Research Article

Impact of a pharmacist-led palliative care education program focused on the appropriate use of opioids in Vietnam

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ABSTRACT

Providing palliative care service involves ensuring adequate pain control, which may necessitate the use of opioids. Vietnam has a long history of limited availability of opioids, resulting in healthcare providers' inexperience and discomfort with prescribing them. This leads to unnecessary patients suffering due to undertreatment of pain. This cross-sectional study examined the impact of the first pharmacist-led online education program in a university hospital in Vietnam on learners' knowledge and perceived confidence in managing opioids for analgesia in the palliative care setting. Participants filled out a voluntary survey utilizing a five-point Likert scale, within one week of completing the program. We used descriptive statistics and multiple linear regression models to analyze the data. Of the 480 participants enrolled, 28.3% completed the post-course survey. On a scale of 1 to 5, participants reported positive scores in all endpoints, with a mean score ranging from 3.57 ± 0.99 to 3.96 ± 0.83 . Significant improvement was seen in confidence with using opioids after the course (p<0.001). Increased confidence was positively correlated with improvement in knowledge of palliative care (p=0.035), weighing the benefits versus risks of using opioids (p=0.044), and recognizing of barriers to opioid accessibility (p=0.032). The program resulted in high satisfaction in the quality of the education, with a mean score of 4.44 ± 0.66 . In conclusion, an online palliative care education program focused on the safe and effective use of opioids in the palliative care setting was significantly effective at improving knowledge and effective among Vietnamese healthcare providers.

Keywords:

Palliative care, Vietnam, Opioids, Pharmacist

1. INTRODUCTION

The global burden of inadequate pain relief is a critical public health issue¹. The World Health Organization (WHO) estimates that 79 percent of the world's population, mainly in low- and middle-income countries consumed only 13 percent of the total amount of morphine used for the management of pain and other distressing symptoms². Thus, terminal cancer patients in these

countries are still suffering from suboptimal pain management³. Ensuring adequate pain control, a crucial component of palliative care, cannot be achieved without improving the availability and accessibility of opioid analgesics, which are also a major challenge in resourcelimited settings like Vietnam⁴. Opioids tend to be associated with serious side effects, which combined with social, cultural, and historical factors, has led to what is known as "opiophobia" - a set of inappropriate attitudes

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and beliefs regarding the use of opioids for pain relief⁵. As a result, healthcare providers' inexperience and discomfort with prescribing opioids have led to the reduced prescription of these drugs and unnecessary suffering from patients⁶.

Among impediments to the use of opioids, a lack of training and awareness in medical professionals can further exacerbate the situation⁷. Providing training for clinicians, nurses, pharmacists, and healthcare students in the concept and necessity of palliative care, the appropriate use of opioids, and opioid prescribing regulations is one of the ways to alleviate opiophobia among healthcare providers in the future⁵. In Vietnam, although some training program was conducted like basic and advanced palliative care courses for physicians (collaborated with Harvard Medical School Center for Palliative Care) or workshops for provincial healthcare officials, there were few education programs for pharmacists⁵. Meanwhile, the American Society of Hospital Pharmacists (ASHP) emphasized the role of the pharmacist as an essential member of the interdisciplinary team in palliative care. In that team, pharmacists should be cognizant of the many regulatory requirements associated with controlled substances like opioids, medication reimbursement or disposal requirements, and active in the education and training of students, nurses, and clinicians of various disciplines⁸.

In light of the Covid-19 pandemic, The University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam collaborated with healthcare experts in the United States of America and created the first online Palliative Care Continuing Education Program for physicians, nurses, and an overwhelming majority of pharmacists in Vietnam, focusing on the rational use of opioid in palliative care. We therefore aim to examine if this program, which is rarely taught in didactic learning environments in pharmacy and medical schools in Vietnam, would change learners' knowledge and confidence in managing opioids.

2. MATERIALS AND METHODS

2.1. Participants and module designs

The education program provided a free virtual platform for physicians, pharmacists, and nurses across Vietnam, who have any interests in the topic of the program, regardless of their specialty, to raise their awareness about the appropriate use of opioids in cancer pain management. In total, 480 healthcare providers completed the education module with the vast majority of them being physicians (56.3%) and clinical pharmacists (26.3%). All of the learners were sent an email invitation to participate in a voluntary post-course survey within one week of completing the program. Emails were sent twice to remind the participants to complete the surveys.

The curriculum was created in 2020 and developed to train healthcare professionals on (1) the concept and necessity of palliative care in Vietnam (2) appropriate usage and dosing of opioid analgesics, (3) the barriers to opioids accessibility and availability, as well as current opioid prescribing regulations in Vietnam, (4) and the role of pharmacists in an interprofessional team in the palliative care setting.

The curriculum was developed by a team of ten healthcare experts in medicines and pharmacy in the United States of America and Vietnam. The team with the effective leadership and active participation of pharmacists discussed, revised, and finalized the design and content of the online program, based on particular clinical settings and the current availability of different opioids in Vietnam. The final curriculum consisted of four 3-hour sessions which occurred weekly throughout October 2020, with the lectures streamed live as well as recorded for viewers to access at their convenience (Table 1).

2.2. Measures

The survey included demographic questions related to participants' clinical role, place of work, work experience, and the availability of opioids at their health facilities. As for the majority of remaining questions, participants were asked to provide quantitative responses using a five-point Likert scale with 5 = "highest" about the impact of the program on:

- 1. Perception of improved knowledge of the role and necessity of palliative care, barriers regarding the use of opioids for analgesia, and the current legal regulations for opioid use in Vietnam after the program.
- 2. Perception of improved knowledge of safe and effective opioid use using questions based on objectives of lectures related to the use of opioids such as the ability to initiate, escalate and convert opioids after the program.
- 3. Confidence in using opioids in clinical practice before and after the program.
- Satisfaction of the quality of the program and its applicability in clinical practice. Additionally, an open-ended question was asked if the learners have any suggestions to make the program meet their learning needs.

2.3. Statistical Analysis

We used descriptive statistics to analyze the improvement in knowledge of learners, their confidence in using opioids, and their satisfaction after the program. The improvement in the confidence to manage opioids was assessed using paired t-test. Multiple linear regression models were generated to evaluate the relationship between the improvement in specific aspects of knowledge Table 1. The content of the online palliative care education program.

Lectures	Objectives
Session 1:	
Introduction and integration of palliative care in the healthcare system	Describe the concept, importance, current state of palliative care, and the way to integrate this service into the healthcare system
Introduction of palliative care in Vietnam	Understand the development process of palliative care and future challenges of this specialty in Vietnam
Deciding to initiate opioids in palliative care patients	Assess if patients are appropriate for opioid therapy and set expectations for them before initiating this medicine
Session 2:	
A step-by-step guide to opioid conversion	Differentiate between immediate-release and extended-release opioid formulations and utilize an equianalgesic opioid chart to convert between different opioids
Method for opioid dose escalation	Understand different methods to safely increase the dose of opioids after reaching the steady- state for optimal analgesia
Session 3:	
Ensuring patients safety with fentanyl transdermal patch	Demonstrate the unique pharmacokinetics, administration techniques, and safe disposal method of fentanyl transdermal patch
Using opioids in special patient populations	Determine an appropriate opioid dosing regimen in geriatric patients and identify the ways to approach opioid selection in patients with renal and hepatic impairment
Opioids for dyspnea in palliative care	Assess symptoms and utilize opioids for managing refractory dyspnea based on current guidelines
A case report of severe cancer pain	Manage pain crisis by modifying opioid treatment and convert intravenous morphine to fentanyl transdermal patches
Session 4:	
Possible ways forward for palliative care in Vietnam	Review the current state of global palliative care and focus on Vietnam and discuss future of this service
Role of clinical pharmacist in palliative care	Understand inventory management process with opioids, and benefits to have clinical pharmacist input
Opioids prescribing regulations	Identify barriers to opioid availability in Vietnam and differences between old and new prescribing regulations

Table 2. Demographic characteristics of the respondents (N=136).

	N (%)	
Profession		
Pharmacist	43 (31.6)	
Oncologist	40 (29.4)	
Physicians in other specialties	40 (29.4)	
Palliative care physicians	3 (2.2)	
Nurse	10 (7.4)	
Place of work		
North of Vietnam	40 (29.4)	
Central Vietnam	24 (17.6)	
South of Vietnam	63 (46.3)	
Unknown	9 (6.6)	
Availability of opioids at the place of work		
Yes	118 (86.7)	
No	10 (7.4)	
Unknown	8 (5.9)	
Prior experience to prescribe, dispense, manage, or instruct		
patients how to use opioid		
Yes	97 (71.3)	
No	39 (28.7)	

and the increase of confidence toward using opioids among health professionals after the course. All analyses were conducted using R (version 3.6.1) and results were evaluated at the 0.05 level of significance.

3. RESULTS

3.1. Quantitative Data

136 of 480 (28.3% response rate) participants completed the survey. Respondents spanned a wide range of geographical areas in Vietnam and were primarily identified as pharmacists (31.6%) and oncologists (29.4%). Only 2.2% of respondents self-identified as palliative care physicians. The majority of the participants came from the south of Vietnam (46.3%) and had experiences with the use of opioids (71.3%). The mean age of learners was 31.2 ± 6.3 years and the median work experience was 6.5 ± 6.2 years (Table 2).

Participants' responses to different questionnaire items are presented in Table 3 as frequency and percentage for each point in the Likert scale. Figure 1 describes the perception of learners toward the effectiveness of the program on different aspects of knowledge in the module. Overall, learners reported that their general understanding of palliative care and opioids (Figure 1A), perceived competence in using opioids in the palliative care setting (Figure 1B) improved as a result of completing the education program. Average scores across items ranged from 3.57 ± 0.99 to 3.96 ± 0.83 , corresponding to a higher level of "somewhat true". Besides, among different domains of knowledge, a significant proportion of participants agreed to rate the highest score (5/5) for their perception of improved knowledge in using opioids for pain crisis (50.0%), administering fentanyl transdermal patch safely and appropriately in clinical practice (30.1%), and differentiating when to use short-acting and long-acting opioid formulation (29.4%). As demonstrated in Figure 2, statistically significant improvement was seen in confidence in using opioids among healthcare providers after the course (P < 0.001).

Table 4 describes the results of the multiple linear regression analyses to determine factors correlate to the improved confidence of participants to use and manage opioids in palliative care. Controlling for other aspects of knowledge evaluated, greater improvement in confidence to use opioids in palliative care was significantly associated with the perception of improved knowledge of palliative care (definition, role, and necessity of this specialty in the future) (P=0.035), barriers to opioids availability and accessibility in Vietnam (P=0.032) and improvement in knowledge of weighing the benefits versus risks of using opioids (P=0.044).

The 136 participants' post-course evaluations demonstrated overall high satisfaction of the content of the program (mean score= 4.45 ± 0.66) and highly evaluated the applicability of the education program in clinical practice (mean score= 4.18 ± 0.76), indicating that the curriculum met participants' expectations and objectives.

Table 3. Learners' responses to Likert scale questionnaire items (N=136).

Scale*	1	2	3	4	5
	n (%)	n (%)	n (%)	n (%)	n (%)
Perception of improved knowledge of ⁽¹⁾ :					
Definition, role, and the necessity of	2 (1.5)	3 (2.2)	34 (25.0)	73 (53.7)	24 (17.6)
palliative care in Vietnam					
Barriers regarding the availability and	1 (0.7)	4 (2.9)	35 (25.7)	72 (52.9)	24 (17.6)
accessibility of opioids for analgesia					
Current opioids prescribing regulations in	2 (1.5)	9 (6.6)	29 (21.4)	63 (46.3)	33 (24.3)
Vietnam					
Perception of improved knowledge of how	to ⁽¹⁾ :				
Decide to initiate opioids for the	1 (0.7)	8 (5.9)	35 (25.7)	70 (51.5)	22 (16.2)
treatment of pain in palliative care					
Weigh the benefits versus risks of using	1 (0.7)	5 (3.7)	32 (23.5)	72 (52.9)	26 (19.1)
opioids					
Differentiate when to appropriately use	1 (0.7)	11 (8.1)	21 (15.4)	63 (46.3)	40 (29.4)
short-acting versus long-acting opioid					
formulations					
Utilize an equianalgesic chart to convert	0 (0.0)	8 (5.9)	33 (24.3)	65 (47.8)	30 (22.1)
between different opioids					
Formulate an appropriate opioid regimen	0 (0.0)	6 (4.4)	32 (23.5)	30 (22.1)	68 (50.0)
to pain crisis					
Utilize fentanyl transdermal patch	4 (2.9)	7 (5.1)	30 (22.1)	54 (39.7)	41 (30.1)
appropriately		4 (2.0)	(= (2 (2)		
Select an appropriate opioid dosing	3 (2.2)	4 (2.9)	47 (34.6)	52 (38.2)	30 (22.1)
regimen in special patient populations		0. (4.4)		11/22 1	
Utilize opioids appropriately in refractory	5 (3.7)	9 (6.6)	51 (37.5)	44 (32.4)	27 (19.9)
dyspnea	(2)				
Learners' confidence to use and manage o	pioids ⁽²⁾				4.4.4.0.5
Before the online education program	30 (22.1)	31 (22.8)	39 (28.7)	22 (16.2)	14 (10.3)
After the online education program	2 (1.5)	6 (4.4)	25 (18.4)	73 (53.7)	30 (22.1)
Learners' satisfaction with the quality of t	he program and	its applicability ⁽³⁾			
	0 (0.0)	1 (0.7)	10 (7.4)	52 (38.2)	73 (53.7)

*Scale measures and definitions:

⁽¹⁾ 1=not at all true, 2=slightly true, 3=somewhat true, 4=moderately true, 5=very true

⁽²⁾ 1=not confident at all, 2=slightly confident, 3=somewhat confident, 4=moderately confident, 5=very confident

⁽³⁾ 1=very dissatisfied, 2=dissatisfied, 3=neutral, 4=satisfied, 5=very satisfied

Table 4. Relationship between improvement in confidence to use and manage opioids for analgesia and perception of improved different aspects of knowledge among respondents.

	Improvement in to use and manage opioids for analgesia		
	Standardized β	P value	
A. Perception of improved knowledge of:			
Definition, role, and the necessity of palliative care in Vietnam	0.296	0.035	
Barriers regarding the availability and accessibility of opioids for analgesia	0.319	0.032	
Current opioids prescribing regulations in Vietnam	-0.032	0.779	
B. Perception of improved knowledge of how to:			
Decide to initiate opioids for the treatment of pain in palliative care	-0.226	0.113	
Weigh the benefits versus risks of using opioids	0.307	0.044	
Differentiate when to appropriately use short-acting versus long-acting	-0.012	0.924	
opioid formulations			
Utilize an equianalgesic chart to convert between different opioids	0.034	0.834	
Formulate an appropriate opioid regimen to pain crisis	-0.220	0.162	
Utilize fentanyl transdermal patch appropriately	-0.210	0.117	
Select an appropriate opioid dosing regimen in special patient populations	0.164	0.336	
Utilize opioids appropriately in refractory dyspnea	-0.244	0.066	



Figure 1. Learners' responses to 5-point Likert scale questionnaire regarding the perception of improved knowledge among participants after the education program.



Figure 2. Results of the level of learners' confidence to use and manage opioids pre and post education program, using paired t-test (P<0.001=significant).

3.2. Qualitative data

Learners also left several qualitative evaluation responses on different aspects of the program and the desire to return to their healthcare facilities to implement more training in palliative care. Below are some types of feedback from the participants:

3.2.1. Perceptions of educational content and its applicability

"The course material was useful and relevant to my work. I attended all the sessions during the program since it enabled me to be more confident in administering morphine, which I as well as my colleagues hardly ever used for cancer pain relief despite the availability of this medicine in my hospital." (Respondent 2)

"The course was highly applicable and beyond my expectations. My father had been lucky to not suffer from any pain during his battle with cancer before he died. I felt that hospice and palliative care are necessary services that should be covered by public health insurance and oral morphine should be considered as essential in hospital formulary." (Respondent 51)

"More specific cases demonstrating the use of opioids in special patient populations or patients with multimorbidity" (Respondent 79)

3.2.2. Perceptions of the educational method

"Although learning online was not interactive, holding an online education program amid Covid-19 pandemic with easy access would be advantageous and convenient for me to reaccess and replay recorded videos for the whole course." (Respondent 15) "Sending the documents and lectures before each session would be beneficial for me to follow and absorb the knowledge. That way also facilitates me to be more interactive and proactive during the learning process. (Respondent 76)

"Although this course is great and necessary, its time coincided with that of another course, I was not able to participate in the live course and discuss directly with experts. Fortunately, I can return to the course thanks to recorded videos. Because this specialty is new in Vietnam, I hope that more topics in palliative medicines would be included in upcoming programs." (Respondent 127)

3.2.3. Suggestions for the future direction of education activities

"More opportunities to invite and collaborate with such well-experienced clinical pharmacists in developed countries to learn from their clinical pharmacy model and develop interprofessional education in Vietnam." (Respondent 38)

Holding more continuing education programs in the collaboration between physicians and clinical pharmacists. Not only were the courses like this useful and persuasive in terms of providing knowledge, but this is also a wonderful way to inspire and motivate clinical pharmacy activity in Vietnam." (Respondent 109)

4. DISCUSSION

This study supports the positive influence of a pharmacist-led continuing education program on the improvement of knowledge of palliative care and the appropriate use of opioids, the special controlled substances but essential for symptom management in terminally ill cancer patients. Healthcare providers' confidence in using and managing opioids was also improved after the program (P<0.001). Our results also build the growing evidence to support that continuing medical education program is one such effective method of the approach to pain care⁹⁻¹⁰.

Furthermore, findings from the regression analyses provide insight into the influence of improvements in different aspects of knowledge toward improvement in confidence with opioid use. Of note, increased confidence to manage opioids was positively associated with improvement in the general understanding of palliative care in Vietnam, recognition of barriers regarding the availability and accessibility of this medication, and improvement in considering the benefits and risks of using opioids, highlighting these modules as pivotal objectives for upcoming educational activities in the palliative medicine.

The early stage of palliative medicine encountered restricted availability of opioid use in pain management because of national regulations. Cicely Saunders, the founder of modern hospice programs, is also the first leading advocate for the palliative care movement¹¹. Afterward, the model of palliative and end-of-life care slowly spread out to more countries. Health professionals have gradually recognized the effectiveness of this new medical specialty in terms of improving patients' quality of life¹². Thanks to support from the U.S., endeavors to make pain relief and palliative care more accessible in Vietnam officially began in 2004¹³. This made Ministries of Health in Vietnam more cognizant of the concept of palliative care⁵. In 2005, the Vietnam Ministry of Health convened a Palliative Care Working Group adopted the WHO public health strategy for national palliative care programs in which education is determined as one of the four major components of the WHO Public Health Model (together with policy, essential drug availability, and implementation of pain relief and palliative care services) and must be addressed to effectively integrate palliative care into the healthcare system¹. Analyses in five provinces in Vietnam showed that clinicians lacked adequate training in pain relief with an escalated fear of prescribing opioids for cancer patients and only 57% of healthcare workers caring for patients with HIV/AIDS and cancer had been trained in using and managing opioids appropriately¹⁴. Of those, only 26% could identify correct pain management strategies¹⁴. The majority of training programs were either primarily for public health department leaders or provincial hospital directors to familiarize them with the Vietnam Ministry of Health guidelines on palliative care and opioid prescribing regulations and to dispel their opiophobia^{5,14}. There is little training for pharmacists as well as curriculum in pharmacy school in Vietnam does not introduce the importance of palliative care and the relief of suffering by using opioids safely. Thus, while morphine and opioid-related products are amongst "taboo" topics in Vietnam and controlled drug prescriptions are restricted, not having a general understanding of the definition, role, and necessity of palliative care, a specialist care field that is still in the initial setup phase in Vietnam, healthcare providers are less likely to be confident in prescribing, dispensing or instructing patients to use this medication. A comprehensive education in the form of an integrated curriculum in medicine and pharmacy school introducing palliative care might promote changes in knowledge and attitudes toward using opioids for pain control¹⁵⁻¹⁶.

Knowledge of barriers to opioid accessibility in Vietnam was also associated with the improvement of confidence to use opioids for symptoms management, potentially because when these barriers are recognized, health care providers are more likely to be aware of opioids as an indispensable treatment in the management of intractable pain associated with inoperable diseases. In Vietnam, because of the sociohistorical context of opioids, physicians who even had permission to prescribe feared prescribing it, pharmacists did not stock it which resulted in rare opioid prescriptions outside of the hospital and extremely limited availability of oral morphine. Moreover, district hospital pharmacies were not permitted to dispense medicines directly to the public⁵. Therefore, people with cancer and HIV/AIDS who are not able to afford hospitalization or prefer to be cared for at home can suffer from unrelieved pain and dyspnea¹⁴. In addition to this, some hospitals in Vietnam, misinterpreting regulations, and even have imposed greater restrictions on opioid prescriptions than the law requires. Some healthcare providers discouraged the use of morphine in patients by not ordering and stocking the medicine in the hospital pharmacy because of the fear of being investigated for opioid diversion¹⁴. This irrational fear of using opioids for pain relief and unduly restrictive regulations for morphine led to poor availability of this medication for pain management, which is a human right and ethical duty of the health care system¹⁷. Therefore, understanding and recognizing barriers leading to the unavailability and inaccessibility of opioids in Vietnam should be one of the major objectives in palliative care and pharmacy training courses to alleviate negative connotations of opioids and enhance confidence in rational use of this medication.

Improved knowledge to weigh the risks versus benefits of using opioids was associated with increased confidence to use opioids in palliative care settings. This finding is encouraging since it suggests that having an in-depth knowledge of the adverse effects and benefits regarding the use of opioids facilitates good communication with patients and families who have concerns about opioid use or associate opioids with addiction or imminent death. This also makes physicians more comfortable prescribing opioids and pharmacists more confident to dispense this medication for patients living with cancer or advanced illness¹⁸⁻¹⁹. In Vietnam, opiophobia is prevalent with the exaggerated fears that morphine and other opioids will harm patients by causing respiratory depression or addiction¹⁴. Meanwhile, opioids, inexpensive medicines, rarely cause side-effects that cannot be easily managed, do not lead to dependence in the vast majority of patients, and more importantly, play the central role for a holistic pain management strategy ^{14,20}. Common side effects of opioids include constipation, nausea, and vomiting²¹. Tolerance and physical dependence are terms to describe the normal progresssion of the body becoming used to the opioids' effects over time while opioid-induced respiratory depression is rare if appropriately dosed and certain patients are more at risk of developing this adverse effect than others²¹. Knowing which side effects are rare and preventable and identifying patients at higher risk of side effects allows us to not only minimize unbearable effects but also succeed in pain management.

Although pharmacists were more utilized in palliative care service in developed countries and the clinical pharmacy service have been still in its infancy in developing countries¹², clinical pharmacists have shown that with the proper educational background, they may assist in the monitoring and evaluating of opioid therapy in any practice settings²². They can contribute to developing opioid risk mitigation strategies and providing education to patients and other healthcare providers about the management of opioid-induced side effects in a multidisciplinary team²²⁻²⁴. Our program was a testament to the role of pharmacists in palliative care.

Our study has some potential limitations. There was only 28.3% of learners voluntarily response to the survey indicating that the findings and results may not represent all participants. However, this response rate is similar to those observed in the previous study using the web-based data collection method $^{25-26}$. In addition, the geographical diversity of this study population from the north to the south of Vietnam and multidisciplinary participation of health care workers from communelevel health posts to national hospitals in Vietnam on an online platform may give us highly generalized outcomes. Another limitation of this study is that evaluations of changes in knowledge and attitudes toward using opioids of learners with the survey within one week of completing the curriculum may not allow them to better assess the impact of the education program since they have not applied all the knowledge in clinical practice. However, the too long duration of time between the learning experiences and survey completion can create recall bias and outside influences on knowledge and practice such as participating in other similar training²⁵. Furthermore, the use of self-report to evaluate knowledge, and confidence improvement in using opioids can be not as valid and reliable as using validated instruments or providing more objective measurable outcomes in clinical practice such as how many health care staffs established palliative care services at their home institutions or evidence of building up guideline to the safe use of opioids for terminally ill patients, and the availability of sufficient morphine supply.

5. CONCLUSION

Although education is considered a weak intervention for practice change, it still plays a central role in the attitude transformation of the approach to pain care and should be part of routine clinical practice²⁷⁻²⁸. Because curriculum in health science schools in Vietnam does not emphasize enough the ethical duty to relieve the pain and suffering as well as do not devote substantial time to educate about pharmacotherapy of opioids, developing and holding the very first online palliative care education program focused on the rational use of opioids in Vietnam with the participation of healthcare workers across different professions can greatly benefit learners in patient care. Although there are certain limitations regarding the methods of this study, the ultimate quantitative and qualitative results show that holding such educational activities in palliative care is needed on way to make this service more accessible to patients with incurable diseases and short expected time left to live. Pharmacists play a leading role in the interdisciplinary development of algorithms to standardize the approach to initiating, selecting, and dosing opioids safely for the management of pain and refractory dyspnea. Nurse practitioners, physicians, and other members of the palliative care team can also benefit from their expert knowledge through in-service or continuing education programs hosted by the health system or area professional organizations⁸.

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Conflict of interest

All authors declared no conflict of interest in this study.

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Ethical approval

None to declare. This study was a evaluation of education and did not therefore require formal ethics committee approval. All participants were informed that participation in the survey was voluntary, anonymous, and refusing to complete the course would not affect the course grade. Completion of the survey implied acceptance of informed consent.

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