



Measurement of palliative care competencies using PALCOM instrument

Mirza Oruč^{1*}, Suad Sivić², Dejan Bokonjić³, Kenan Galijašević⁴, Harun Hodžić⁵

¹Department of Nursing, Medical Faculty, University of Zenica, Zenica, Bosnia and Herzegovina, ²Department of Social Medicine, Organization and Economics of Healthcare Institute for Public Health of Canton Zenica, Zenica, Bosnia and Herzegovina, ³Pediatric Clinic, University Hospital in Foca, Foca, Bosnia and Herzegovina, ⁴Department of Anatomy, Medical Faculty, University of Zenica, Zenica, Bosnia and Herzegovina, ⁵Department of Surgery, Medical Faculty, University of Zenica, Zenica, Bosnia and Herzegovina

ABSTRACT

Introduction: An essential component of any profession is competent and confident staff. In palliative care, a well-rounded approach and versatile knowledge of staff and students are of great importance. Measuring these competencies is very important for the development of palliative care and health care.

Methods: Measurement of competencies in palliative care by analyzing existing instruments and questions in palliative care. Process of developing a new instrument for measurement of competencies in palliative care PALCOM, using cross-sectional methodology with nurses from Bosnia and Herzegovina.

Results: The results are presenting findings of research done with nurses from BIH using two main variables: Years of work experience and level of education of the participants. Main difference is between the two competencies: Pain assessment and management, education, and care for the patient's family regarding the level of education.

Conclusion: The need for measuring competencies is evident in the daily evolution of palliative care, community-based palliative care, hospice care, and subspecialized palliative care. There is no questionnaire that can measure all competencies, but the use of the general competencies in the PALCOM questionnaire can cover this area with the measurement of different domains and the competencies specific to these domains.

Keywords: Palliative care; competencies; PALCOM; instrument; validity

INTRODUCTION

Palliative care competencies are a combination of theoretical and practical knowledge and skills acquired through formal education and long-life courses. Depending on the nature of the competencies, palliative care looks for technical competencies, not only generic competencies but also specific competencies that need to be used.

Palliative care is a part of the health care system that cares for terminal patients and patients suffering from cancer or other diseases. The increasing number of cancer patients and patients with other terminal illnesses requires a greater number of professionals involved in palliative care in all parts of the world. Palliative care requires specific knowledge, attitudes, and skills, and on this basis, specific complex competencies are needed to deliver this type of care (1-4).

The changes in the population structure and the increasing number of new melanomas and different types of cancer require new demands on well-trained professionals in the field of palliative care. The largest number of health-care professionals in the world is nurses (more than 1/3) (WHO), which means that there is a need for competent nurses who can provide complex palliative care (5).

The competencies described by Canning et al. (6) that palliative care nurses need can be divided into several areas:

- Therapeutic relationships
- Complex supportive care
- Collaborative practice
- Leadership skills
- Practice improvement.

Every palliative care nurse should have the skills to establish good, strong, and trustworthy communication with the patient and the family. To achieve a high standard of holistic care for the person and family, it is very important to have good and quality communication skills.

The variety of symptoms experienced by palliative care patients places an additional burden on the training and specialization of palliative care nurses. Identification of possible causes, management, and assessment of presenting

*Corresponding author: Mirza Oruč, Department of Nursing, Medical Faculty, University of Zenica, Fakultetska 3, 72000 Zenica, Bosnia and Herzegovina.
E-mail: mirza.oruc@gmail.com

Submitted: 10 July 2023/Accepted: 22 December 2023

DOI: <https://doi.org/10.17532/jhs.2024.2254>



symptoms are essential for good palliative care. In addition to knowledge of the physiology of symptoms, collaboration with the terminally ill person, the family, and the interprofessional team is essential.

The nurse must also be able to use a framework that addresses the psychological, social, physical, spiritual, and practical issues related to the difficult ethical and legal issues associated with death and dying. These may include areas such as withdrawal/refusal of treatment, no-code status, futility, medical abandonment, palliative sedation, the principle of double effect, disclosure and truth-telling, and end-of-life research and resource allocation.

The development of instruments to measure competencies that are not limited to knowledge, attitudes, or opinions about palliative care seems very important, especially since several instruments have already been developed to measure them, such as the Frommelt Attitude Toward Care of the Dying Scale (7), the palliative care quiz for nurses (8), The palliative care knowledge test (9) (Table 1), but with the development of teaching methods, new approaches in teaching methodology, and a new definition of competencies and needs in palliative care, the existence of an instrument that only assesses competencies is very important for this part of the research.

Developing a new instrument, named PALCOM is based on assessment of competencies of nurses involved in palliative care nursing and self-evaluation of competitiveness. This instrument can be used for the measurement of competencies for nurses who never participated in palliative care and nurses that already are working in the field of palliative care.

The focus of palliative care is on quality of life rather than quantity, accepting dying as a normal process, part of life, rather than a medical condition. The implementation and delivery of palliative care is a very complex task and requires a variety of different skills from nurses and health-care professionals.

The need for palliative care leads to the development of palliative care strategies, and well-trained and competent nurses who provide palliative care to patients and their families. Assessment of these levels is essential for moderate palliative care treatment.

This article presents the work and process of creating and preparing an instrument for measuring competencies in palliative care and is used to measure and comparatively analyze nurses' competencies in palliative care in Bosnia and Herzegovina.

Assessment of competencies, not only clinical competencies but a broad range of competencies, has returned to the center of nurse education and its job description (4).

METHODS

Research methodology is combining qualitative and quantitative approaches using different scopes of actions.

The development of PALCOM that measure competencies was carried out in several phases: Collection of materials, literature review, defining competencies in palliative care, and interviewing nurses. The development of a questionnaire is particularly important because there is no specific training in the field of palliative care in Bosnia and Herzegovina.

Nurses involved in the interview process are selected by inclusion criteria: formal nursing education, a minimum of 1 year of working experience, working and having contact with palliative care patients. Exclusion criteria are working experience <1 year and not working or having contact with palliative care patients.

Validation of the questionnaire is done by a panel of experts in the field of palliative care. The experts were contacted by email and received instructions on how to evaluate the questionnaire and the instrument. Experts are chosen based on their experience in the field of palliative care which needs to be more than 5 years.

The questionnaire consists of two parts. The first part reflects general information about the age, gender, working experience, working place, and education level. The second part of the questionnaire consisted of 54 questions. These questions reflect competencies for palliative care based on professional experience and education.

The questionnaires were originally developed in the English language (as part of an international Ph.D. thesis, one part of the research was done in Spain) and translated into the official languages of Bosnia and Herzegovina and Spanish language, following procedures for translation of research instruments. Translation procedures were done using two blinded methodologies of translation.

The first step to start the research consists of a literature review. Two hundred and eighty-six publications that met the criteria of the research, the two most important factors being: Relationship to competency measurement and relationship to competencies (skills and knowledge) in palliative care. Research criteria for papers/instruments are based on the focus on palliative care, competencies, instruments, and evaluation.

Step two: the results from step one were developed using the most important factors to create questionnaires and define the most important competencies. The nine most important competencies were defined, and questionnaires were developed based on three parts. Competencies are defined based on the White paper of EAPC.

Step Three: as explained earlier, the questionnaires (instruments) were validated using Cronbach alpha as a common process and tests. A panel of experts from different countries was contacted by e-mail and the test was validated.

Step Four: After the process of validation and translation, 109 interviews have already been conducted in Bosnia and

TABLE 1. Description of existing instruments in palliative care nursing

Scale	FATCOD	PCQN	The palliative care knowledge test
Characteristics	Scale is a 30-item scale designed to measure participants' attitudes towards providing care to dying patients	Measure nurses' knowledge of palliative care, measure and compare different groups' level of knowledge, identify their most frequently held misconceptions about palliative care practice	Measure the efficacy of palliative care educational programs.

Herzegovina, an online platform has been developed and it was used for the research to be conducted in Spain.

RESULTS

Developing new instruments is based on different issues and needs in palliative care, not just on previous and existing instruments. The competencies of the palliative care model were used, which is based on 9 core competencies in palliative care.

Part 1 of the questionnaire consists of general data about the nurses: Age, place of work, work experience, level of education, and years of life.

Part 2 is based on the assessment of nurses' competencies in 54 different questions about the main competencies needed for palliative care, using a 5-point Likert scale with answers ranging from (very poor, poor, average, good, and very good).

Part 3 of the questionnaire is based on self-assessment to evaluate the respondents' self-perception of their knowledge and competencies in real life and to make a comparison with the general data and the competency scale based on this part. This process ensures the comparison of different factors of the nurses who participated in this research. Based on the instrument for measuring competencies and using Bloom's taxonomy (10) for competencies, novices are given scores of 1, 2, and 3; experts are given scores of 4, 5, 6, 7, and 8; and experts are given scores of 9 and 10.

Content validity is achieved by identifying each of these competencies, which are crucial for the development of palliative care and practical implementation in everyday work.

Part 1 of the questionnaire with general questions consists of 16 questions that are applicable in all situations and can be included in any questionnaire (Table 2).

Part 2 of the first version contains 63 questions divided into 9 different domains, where each domain represents a competency (Table 3). Final version of PALCOM had 54 questions

TABLE 2. General data about the nurses (presentation of sample structure by gender, workplace, and level of education)

General data	Participants	
	n	%
Gender		
Female	68	81
Male	16	19
Workplace		
Primary health care	8	10
General hospital	21	25
Cantonal hospital	38	45
University hospital	17	20
Level of educations		
Nurses high school	60	71,4
Nursing college	5	6
Faculty of nursing		
Bachelor	19	22,6
Master		
Doctorate		
Nursing specialist		
Total	84	100

that defined each domain. Competence Interprofessional/collaborative practice had two questions with low relevance for the definition of competence. Competence ethics had one question with low relevance for the definition of competence and Professional Development and Advocacy had three questions with low relevance for the definition.

From Table 3 the greatest importance and relevance to the questionnaires are questions and competencies from the areas of pain assessment and management, symptom assessment and management, and education, while the least relevance is in advocacy professional development.

An expert panel from the field of palliative care conducted content validity and the suggestions made by the experts were explored in a pilot study in Bosnia and Herzegovina.

The correlation between the experts reviewing the theoretical definition, relevance, and understanding of the questions was very positive. The experts rated the questions well; the correlation between the experts was positive 0.22, while the overall correlation between the experts was 0.26, which is very positive. This shows that the questionnaire is suitable for all levels of nursing.

The areas of care of the person and family have a high relevance to the process of palliative care, with one question having a relevance of <10%.

The lowest relevance was seen in the Professional Development of Advocacy domain, where three questions were rated with relevance of <10%. The main reason for this is that the concept and meaning of the question are presented in the previous questions of the questionnaire.

Measurement of competencies was first done in Bosnia and Herzegovina, participants $n = 109$, (response rate was 89%), 98 participants meeting all criteria. Participants level of education is presented in Graph 1.

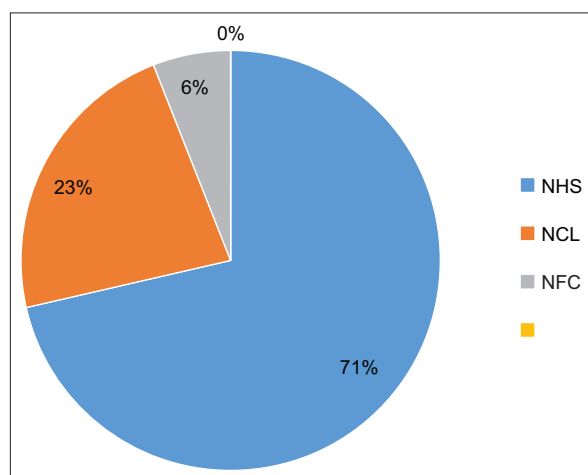
The responses were analyzed. The statistical tests used for this purpose were the Kruskal Wallis test, a nonparametric test for independent samples. In this case, the participants were grouped by years of work experience (Table 4). The results show a statistically significant difference ($p = 0.004$) between the groups with different years of work experience and different competencies. These results lead us to consider the use of PALCOM with nurses with different work experiences. Individual interviews should be conducted with earlycareer nurses, mid-career nurses, and nurses with longer work experience. In addition, these results may be a good starting point for assessing palliative care nurses after graduation from nursing school and after a specified time (5 years, 10 years, etc.).

TABLE 3. Presentation of PALCOM questions relevance

Competencies	Relevance						
	1	2	3	4	5	6	7
Care of the person and family	85	68	32	7	90	95	98
Pain assessment and management	54	77	50	93	60	75	85
Symptom assessment and management	63	91	85	80	90	95	97
Last days/hours/imminent death care	86	6	90	85	75	80	85
Loss, grief, and bereavement support	90	75	55	63	45	87	4,5
Interprofessional/collaborative practice	74	63	7	85	95	75	3
Education	55	65	32	45	65	90	75
Ethics and legal issues	60	45	90	35	7	85	90
Professional development advocacy	3	75	85	99	65	3	4

Participants are listed in Table 5 grouped by educational level. Results show a statistically significant difference in the last week, days, hours of care, bereavement support, and education between groups with different levels of education. These results lead us to consider the use of PALCOM with nurses with different levels of education, especially in health care where there are still different levels of education among nurses.

The final version of the instrument was used to analyze the level of competence of the participating nurses from Bosnia and Herzegovina and Spain to measure their self-perception regarding their level of competence and expertise in



GRAPH 1. Presentation of Level of education of nurses involved in research (71% were nurses with high school education, 23% were nurses with faculty education (bachelor NFC) and 6% were nurses with college education).

TABLE 4. Core competencies description a. Kruskal Wallis Test, b. grouping variable years of working experience

Core competencies	Hi-kvadrat	df	p-value
Patients care	18,957	6	0.004
Care about the patient's family	21,093	6	0.002
Pain management and assessment	18,946	6	0.004
Symptoms management	12,763	6	0.047
Last week, days, hours of care	17,782	6	0.007
Grief support	14,550	6	0.0024
Interprofessional co-operation	17,931	6	0.006
Education	24,097	6	0.001
Ethics and law	16,825	6	0.010
Professional Advocacy	16,871	6	0.010

TABLE 5. Description a. Kruskal–Wallis test, b. grouping variable levels of education

Core competencies	Hi-kvadrat	df	p-value
Patients care	3.567	2	0.168
Care about the patient family	0.905	2	0.636
Pain management and assessment	5,115	2	0.078
Symptoms management	1.453	2	0.484
Last week, days, hours of care	6.492	2	0.039
Grief support	6.776	2	0.034
Interprofessional co-operation	1.225	2	0.542
Education	7.210	2	0.027
Ethics and law	1.914	2	0.384
Professional Advocacy	2.135	2	0.344

the field of palliative care. Specific correlation with the level of education, work experience, position in the hospital, etc. may help. PALCOM as a psychometric instrument for competence measurement is applicable in different health-care systems and different educational systems.

The results of this study show a significant correlation between the results of the expert group and the nurses' responses (0.19). Significant data show education level and years of work experience, which means that the PALCOM should be used with different groups of nurses, beginners, juniors, and older nurses.

The final version of the instrument, originally developed in English, was translated into the languages of Bosnia and Herzegovina and Spanish language.

DISCUSSION

For nurses to provide the best palliative care possible, they must be competent, which is based on knowledge and skills acquired during their education or years of professional experience. There is no good and quality palliative care without competent nurses, but developing a good system that can provide patient-centered palliative care is not possible without skillful and competent nurses, PALCOM is a tool that provides information and insight into the system of care and explains what the main purpose of this tool is.

The review of various studies in palliative care research shows encouraging results for physical symptoms but inconclusive and sometimes contradictory results for other domains such as psychosocial and spiritual outcomes (11). Based on this information and findings, PALCOM has taken its place in palliative care research by identifying key competencies and skills in spiritual needs, family needs, team management, communication, and pain management. PALCOM allows us to identify nurses' ability to help in these areas and also align them with patients so they can assess outcomes in these areas. Most existing instruments are geared toward patients rather than nurses. Very few instruments are caregiver-focused, but an instrument like PALCOM can easily be used for combined caregiver and patient assessment.

The study of palliative care priorities in emergency departments conducted by Ques et al. (12) divided priorities into six different categories: Description, Setting, Screening, Outcomes, Resources, Assignment, and Education. Again, with this and other research, no research can be conducted without health-care professionals having the necessary skills in this area. Before conducting research in this area, measurement of competencies can be done using various instruments. This is one of the main reasons for developing instruments to measure competencies in palliative care, such as the present instrument called PALCOM.

The impact of palliative care on health care in the future will be twofold: First, demand will be higher as calls for a "good death" become more common, and second, the proportion of the population available for palliative care health care will decrease. In the future, health-care priorities will be divided and organized according to needs. From the available data, we can see that the need for palliative care is increasing; the positioning of competent personnel (health workers and professionals) will be essential for the good and proper functioning of the health system. An

instrument such as PALCOM can provide information on the competencies of health-care professionals and contribute to the improvement of the health-care system, as well as provide information on which priorities and topics should be emphasized in palliative-care training programs.

The results show that the year of work experience has a direct impact on nurses' competencies and skill development, so the null hypothesis can be rejected. The statistical significance is very high in the context of the relationship between nurses' competencies and work experience.

The level of education shows different statistical results in the area of different competencies. The competencies of bereavement care, patient care in the last weeks, days, and hours, and education (patient and family education) show a very high statistical significance and the null hypothesis can be rejected, which means that these competencies are directly related to the level of education. Competencies: patient care, patient and family care, pain management and assessment, symptom management, interprofessional collaboration, ethics and law, and professional advocacy show that the null hypothesis should be maintained. These competencies must be developed within the different levels of training and must be part of the educational system and programs.

CONCLUSION

The need to measure competencies is evident in the daily evolution of palliative care, community-based palliative care, hospice care, and subspecialty palliative care. Questionnaires that can measure all competencies do not exist, but by using general competencies in the PALCOM questionnaire, this entire domain can be covered with the measurement of different domains and specific competencies for these domains.

PALCOM as an instrument to assess competencies in palliative care is a very reliable instrument at the moment. With the development of palliative care, improvements can be made in the area of palliative care competencies.

PALCOM is applicable in different health and education systems and is not dependent on external factors.

The need for an appropriate instrument to measure competence in palliative care led us to develop this instrument in the most economical and reasonable way.

To the best of author's knowledge, there is no instrument developed for this purpose that relates to the measurement of competence.

DECLARATION OF INTERESTS

Authors declare no conflict of interest.

REFERENCES

- Herber OR, Johnston BM. The role of healthcare support workers in providing palliative and end-of-life care in the community: A systematic literature review. *Health Soc Care Community* 2013;21(3):225-35. <https://doi.org/10.1111/j.1365-2524.2012.01092.x>
- Bergen A. Nurses caring for the terminally ill in the community: A review of the literature. *Int J Nurs Stud* 1991;28(1):89-101. [https://doi.org/10.1016/0020-7489\(91\)90053-6](https://doi.org/10.1016/0020-7489(91)90053-6)
- National Hospice and Palliative Care Organization. *Fact and Figures: Hospice Care in America*. Washington, DC: National Hospice and Palliative Care Organization; 2010.
- Gisondi MA. A case for education in palliative and end-of-life care in emergency medicine. *Acad Emerg Med* 2009;16(2):181-3. <https://doi.org/10.1111/j.1553-2712.2008.00329.x>
- World Health Organisation. *Fact Sheets*. Available from: <https://www.who.int/mediacentre/factsheets/fs297/en7> [Last accessed on 2017 Jun 19].
- Canning D, Yates P, Rosenberg JP. *Competency Standards for Specialist Palliative Care Nursing Practice*. Brisbane: Queensland University of Technology; 2005.
- Frommelt KH. The effects of death education on nurses' attitudes toward caring for terminally ill persons and their families. *Am J Hosp Palliat Care* 1991;8(5):37-43. <https://doi.org/10.1177/104990919100800509>
- Carroll G, Brisson DP, Ross MM, Labbe R. The French version of the palliative care quiz for nursing (PCQN-F): Development and evaluation. *J Palliat Care* 2005;21(1):27-34.
- Kozlov E, Carpenter B. The development and validation of the palliative care knowledge test (PaCKS). *J Pain Symptom Manage* 2017;53(2):443-4.
- Bloom Taxonomy. Available from: <https://www.teachthought.com/learning/what-is-blooms-taxonomy> [Last accessed on 2021 Nov 23].
- Okuyama A, Martowirono K, Bijnen B. Assessing the patient safety competencies of healthcare professionals: A systematic review. *BMJ Qual Saf* 2011;20(11):991-1000. <https://doi.org/10.1136/bmjqs-2011-000148>
- Ques TE, Asplin BR, Cairns CB, Hwang U, Pines JM. Research priorities for palliative and end-of-life care in the emergency setting. *Acad Emerg Med* 2011;8(6):e70-6. <https://doi.org/10.1111/j.1553-2712.2011.01088.x>