ORIGINAL RESEARCH

Distance learning and its impact on educational intervention on palliative care to nursing professionals–A pilot study

Eric Benchimol Ferreira[1], Layz Alves Ferreira Souza[1], Maria Alves Barbosa[2], Claudia Paula Guimarães[1], Michelle Augusta Santos[3], Paulo Lucas Benchimol Villasboas[4], Regiane Aparecida Santos Soares Barreto[1], Enio Chaves Oliveira *[5]

[1] *Hospital das Clinicas, Universidade Federal de Goiás, Brazil*
[2] *Department of Health Sciences, Universidade Federal de Goiás, Brazil*
[3] *College of Nursing, Universidade Federal de Goiás, Brazil*
[4] *Universidade Federal do Mato Grosso, Brazil*
[5] *School of Medicine, Universidade Federal de Goiás, Brazil*

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ABSTRACT

Background and objective: Distance education (DE) is a professional training tool that was utilized to work with nursing professionals in this investigation on palliative care. This innovative form of care is used by interdisciplinary teams in a holistic way, with biological, psychological and spiritual aspects. Besides it is uniquely significant during pandemic lockdowns such as the current restrictions in nowadays. The aim of the study was to evaluate the knowledge of nursing professionals about palliative care, before and after an educational intervention through distance education.

Methods: This is a quasi-experimental study carried out in a medium-sized state teaching hospital located in the Midwest region of Brazil. Participants: 31 nursing professionals who worked in the internal medicine ward. First phase, the prior knowledge about palliative care was evaluated through a questionnaire containing 24 semi-structured questions. In the second phase seven 20-minute video lessons were prepared, recorded and sent to the participating group. Third phase the same questionnaire was used to evaluate participants and they were inquired how they perceived they knowledge after distance learning.

Results: A total of 31 professionals were enrolled in the first phase of the study and 29 answered the evaluation questionnaire after DE intervention. Most nursing professionals (61.2%) had between 31 and 50 years, 30 (96.7%) professionals had studied between 10 and 20 years. After DE there was an increase of 33% correct answers. Distance learning improved professional practice and increased confidence at work.

Conclusions: Distance education is well accepted and promotes an increase of knowledge by up to a third on palliative care issues and also increased self-confidence among professionals.

Key Words: Nursing, Palliative care, Continuing education, Distance learning

1. INTRODUCTION

Human beings are naturally concerned about longevity and many factors as technological and scientific development, reduction of infectious diseases, the control of other diseases, and the improvement of socioeconomic conditions, allowed the population aging in most countries. This condition has imposed a new reality, including the need for palliative care to improve the quality of life of patients and their families.

* **Correspondence:** Enio Chaves Oliveira; Email: eco1.br@gmail.com; Address: School of Medicine, Universidade Federal de Goiás, Brazil.

Palliative care is a philosophy that aims to alleviate suffering and improve the quality of life of patients with chronic evolutionary diseases, who have a limited life prognosis, and who can progress to death. It also aims to promote coping in the face of changes in the lives of patients and their families.[1,2]

There are few studies that address palliative care practices among nursing professionals.[3] Guidelines in palliative clinical practice have led to worldwide initiatives that recommend the need for education and training in palliative care as a requirement for quality service in nursing and other health professions.[4] This topic is rarely addressed in higher education courses and is not included in the curricula of technical nursing courses, which makes it difficult to implement palliative care services, especially in developing countries.[5,6]

Nursing care must be performed based on theoretical knowledge and practical skills. However, during routine patient care, it is not possible to disconnect the caregiver from their human side. Caring for patients without the possibility for therapeutic progress promotes different feelings, which can affect professional performance in the face of the situation and, influenced by negativity and sadness, may lead them to feelings of professional failure.[7,8]

There is a gap in curricular content frameworks that includes palliative care and the topic of death both in undergraduate and professional technical courses. Given this reality, the importance of inserting the theme into teaching programs is emphasized, in order to contribute to the knowledge and skills in assisting these patients.[9,10] The complexity of the care required for patients in palliative care can be a stressor for nursing professionals and the lack of adequate training and education in palliative care can generate negative results.[11]

The adoption of innovative teaching-learning strategies for nursing professionals can promote their debate and their adherence to educational processes, as studies indicate that continuing and/or permanent education can reduce deficiencies and promote changes in the behavior of professionals in performance of nursing care.[12]

Among the teaching-learning strategies suitable for the education and training of health professionals, Distance Education (DE) stands out. As it is of short duration, this teaching modality allows addressing important issues in the process of permanent and continuing education, in addition to enabling the use of methodologies such as video lessons.[13]

DE process can be valid in the continuing education of nursing professionals, especially when considering professionals with a high workload, but who need constant updated training. It is important to note that Distance Education has low overhead costs, is easy to access, and suitable for flexible schedules, factors that facilitate its adherence.[14,15] Video lessons have become an important tool at a time when the world is facing a pandemic.[16]

The objective of the study was to evaluate the knowledge referred by nursing professionals regarding palliative care, before and after distance educational intervention.

2. METHOD

This is a quasi-experimental study carried out with a population of nursing professionals who work in the internal medicine ward of a 300 beds state university hospital, located in Central Brazil. The location chosen for the study hosts the largest number of patients in palliative care at the hospital.

2.1 Phase 1: Situational diagnosis

a) Socio-demographic characterization of 31 participating nursing professionals;
b) Experiences with patients in palliative care;
c) Evaluation of the level of prior knowledge about palliative care with the application of a questionnaire containing 24 semi-structured questions.

A review of literature was conducted with the terms nursing, palliative care and end-of-life specifically nursing studies that used questionnaires.[17–20] After reviewing several questionnaires, a mixed questionnaire was created by nursing professors from Nursing School (Universidade Federal de Goiás – UFG) that addressed nursing knowledge, attitudes, practices, and experiences in palliative care (see Figure 1).

2.2 Phase 2: Educational intervention

Seven 20-minute video lessons were prepared by nursing professors from Nursing School (UFG), based on recent literature and addressing the specific needs of the studied group according to responses to questions regarding knowledge about palliative care. A team of nurses, psychologists, nutritionist and physician recorded the videos using graphic and figures in a easy way to understand. Access to videos were sent to the participating group of Phase 1.

2.3 Phase 3: Assessment of the impact of educational intervention

a) to assess the level of knowledge about palliative care post-training, the Phase 1 questionnaire was used; b) evaluation of video classes on how nursing professionals perceived they knowledge after distance learning. Answers were divided into three categories according to modification and change in day practice based in the new knowledge: None: no change in practice; Some: improved the practice weekly; Much: improved the practice daily.

1. Can palliative care only be introduced in the final stage of life?
2. When a patient is in palliative care is there nothing more to do?
3. Is this approach indicated only for patients with advanced cancer?
4. Does the central focus of palliative care imply establishing aggressive treatment?
5. Is palliative care a practice that requires action by the multidisciplinary team, aiming to meet the physical, emotional, psychological and spiritual demands of the patient?
6. Is the advanced stage of the disease what determines whether it is necessary to use morphine?
7. Is morphine the best analgesic to control the pain of the patient under palliative care?
8. In the context of palliative care, is intoxication and morphine addiction a major problem when this medication is used for a long time?
9. Is the use of placebo appropriate for the treatment of some types of pain?
10. Can morphine be administered subcutaneously (hypodermoclysis)?
11. Is the use of non-drug therapies (example: comfort measures, psychotherapy, occupational therapy and others) important in controlling pain and promoting patient comfort?
12. Doesn't the end-of-life person need to eat?
13. Is symptom control one of the main tools for those working with palliative care?
14. Are nausea, vomiting, constipation and delirium common in patients under palliative care?
15. Is the intensity of pain influenced by anxiety and fatigue?
16. Are physical pain and suffering the same thing?
17. Does every patient who has an advanced and late-stage disease need to be sedated?
18. Is extubation contraindicated for patients under palliative care?
19. Is it essential that family members remain on the bedside until death occurs?
20. Do men usually grieve more quickly than women?
21. During the last days of life, can sleepiness decrease the need for sedation?
22. Is the death of a distant person or with whom there was a conflictual relationship easier to overcome than the loss of someone close?
23. Can working with many dying patients inevitably lead to physical and emotional exhaustion of caregivers?
24. Does palliative care work require the professional to maintain an emotional distance?

Figure 1. Questionnaire of nursing professionals knowledge about palliative care

2.4 Statistics

The data were organized in an Office Excel 2013 spreadsheet and analyzed using the SPSS Statistical Package for the Social Sciences version 20.0. Descriptive statistics and frequencies showed the distributions of the participants' characteristics, knowledge, attitude, confidence, and educational needs. To compare the questionnaire on knowledge about palliative care before and after video lessons, the McNemar non-parametric test was used, considering a significance level of 5% ($p < .05$)

3. Results

The sociodemographic characterization of the participants is shown in Table 1. Most nursing professionals are female (96.7%), and aged between 31 and 50 years, 19 (61.2%). It was found that 30 (96.7%) professionals had studied between 10 and 20 years.

Table 2 shows the previous experiences of nursing technicians with palliative care.

The subjects that showed improvement in knowledge after classes are listed in Table 3.

After the DE intervention 29 out of 31 participants answered the evaluation questionnaire.

The evaluation of the content of the video lessons was over 80% in all domains (contribution to professional practice, comprehensive content, and increased confidence at work) for both the theoretical and practical aspects of palliative care (see Tables 4 and 5).

Lesson 1 - Concepts and criteria for establishing palliative care;
Lesson 2 - Use of opioids, action of morphine (intoxication and dependence) and use of placebo;
Lesson 3 - Food in the final stage of life;
Lesson 4 - Sleepiness, sedation and extubation at the end-of-life;
Lesson 5 - Patient assessment in palliative care and ethical and legal aspects;
Lesson 6 - Grief, gender difference and conflicting relationships in palliative care and family coping;
Lesson 7 - Ways the worker deals with palliative care and end-of-life care.

The results show that the intervention promoted an improvement in the "Contribution to professional practice" domain greater than in "Increased confidence at work" although this

was in a high level, above 86% in all classes.

Table 1. Demographic data of participants (N = 31)

	n	%
Sex		
Female	30	96.8
Male	01	3.2
Age (years)		
18-30	02	6.4
31-50	19	61.3
> 50	10	32.3
Civil Status		
Single	17	54.8
Married	11	35.6
Divorced	01	3.2
Widowed	01	3.2
Unreported	01	3.2
Children		
No	08	25.8
Yes	23	74.2
Religion		
No	01	3.2
Yes	30	96.8
Weekly workload (hours)		
30	21	67.7
36	09	29.1
40	01	3.2
Time working in the hospital		
< 10 years	13	41.9
> 10 years	18	58.1

4. DISCUSSION

This study showed that distance education improved by one third the accuracy of questions related to PC among nursing professionals who work with clinical patients in a large general hospital. This degree of improvement could have been greater with the increase in direct contact of instructors via teleconference with the resolution of questions, although this was not one of the objectives of the study. Another way to increase performance would be to establish an institutional palliative care webpage where nursing professionals can answer their questions over time and interact with the tutor.[21] The methodology used in this study, using a previous questionnaire to determine educational needs and setting up videoconferences, has been used by other authors.[13, 22]

One of the issues addressed is the use of morphine to control pain, as its use is selected because it produces a larger analgesic effect and the handling of opioids seems to be a question in different countries.[23] Therefore, it was noticeable that in the post-intervention there was a greater understanding of nursing professionals when answering the questionnaire, with 19 (67.9%) correct answers. As for the use of placebo during palliative care, 20 (74.1%) of the participants stated that it could be used. Nevertheless, the use of placebos remains controversial in patients under palliative care.[24]

With regard to feeding in patients who are in the terminal phase, 9 (36.0%) nursing professionals after classes stated that every patient needs to eat even though they are in the terminal phase. The feeding route can be a point of conflict between the caregiver and the family.[25] This aspect should be discussed with the family so that the benefits of nutrition are added to the treatment goals. In the case of cancer patients, nutritional support often precedes treatment, so that the patient can support the proposed treatment.[26]

Table 2. Experiences in Palliative Care (PC) by nursing professionals (N = 31)

	n	%
Received Training?		
Yes	11	35.4
No	20	64.5
In this institution?		
Yes	07	22.5
No	04	12.9
No response	20	64.5
Are you familiar with palliative care?		
Yes	10	32.2
No	21	67.7
Have you ever cared for a PC patient?		
Never	03	9.6
Rarely	02	6.4
Sometimes	03	9.6
Frequently	14	45.1
Always	09	29.0
Do you feel emotionally prepared to care for patients in PC?		
Never	02	6.4
A little	06	19.3
Unprepared	09	29.0
Prepared	11	35.4
Very prepared	03	9.6
Do you feel technically prepared to care for patients in PC?		
Never	02	6.4
A little	04	12.9
Unprepared	07	22.5
Prepared	15	48.3
Very prepared	03	9.6
What is your professional satisfaction in caring for patients in PC?		
The worst possible	02	6.4
Terrible	12	38.7
Not good	09	29.0
Good	06	19.3
Excellent	02	6.4

Table 3. Knowledge of nursing professionals before and after educational intervention on palliative care

Questions	Affirmatives		*p**
	Pre intervention	Post intervention	
	n (%)	n (%)	
Is morphine the best analgesic to control the pain of the patient under palliative care?	13 (44.8)	19 (67.9)	.019
Is the use of placebo appropriate for the treatment of some types of pain?	9 (31.0)	20 (74.1)	.001
Doesn't the end-of-life person need to eat?	3 (10.3)	9 (36.0)	.008
Is symptom control one of the main tools for those working with palliative care?	20 (69.0)	26 (92.9)	.014
Are nausea, vomiting, constipation and delirium common in patients under palliative care?	22 (75.8)	28 (96.5)	.014
Is extubation contraindicated for patients under palliative care?	9 (31.0)	23 (85.2)	.001
During the last days of life, can sleepiness decrease the need for sedation?	15 (51.7)	23 (82.1)	.021
Is the death of a distant person or with whom there was a conflictual relationship easier to overcome than the loss of someone close?	7 (24.1)	11 (40.7)	.045

*McNemar test

Table 4. Evaluation of practical aspects of the content of distance learning on palliative care (N = 29)

Domains	Evaluation	Distance Learning							
		CLASS 1		CLASS 2		CLASS 3		CLASS 4	
		n	%	n	%	n	%	n	%
Contribution to professional practice	NONE	0	0	0	0	0	0	0	0
	SOME	0	0	1	3.4	1	3.4	1	3.4
	MUCH	29	100	28	96.5	28	96.5	28	96.5
Scope of content	NONE	0	0	0	0	0	0	0	0
	SOME	3	10.3	5	17.2	3	10.3	3	10.3
	MUCH	26	89.6	24	82.7	26	89.6	26	89.6
Increased confidence at work	NONE	0	0	0	0	0	0	1	3.4
	SOME	4	13.7	2	6.8	1	3.4	6	20.6
	MUCH	25	86.2	27	93.1	28	96.5	22	75.8

Table 5. Evaluation of theoretical and philosophical aspects of the content of distance learning on palliative care (N = 29)

Domains	Evaluation	Distance Learning					
		CLASS 5		CLASS 6		CLASS 7	
		n	%	n	%	n	%
Contribution to professional practice	NONE	0	0	0	0	0	0
	SOME	1	3.4	1	3.4	1	3.4
	MUCH	28	96.5	28	96.5	28	96.5
Scope of content	NONE	0	0	0	0	0	0
	SOME	2	6.8	2	6.8	3	10.3
	MUCH	27	93.1	27	93.1	26	89.6
Increased confidence at work	NONE	0	0	0	0	0	0
	SOME	4	13.7	4	13.7	0	0
	MUCH	25	86.2	25	86.2	0	0

After the administration of classes 26 (92.9%) of the nursing professionals stated that symptom control is one of the main tools in palliative care, and 28 (96.5%) stated that nausea, vomiting, constipation and delirium are common in termi-

nally ill patients. Many studies have not found a benefit from a great number of commonly used drugs to treat nausea and vomiting mainly in patients with advanced gastrointestinal cancer. It is recommended to use different approaches to control symptoms and try to treat the causes of symptoms.[27]

Regarding extubation, 23 (85.2%) said it was contraindicated in patients under palliative care. Recently, the frequency of dyspnea has increased in terminal patients. Among the treatment alternatives is the supply of high-volume oxygen through a nasal cannula trying to avoid an orotracheal intubation.[28] Blood transfusion is also indicated in some patients.[29] Extubation when used correctly according to family members and the patient's desire causes a better quality of death when treatment is no longer possible.[28, 30]

Drowsiness is a very important point as it causes concern in caregivers and in the family. Among the nursing professionals interviewed, there was an increase of almost 30% in the affirmative answer that in drowsiness during the last days of life there is no need to decrease sedation. Palliative sedation has no effect on accelerating death.[31]

Regarding the death of a distant person or with whom there was a conflictual relationship, it is easier to overcome than the loss of someone close, only 11 (40.7%) got this statement right, since the grief is experienced by each individual different and it is not possible to establish standards for individual reactions or cultural differences.[32]

In the post-intervention it was observed that, from the level of knowledge of the nursing professionals, further educational interventions on this theme are necessary. However, the dissemination of knowledge and education about palliative care must be inserted during professional training that promotes improvement in their practice. The internet course promoted as an intervention process, obtained a satisfactory result mainly because the nursing professionals were able to see the classes in their available time regardless of their workload. This modality was presented as a concrete way for the knowledge of nursing professionals to associate theories with practice and scheduling this study into their daily lives.[33, 34]

These results show that the intervention promoted an improvement in the "Contribution to professional practice" domain greater than in "Increased confidence at work" although this, too, was at a high level, above 86% in all classes. Dehghani et al.[20] also demonstrated this gain in confidence in practice using a pre-test method. The nursing team trained in palliative care has greater self-confidence and higher performance.[35]

The curricula of nurse professonals programs are deficient in palliative and end-of-life care. It is not administered as a course but in isolated lectures. However, the demand for nursing competence in palliative care is increasing and education system should prepare better the caregivers. Confidence in professional performance by the nursing team can be considered an essential point in palliative care and this study sought to strengthen this aspect enhancing access to knowledge through distance learning. Although this study did not measure the degree of confidence before and after the intervention, the data demonstrate the effectiveness of the project. Our study showed that this type of educational intervention is well accepted by nurse professionals and our results could be aplicated to regions distant from centers with specialist services. This educational strategy with a previous analysis of the needs of certain groups may allow to address specific community deficiency.

Limitations of this study are the small number of participants, only one medical center involved, the only one evaluation after DE video lessons and there was no scheduled video meeting to promote active communication between nursing professional and instructors. The former point could increase the rate of improving the PC knowledge of nursing professionals.

Some recommendations may be done. More studies are necessary in this field with a greater number of participants therefore the results can be generalized to others. More topics about PC should be assessed and it is necessary to have more organized interfaces to connect nursing professionals and tutors systematically to trigger doubts, questions and discussion about local needs and planned educational intervention.

Improving the process of continous education and access to referral centers with telemedicine this type of technology may allow timely urgent measures and referral to specialized care centers. In addition to presenting the results of this intervention with a nursing team, this study also documents the efficacy of distance learning for healthcares during periods of pandemic as we face nowadays.

5. Conclusion

Nursing team may need more knowledge about palliative care in both theoretical and practical aspects. Distance education process for nursing technicians is feasible, both for theoretical knowledge and practical aspects. Distance education is well accepted and promotes an increase of knowledge by up to a third on palliative care issues, in addition to promoting a high degree of self-confidence among professionals.

Conflicts of Interest Disclosure

The authors declare that there is no conflict of interest.

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