | 51.7  | 60    |
|             | 3rd  | 16     | 40.0    | 24      | 60.0  | 40    |
| Education UCV| 1st | 19    | 63.3    | 11      | 36.7  | 30    |
|             | 3rd  | 19     | 65.5    | 10      | 34.5  | 29    |
| Total       |      | 221    | 33.5    | 447     | 66.5  | 668   |

Table 2. Age

| Faculty     | Year | n  | %   | SD  |
|-------------|------|----|-----|-----|
| Nursing UCV| 1st  | 76 | 26.7| 5.8 |
|             | 3rd  | 57 | 35.0| 5.1 |
| Nursing La Fe| 1st | 4  | 10.4| 5.1 |
|             | 3rd  | 1  | 4.3 | 5.7 |
| Law UCV     | 1st  | 29 | 48.3| 5.7 |
|             | 3rd  | 16 | 40.0| 6.0 |
| Education UCV| 1st | 19 | 63.3| 4.5 |
|             | 3rd  | 19 | 65.5| 4.3 |
| Total       |      | 221| 33.5| 4.4 |

Table 3. Marital status

| Faculty     | Year | Single | Married | Div/Sep | T     |
|-------------|------|--------|---------|---------|-------|
| Nursing UCV| 1st  | 272    | 91.3    | 3.2     | 4.4   | 285   |
|             | 3rd  | 158    | 96.9    | 5       | 3.1   | 163   |
| Nursing La Fe| 1st | 33    | 86.8    | 3       | 7.9   | 38    |
|             | 3rd  | 21    | 93.3    | 2       | 6.7   | 38    |
| Law UCV     | 1st  | 57    | 95.0    | 2.3     | 7.7   | 60    |
|             | 3rd  | 29    | 96.7    | 1.3     | 3.0   | 40    |
| Education UCV| 1st | 25    | 86.2    | 4       | 13.8  | 29    |
|             | 3rd  | 28    | 60.0    | 4       | 60.0  | 668   |

Table 4. Mean scores

| Faculty       | Year | n   | M     | F     | T     |
|---------------|------|-----|-------|-------|-------|
| Nursing UCV   | 1st  | 76  | 26.7  | 209   | 285   |
|               | 3rd  | 57  | 35.0  | 106   | 163   |
| Nursing La Fe| 1st  | 4   | 10.4  | 34    | 38    |
|               | 3rd  | 1   | 4.3   | 22    | 34    |
| Law UCV       | 1st  | 29  | 48.3  | 31    | 60    |
|               | 3rd  | 16  | 40.0  | 24    | 40    |
| Education UCV| 1st  | 19  | 63.3  | 11    | 30    |
|               | 3rd  | 19  | 65.5  | 10    | 29    |
| Total         |      | 221 | 33.5  | 447   | 668   |
competence in the third-year students from the Faculty of Law in comparison to first-year students \((p=0.023)\).

This result raised some questions, so we decided to explore more in depth the areas in which the students from the Faculty of Law were improving, and why this did not happen in the students from the Faculty of Nursing. To that end, the data were analysed according to the factorialisation carried out by Medrano [31] with the four-factor instrument (EBACAM), providing a Cronbach’s alpha for each of the factors, namely: \(f_1\) = follow-up and communication, 0.787; \(f_2\) = post-mortem care, 0.766; \(f_3\) = self-confidence, 0.814; and \(f_4\) = fear self-management, 0.702.

Table 5 shows the comparison between the first year of nursing at the Valencia Catholic University and the rest of the degrees. The students from the first year of the Faculty of Nursing perceived themselves as more competent in patient follow-up than the students from the first year of the Faculty of Law or the Faculty of Education.

Table 6 shows the comparison between the students from the third year of the Faculty of Nursing at the Valencia Catholic University and the rest of the degrees. The results indicated that the third-year students from the Faculty of Nursing continued to obtain higher scores in follow-up and communication (\(f_1\)), and in fear self-management (\(f_4\)), but lower in post-mortem care (\(f_2\)), and in self-confidence (\(f_3\)) in comparison to third-year students from the Faculty of Law. The students from the third year of the Faculty of Nursing at the Valencia Catholic University obtained significantly higher scores in follow-up and communication (\(f_1\)) than the students from the third year of the Faculty of Education.

Table 7 shows the comparison between students from the first and the third year. The students from the private Faculty of Nursing (Valencia Catholic University) obtained higher scores relating to post-mortem care (\(f_2\)) in the first year than in the third year. The opposite occurred in students from the Faculty of Law, i.e., third-year students obtained higher scores.

Discussion

The present study provides relevant information about several aspects related to training in the field of palliative care. It shows the greater discriminative capacity of multidimensional instruments and highlights the need to deepen more in the development of training programmes, the consequences of their implementation, and improvement in certain training areas [23].

In this sense, the first relevant data indicate that there were not higher scores in perceived competence in the face of death in the third year in comparison to the first in the Faculty of Nursing. It is worth mentioning that this faculty offers a programme in palliative care, training, and sensitisation towards mourning and death. The faculty also provides practical training in palliative care units, internal medicine units, cardiology, oncology, hematology-oncology, and many others, where death and mourning are present to a greater or lesser extent. In addition to these results (observed both in the EBAM and the EBACAM scales), the scores of \(f_2\) obtained by third-year nursing students were lower than those obtained by first-year students. These data may seem strange, but the literature indicates that there has been a tendency to improve perceived competence in the face of death after the completion of programmed and self-limited courses [5,22,32-36]. However, there has been an inverse direction in those studies that assessed the evolution of the perception of competence in the face of death as part of regulated nursing or medicine studies [5,35], as occurs in the present study.

Regarding this last consideration, some authors Moya and Schmidt [5,37] have argued that the decrease in scores —while the experience and contact with dying individuals advances— was due to the confrontation with reality, which is more threatening than the previous expectation that the individuals could have. However, this explanation can only be maintained based on scientific evidence in the case of regulated studies and not in the case of complementary programmes of shorter...
duration. It could happen that a specific course on mourning, death and/or palliative care specifically meets the requirements of the EBAM scale. On the other hand, it could also be argued that the evaluation of such programmes produced a phenomenon that we can call 'Illusion of Competence'. This term could easily be observed after a short course, but not within a broad training programme in which the students should necessarily confront their state of illusion of competence with reality, which will drive them back to a state more in accordance with their real competence. Thus, although previous studies have affirmed that the measure of perceived competition is a good predictor of real performance [17], we question that assertion, at least in some circumstances.

We found the following relevant data comparing the scores obtained with the EBAM scale and those obtained using the modified EBACAM scale. On the one hand, data of the EBAM scale indicated a higher score in competence in the face of death in the group of third-year law students in comparison to first-year students. On the other hand, other differences were not found in the subgroups from the private faculty of nursing, the public faculty of nursing, or the faculty of education.

This difference can be observed more in detail in the EBACAM scale. The facts that law students improved in an area in which had been objectively trained, post-mortem care (f2)—although from contents that were different than those expected for nursing professionals or students, such as the drafting and analysis of wills and related civil and criminal procedures—and that the increase in perceived competence in this area did not occur in nursing students demonstrate at least two aspects: on the one hand, post-mortem care can be trained, at least in accordance to the measurement of the EBACAM scale, which implies that this area could be clearly improved in the training of the nursing students assessed; and, on the other hand, the need to adapt the measurement of perceived competence in the face of death to the different areas that make up this construct, which, undoubtedly, responds to multidimensionality. In addition, this measurement should evaluate aspects that could be negatively related, given that being well prepared for post-mortem care does not mean being competent in the other aspects measured with the EBACAM scale.

We did not find differences when we used the EBAM scale to compare the scores obtained by the first-year students from the Faculty of Nursing of the Valencia Catholic University with those obtained by first-year students from the rest of the programmes. The only exception was the result of the comparison with students from the Faculty of Law, in which case the students from the Faculty of Nursing obtained higher scores.

Finally, we did not find differences between the four groups of the third year. This is a relevant fact given that the factorialised and summarised scale indicated that the results varied. This way, we observed that the EBACAM scale was able to determine that third-year students from the Faculty of Nursing of the Valencia Catholic University felt less competent regarding post-mortem care (f2) than first-year students from the same institution. In addition, it was possible to find differences in follow-up and communication (f1) that had gone unnoticed in the EBCAM scale when comparing students from the Faculty of Nursing, students from the Faculty of Law, and first-years students from the Faculty of Education. Likewise, the comparison of the groups from the third year revealed important differences that had gone unnoticed when we used the original scale. The differences in follow-up and communication (f1) were observed between students from the private Faculty of Nursing and students from the Faculty of Education, and in self-confidence (f3) between students from the private Faculty of Nursing, the public Faculty of Nursing, and the Faculty of Law.

All these data point to a greater sensitivity of the EBACAM scale, which implies evidence in favour of the need to use it. On the other hand, the present study is not free from bias. The field of post-mortem care is important from the traditional perspective of hospice philosophy. However, in our country, post-mortem care is an area outside the traditional nursing activity in health institutions. In this sense, the elaboration of a scale that can be adequately adapted to the needs of a specific field is a need that still needs to be met. It is necessary to point out that the inter-subject methodology used in the present study could be improved with an intra-subject design and follow-up of the participants during their university studies.

It is necessary to emphasise a topic that has already been the subject of intense research in other fields, such as the school [38-40] or even university context [14], i.e., transversally of death, also called 'transversal transversals' or spiral [41]. The term transversal refers to the position of determined content considered socially relevant within study plans and programmes. These contents are conceived as longitudinal and horizontal axes of the curriculum, i.e., the contents corresponding to the different courses are articulated around those axes. Thus, in undergraduate nursing programmes, the transversally of death and care provided to dying individuals and/or those mourning should be articulated from all the subjects that compose the training curriculum, and not only from those that explicitly deal with these topics.

In addition, transversally not only affects the courses, but also all professionals involved in teaching in undergraduate nursing programmes. This fact also concerns those who teach at bedside, because the teachers are the models for future professionals [10], i.e., real, palpable, and close examples. At this point, exactly, the work of the teachers is linked with their own personal work of acceptance of death as a natural fact that occurs frequently in the field in which both the teachers and the students perform, even including their intimate and family experiences. Therefore, this section showed bias, since its correct exploration could reveal important details regarding the quality of training as a field of pedagogical-training excellence.

Conclusions

The results of the present study are highly significant at least due to two reasons. First, they indicate how a scale capable of measuring several dimensions yielded much more information than a one-dimensional scale, and allowed exploring in depth the peculiarities of the participants' responses. This way, there is a consequent possibility of practical application of the instrument in training programmes—in which gaps could be determined—and in surveys for basic and comparative research. Therefore, positive and negative questions arise regarding the consequences of the training received by our undergraduate nursing students. Although university and professional training programmes have significantly increased the levels of education addressing death, they have not yet met the needs of students or professionals [42].

Therefore, we can affirm that, in our case, according to the EBAM and the EBACAM scales, there was no increase in perceived competence in the face of death in third-year students in comparison to first-year students. The scores were worse in the sub-scale of post-mortem care in third-year nursing students, and the opposite occurred in law students.
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