

Original Article

Palliative Care—Related Knowledge, Attitudes, and Self-Assessment Among Physicians in Vietnam



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Abstract

Context. Palliative care is rarely accessible in low- and middle-income countries, and lack of adequate training for health care providers is a key reason. In Vietnam, the Ministry of Health, major hospitals and medical universities, and foreign physician-educators have partnered to initiate palliative care training for physicians.

Objectives. To measure the baseline palliative care—related knowledge, attitudes, and self-assessment of Vietnamese physicians as a basis for curriculum development and to enable evaluation of training courses.

Methods. Before palliative care training courses in Vietnam from 2007 to 2014, we collected data on the participating physicians' demographics, self-assessed competence in palliative care, and palliative care—related knowledge and attitudes. Scores were calculated in three outcome categories—knowledge, attitudes, and self-assessment—and in two subcategories related to physical and psychological symptoms. Associations between the demographic, education, and practice factors and these scores were assessed using linear regression.

Results. Among the 392 physicians surveyed, concern about untreated suffering was highly prevalent. 85% felt that most patients with cancer in Vietnam die in pain. On self-assessment, only 8% felt adequately trained in palliative care and the mean knowledge assessment score was 44%. Although 77% had prescribed an opioid in the past year and most had appropriate attitudes toward the use of morphine for pain, the majority reported explicit or implicit restrictions on prescribing morphine.

Conclusion. There is a great need among Vietnam's physicians for training in palliative care and especially in nonpain and psychological symptom control. Rational, balanced, and clear opioid-prescribing policies are needed to enable physicians to treat pain without fear of repercussions. *J Pain Symptom Manage* 2019;58:1015–1022. © 2019 Published by Elsevier Inc. on behalf of American Academy of Hospice and Palliative Medicine.

Key Words

Palliative care, medical education, opioids, Vietnam, global health

Introduction

In 2014, the World Health Assembly (WHA) resolved that “palliative care is an ethical responsibility of health systems” and that it is an “ethical duty of

health care professionals to alleviate pain and suffering.”¹ Yet, although palliative care is widely available in most high-income countries, it is rarely accessible in low- and middle-income countries (LMICs).^{2,3} Lack of palliative care training for health

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care providers in LMICs is a major reason for this enormous and unethical gap between rich and poor.^{4–7} Although some training programs have begun in LMICs, we know of little empirical data on the specific palliative care training needs of physicians in LMICs.^{8–13} As part of a palliative care training program for Vietnamese physicians, we studied their baseline palliative care–related knowledge, attitudes, and self-assessment.

In 2005, Vietnam’s Ministry of Health launched a palliative care initiative with support from the U.S. President’s Emergency Plan for AIDS Relief and technical assistance from one of us (E. L. K.), a foreign palliative care physician-educator.¹⁴ A rapid situation analysis, published in 2006, revealed that severe pain was very common among patients with AIDS and cancer in Vietnam and also that availability of opioid analgesics and palliative care services were severely limited and clinicians lacked palliative care training.¹⁵ Working with the Vietnam Ministry of Health and several major hospitals, the palliative care physician-educator and colleagues from Harvard Medical School planned three curricula in palliative care: a five-day basic course, an advanced and refresher course, and a Fellowship and Certification Program in Palliative Medicine. To tailor our curricula to the specific needs of our Vietnamese physician trainees, we needed more information about them.

Methods

We designed a survey to study the palliative care–related knowledge, attitudes, and self-assessed competence of our physician trainees immediately before the basic course. Knowledge, attitude, and practices surveys are a standard quantitative method to uncover misconceptions or misunderstandings in a specific population about a specific topic that may represent obstacles to implementation of a new activity or potential barriers to behavior change.^{13,16} The survey questions were created by a group of six American physicians with expertise in palliative care with the goal of assessing knowledge of all basic aspects of palliative care and attitudes toward palliative care. The survey development group reviewed existing literature and curricula in basic palliative care education to help assure that all basic aspects of palliative care were addressed.^{17,18} The group used consensus as a first step to maximize content validity. The initial survey was then reviewed and revised by two bilingual Vietnamese physicians in consultation with the development group to assure relevance to the clinical and cultural context of Vietnam and to further enhance content validity. The same Vietnamese physicians then translated the surveys into Vietnamese using

consensus. The survey was piloted with a group of 13 Vietnamese physicians, and minor wording changes were made to maximize clarity and local applicability and eliminate redundancy.¹⁹ Because these changes would not affect the scoring, their survey results were also included in the final analysis.

The demographics, education, and experience in palliative care were treated as independent variables to enable identification of associations with palliative care–related knowledge, attitudes, and self-assessment. Our main measure of practice was volume of opioid prescriptions in the past year. We dichotomized into the following categories: in the past year, had the participant 1) prescribed any opioid (oral or IV morphine, pethidine, or fentanyl); 2) prescribed oral morphine for either pain or dyspnea; 3) prescribed IV or oral morphine for pain; and/or 4) prescribed IV or oral morphine for dyspnea?

The survey had three categories of outcome variables: self-assessment, knowledge, and attitudes (Table 1). Each category was further divided into two main subcategories: (A) “pain, other physical symptoms, and opioids” and (B) “psychological, social, and spiritual distress, ethics, communication, and palliative care principles.” For self-assessment, there was a third subcategory regarding practice of palliative care. Knowledge questions were either multiple choice with one best answer or true/false. They were grouped into the two main subcategories. The attitudes section measured agreement with statements on a four-point Likert scale, from strongly agree to strongly disagree. There were two distinct types of attitudes questions: those with a medically appropriate answer (e.g., “Morphine is a medically appropriate medication to treat moderate-to-severe pain”) and those that explored a physician’s concerns, which did not have a correct answer (e.g., “I am worried about prescribing morphine because my supervisors might not approve”). The questions with a medically appropriate answer were separated into the two main subcategories. The questions about physicians’ concerns addressed either morphine access or morphine prescribing.

Cronbach’s alpha was calculated across the three categories and two main subcategories to assess internal consistency. Self-assessment questions had a very good internal consistency (Cronbach’s alpha = 0.85). Attitudes questions for morphine prescription or access had an acceptable consistency (Cronbach’s alpha = 0.74). Medically appropriate attitudes questions (Cronbach’s alpha = 0.52) and knowledge questions (Cronbach’s alpha = 0.44) need improvement to make questions more consistent.

We calculated scores for each subcategory. Self-assessment questions were either on a three- or four-point Likert scale, and the highest self-assessment

Table 1
Survey Design

Topic Categories					
Independent Variables			Outcome Variables		
Demographics	Formal Education in Palliative Care	Practice Experience in Palliative Care	Self-Assessment	Knowledge	Attitudes
<ul style="list-style-type: none"> • Basic (age, sex) • Educational (degree, year of graduation) • Clinical (area of training, work, institution, patient volume) 	<ul style="list-style-type: none"> • Number of formal lectures in palliative care and pain treatment 	<ul style="list-style-type: none"> • Opioid-prescribing experience 	Subcategory A: <ul style="list-style-type: none"> • Pain Treatment • Nonpain symptom Treatment • Opioids Subcategory B: <ul style="list-style-type: none"> • Communication and information sharing (about death, breaking bad news) • Psychological problems of dying patients (including delirium) • Bereavement Subcategory C: <ul style="list-style-type: none"> • The practice of palliative care • Palliative care for patients with cancer • End-of-life care for patients with HIV 	Subcategory A: <ul style="list-style-type: none"> • Pain treatment • Nonpain symptom treatment • Opioids Subcategory B: <ul style="list-style-type: none"> • Palliative care principles • Palliative care assessment • Information sharing • Treatment of psychological, social, and spiritual distress 	Medically appropriate answers <ul style="list-style-type: none"> • Pain treatment • Nonpain symptom treatment • Opioids Subcategory B: <ul style="list-style-type: none"> • Palliative care principles • Ethics and information sharing • Treatment of psychological, social, and spiritual distress • Caregivers and bereavement Physicians' concerns <ul style="list-style-type: none"> • Morphine access: Availability and cost • Morphine prescribing: Acceptance and supervisor approval

Questions assessed palliative care across the following patient groups: patients with HIV/AIDS, cancer, and injection drug use.

received a value of 3 or 4, depending on the question. For knowledge questions, correct answers received a value of 1 and incorrect answers a value of 0. For attitudes questions, each individual question could have a value of 1 to 4. In questions where there was a medically appropriate answer, the most appropriate answer was scored as a 4. In questions measuring physician concern, the highest level of concern was scored as a 4. Scores were considered missing if the subject answered less than 50% of the questions in that subcategory. If they answered more than 50%, their response was counted and missing values were handled in the following manner: for self-assessment questions, the lowest self-assessment score was assigned to missing values; for knowledge, a score of zero was assigned to missing values; and for attitudes, the missing values were imputed with the average score across completed items.²⁰ Total scores for self-assessment, knowledge, and attitudes were calculated across all questions in the category.

Data Collection

From 2007 to 2014, we held several basic palliative care courses each year, 18 courses in total, in

collaboration with major general hospitals, cancer centers, HIV/AIDS centers, and medical schools around the country. Physician participants were sent from hospitals, cancer and HIV/AIDS centers, clinics, and medical schools around the country. At some training sites, nurses, pharmacists, physical therapists, physician assistants, or medical students participated, but these surveys were excluded from analysis, as well as any surveys that did not state a degree. Of a total of 508 participants who completed the survey, 392 self-identified as physicians.

Statistical Methods

Demographics were reported with frequency and percentage. The scores were reported with mean and standard deviation. Univariable association between each demographic factor and the scores were assessed using linear regression. A reduced *P* value of <0.0014 was considered "statistically significant" for the assessment of 35 factors derived from the survey (demographics and education/experience in palliative care indicated in Table 2) for each outcome. All statistical analysis was performed using SAS® v9.4 (Cary, NC). The study was deemed exempt from

Table 2
Demographics, Educational/Work Background, and
Opioid-Prescribing Patterns of Physicians Who
Participated in Training (N = 392)

Characteristic	N (%)	% Missing
Age		3.7
20–30	138 (36.5)	
31–40	133 (35.2)	
41–50	85 (22.5)	
>50	22 (5.8)	
Sex		8.9
Male	211 (59.1)	
Female	146 (40.9)	
Degrees		2.0
Medical school only	243 (63.3)	
Postgraduate ^a	141 (36.7)	
Year graduated from medical school		3.1
Before 2006 ^b	244 (64.2)	
2006 and later	136 (35.8)	
Area of clinical training (could select multiple)		8.9
General adult medicine	137 (38.4)	
Pediatrics	41 (11.5)	
HIV/AIDS or infectious or tropical diseases	85 (23.8)	
Cancer	143 (40.1)	
Other	98 (27.5)	
Type of work (could select multiple)		2.0
Clinical general adult medicine	119 (31.0)	
Clinical pediatrics	24 (6.3)	
Clinical HIV/AIDS care and treatment	59 (15.4)	
Clinical cancer care and treatment	139 (36.2)	
Clinical palliative care	14 (3.7)	
Clinical pain management	13 (3.4)	
Research	10 (2.6)	
Teaching in a medical school	20 (5.2)	
Other	63 (16.4)	
Primary institution (could select multiple)		1.5
National or regional hospital	114 (29.5)	
Provincial hospital	198 (51.3)	
District hospital	17 (4.4)	
HIV/AIDS outpatient clinic	37 (9.6)	
Private clinic or practice	11 (2.9)	
Medical school	16 (4.2)	
Treated ≥20 ^c patients for AIDS in the past three months	57 (18.0)	19.1
Treated ≥20 ^c patients for cancer in the past three months	133 (39.2)	13.5
Provided ≥20 ^c HIV/AIDS or cancer patients with palliative care in the past three months	76 (23.0)	15.6
Number of lectures heard on general palliative care in medical school		18.9
None	221 (69.5)	
0–5	93 (29.2)	
>5	4 (1.3)	
Number of lectures heard on general palliative care since graduating from medical school		8.2
None	126 (35.0)	
0–5	192 (53.3)	
>5	42 (11.7)	

(Continued)

Table 2
Continued

Characteristic	N (%)	% Missing
Number of lectures heard on treatment of pain in medical school		18.4
None	156 (48.8)	
0–5	144 (45.0)	
>5	20 (6.3)	
Number of lectures heard on treatment of pain since graduating from medical school		8.2
None	101 (28.1)	
0–5	216 (60.0)	
>5	43 (11.9)	
Prescribed any opioids in the past year	253 (76.7)	15.8
Prescribed oral morphine for either pain or dyspnea in the past year	155 (52.0)	24.0
Prescribed IV or oral morphine for pain in the past year	227 (69.9)	17.1
Prescribed IV or oral morphine for dyspnea in the past year	91 (31.9)	27.3

^aPostgraduate medical training consisted of clinical residency/fellowship or advanced degree in a clinical discipline.

^b2006 was the year the rapid situation analysis was released and national palliative care policy work began.

^c20 patients was a cutoff chosen based on general knowledge of participants' practice volume.

approval by the institutional review board at Harvard Medical School (CHS Study Number M10008–113) and approved by the Ministry of Health of Vietnam.

Results

Demographics, Educational/Work Background, and Opioid-Prescribing Patterns

Background data on the 392 physicians surveyed are shown in [Table 2](#). About one-third worked in clinical cancer cares, one-third in general adult medicine, and 15% in HIV/AIDS care. About half worked at provincial hospitals, followed by 30% in national or regional hospitals and a smaller minority in HIV clinics (10%). Most had no postgraduate certification or degree and had not received any formal lectures in palliative care in medical school. Most had prescribed some form of opioid in the past year, and of this group, 90% had prescribed either IV or oral morphine for pain. Prescription of oral morphine or of morphine for dyspnea was less common.

Overview of Scores

[Table 3](#) presents the palliative care–related knowledge, attitudes, and self-assessment of the participants. Participants had medically appropriate attitudes 75% of the time. However, on average, they were able to correctly answer only 44% of the knowledge questions. Only 8% believed they had adequate training in

Table 3
Mean Knowledge, Attitudes, and Self-Assessment Scores

Test Area	Number of Survey Items	Maximum Possible Score	Actual Score Range	Mean Score \pm SD (Mean Score as %)	% Missing
Knowledge total score	31	31	4–25	13.7 \pm 3.6 (44%)	7.4
Pain, other physical symptoms, and opioids	21	21	0–18	8.8 \pm 3.0 (42%)	2.6
Psychological, social, and spiritual distress & ethics, communication, and palliative care principles	10	10	0–9	4.5 \pm 1.7 (45%)	3.8
Attitudes					
Medically appropriate attitudes	15	60	30.7–59	45.2 \pm 4.7 (75%)	4.8
Pain, other physical symptoms, and opioids	7	28	9–28	21.0 \pm 3.2 (75%)	4.1
Psychological, social, and spiritual distress & ethics, communication, and palliative care principles	8	32	16–32	24.3 \pm 2.8 (76%)	3.1
Concerns about morphine access	2	8	2–8	6.0 \pm 1.8 (75%)	2.8
Concerns about prescribing morphine	3	12	3–12	8.1 \pm 2.6 (68%)	3.8
Self-assessment total score	13	41	13–38	21.2 \pm 5.0 (52%)	6.4
Pain, other physical symptoms, and opioids	5	16	5–16	8.0 \pm 2.2 (50%)	
Psychological distress	5	16	5–16	9.1 \pm 2.5 (57%)	
Practice of palliative care	3	9	3–9	4.1 \pm 1.3 (46%)	

palliative care, and only 11% felt they had adequate training in pain treatment.

Self-Assessment

Participants' self-assessment score was 50% for topics in Subcategory A ("pain, other physical symptoms, and opioids"), 57% for topics in Subcategory B (psychological, social, and spiritual distress, ethics, communication, and principles), and 46% for the practice of palliative care.

Only 47% of the physicians reported at least average understanding of using morphine to treat moderate-to-severe pain, 21% for moderate-to-severe dyspnea, and 13% for moderate-to-severe pain or dyspnea in patients with a history of opioid use disorder. In response to the statement "I feel competent using morphine for dying patients," only 4% agreed strongly, another 46% agreed slightly and 31% disagreed strongly. Self-rated competence for this question was significantly higher among physicians who had prescribed an opioid than among those who had not ($P < 0.0001$). However, 41% of physicians who had prescribed oral morphine still had concerns about their competence.

Only 50% of physicians reported at least average understanding of problems associated with bereavement, 46% for psychological problems of dying patients, and 34% for diagnosis and treatment of delirium.

A variety of demographic factors were significantly associated with higher total self-assessment score. These included having training in cancer care ($\beta = 1.86$, $P = 0.0008$), clinical experience in palliative care ($\beta = 4.82$, $P = 0.001$), working at a national or regional hospital ($\beta = 2.21$, $P = 0.0001$), having attended formal lectures in palliative care or pain

treatment since graduating from medical school ($\beta = 3.21$, $P < 0.0001$), and experience prescribing opioids ($\beta = 3.04$, $P < 0.0001$).

Knowledge

Physicians scored similarly low on knowledge questions in Subcategory A (42% correct on average) and Subcategory B (45% correct on average).

Almost all participants could identify a typical indication for starting morphine, and 79% had at least some knowledge of the WHO pain relief ladder.²¹ However, only 43% could recognize the usual starting dose of morphine for adults, only 27% knew that patients do not become tolerant to the constipating effect of opioid, only 24% knew how to calculate a rescue dose of morphine for breakthrough pain, only 11% could recognize a stimulant laxative widely available in Vietnam from a list of laxatives, and only 10% knew the meaning of pseudo-addiction. Knowledge of treatment for physical symptoms other than pain also was limited. Only 25% were able to recognize correctly a list of medicines to treat nausea, only 19% recognized that haloperidol acts on dopamine receptors, and only 15% knew that an anticholinergic medicine widely available in Vietnam (hyoscine butylbromide) is a good treatment for terminal respiratory secretions. Only 43% knew when palliative care should be initiated. Regarding knowledge of psychological symptoms, only 17% chose haloperidol as the best medical treatment for acute delirium from a list of other medicines that tend to cause delirium.

Demographic factors associated with higher knowledge scores included graduation from medical school after 2006 ($\beta = 1.45$, $P = 0.0003$), younger age

($\beta = 0.12$, $P < 0.0001$), training in cancer care ($\beta = 1.79$, $P < 0.0001$), clinical experience in cancer care ($\beta = 1.83$, $P < 0.0001$), and experience prescribing oral morphine ($\beta = 1.41$, $P = 0.0010$). Factors associated with lower knowledge scores included working in general adult medicine ($\beta = -1.39$, $P = 0.0008$) or having training or experience in HIV/AIDS care ($\beta = -1.59$, $P = 0.0009$ and $\beta = -1.90$, $P = 0.0013$ respectively).

Attitudes

Physicians had higher scores on attitudes questions in both Subcategories A (mean score of 75% for medically appropriate attitudes) and B (76%) (Table 3). Attitudes about morphine therapy were especially positive and appropriate. 93% of physicians agreed either slightly or strongly that morphine is medically appropriate to treat moderate or severe pain in palliative care, and 85% agreed that the same is true for a dying patient despite a history of opioid use disorder. 81% agreed that morphine is effective for treating dyspnea in patients with cancer, and 73% agreed that the same is true for any dying patient with dyspnea despite a history of opioid use disorder.

Attitudes about treatment of psychological distress were less appropriate than those about treatment of pain. 54% agreed with the statement that it is not possible to treat acute delirium with medicine, and 76% that persistent symptoms of depression are normal at the end of life.

Importantly, the physicians reported high levels of concern about access to morphine therapy for patients and about prescribing it. 85% agreed that most patients with cancer die in pain, and 77% agreed that this occurs because morphine is not readily available. They also provided insight into this lack of availability. 75% agreed that morphine is “difficult to prescribe” in Vietnam, 61% that morphine is not yet accepted as a standard treatment for pain, and 52% that their supervisors might not approve when they prescribe morphine. Concern that prescribing morphine for pain is not yet standard practice or would meet with disapproval by a supervisor was strongly associated with working in HIV/AIDS care ($\beta = 1.88$, $P \leq 0.0001$) and general adult medicine ($\beta = 0.93$, $P = 0.0012$). There was an equally strong association between *lack* of concern about prescribing morphine and working in cancer care ($\beta = -1.69$, $P < 0.0001$).

Younger age and working in cancer care were associated with a higher overall score on the attitudes section ($\beta = 0.15$, $P < 0.0001$), whereas working at the district level was associated with a lower score ($\beta = -4.42$, $P = 0.0004$).

Discussion

The ethical imperative of expanding access to palliative care in LMICs requires training physicians in palliative care, and optimum training requires understanding of physicians’ baseline knowledge and attitudes. Ours is the first survey of palliative care-related knowledge and attitudes of physicians in Vietnam and one of the first from LMICs. Most physicians in our study had positive attitudes toward palliative care, and 65% recognized that palliative care should not be limited to actively dying patients. In addition, most were concerned about untreated suffering among patients with life-threatening illness in Vietnam. Yet, few participants felt adequately trained in palliative care or treatment of pain and the knowledge scores on our survey (mean score of 44%) indicate a great need for training. It appears that the greatest training needs are in assessment and treatment of nonpain physical symptoms and psychological symptoms. Nevertheless, misunderstanding and fear of opioid prescribing—opiophobia—remain common.^{22,23} Although most physicians appreciated that morphine is an appropriate treatment for moderate or severe pain, fewer would use it to treat terminal dyspnea or for dying patients with a history of opioid use disorder. 77% voiced some agreement that patients using it for pain relief could easily become dependent. Furthermore, nearly half of the physicians were worried that their supervisors would disapprove if they prescribed morphine. Our study did not differentiate between prescribing morphine for inpatients, a common practice in cancer centers in Vietnam, and for outpatients, which remains very uncommon. Thus, it is not surprising that a 2006 study of cancer outpatients with a history of moderate or severe pain at a Vietnamese cancer center revealed that only 1% received medicines that provided total relief and that 59% had no relief whatsoever.²⁴ Although there are understandable historical and social reasons for opiophobia in Vietnam,²³ high-quality palliative care cannot be implemented unless physicians who care for inpatients or outpatients in need of palliative care are enabled to prescribe morphine without fear of punishment in keeping with national guidelines and the principle of balance in national opioid policies. This globally accepted principle states that efforts to minimize illicit or nonmedical use of opioids must be balanced by equally strong efforts to assure accessibility of opioids for medical uses such as relief of pain and terminal dyspnea.²⁵

There are a number of limitations to our study. Because no prior surveys about palliative care existed in Vietnamese, this survey was designed specifically for the intervention and has not been validated in other settings. We studied a nonrandom sample of

physicians sent by their hospitals or clinics to participate in our course. The surveys rely on physician self-report, which introduces response bias. The great majority of participants (85%) worked in hospitals, so the results may not be generalizable to physicians working in the community. In addition, most of the physicians working in HIV/AIDS care attended our courses in 2007 and 2008, and most of the physicians working in cancer care or general medicine attended our courses from 2009 to 2014. Thus, it is possible that there are unmeasured chronological differences in our data contributing to the observed associations with clinical work.

Conclusion

This study of Vietnamese physicians revealed a great need for physician training in palliative care, especially in the areas of nonpain physical symptoms and psychological symptoms. There also is a great need for clear policies that enable physicians to prescribe morphine for inpatients and outpatients in keeping with national and international guidelines without worrying about punishment. Universal access to high-quality palliative care can be achieved only with a physician workforce trained and enabled to provide it.

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References

1. World Health Assembly. Strengthening of palliative care as a component of comprehensive care throughout the life course. 2014. Available from http://apps.who.int/gb/ebwha/pdf_files/WHA67/A67_R19-en.pdf. Accessed December 28, 2015.
2. Connor S, Sepulveda Bermedo MC, eds. *Global Atlas of Palliative Care at the End of Life*. London: Worldwide Palliative Care Alliance; 2014:10–26.
3. Knaul FM, Farmer PE, Krakauer EL, et al. on behalf of the Lancet Commission on Palliative Care and Pain Relief Study Group. Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage. *Lancet* 2018;391:1391–1454.
4. Stjernsward J, Foley KM, Ferris FD. The public health strategy for palliative care. *J Pain Symptom Manage* 2007;33:486–493.
5. Powell RA, Mwangi-Powell FN, Radbruch L, et al. Putting palliative care on the global health agenda. *Lancet Oncol* 2015;16:131–133.
6. Rawlinson F, Gwyther L, Kiyange F, et al. The current situation in education and training of health-care professionals across Africa to optimise the delivery of palliative care for cancer patients. *Ecancermedalscience* 2014;8:492.
7. Reville B, Foxwell AM. The global state of palliative care-progress and challenges in cancer care. *Ann Palliat Med* 2014;3:129–138.
8. Downing J, Ling J. Education in children's palliative care across Europe and internationally. *Int J Palliat Nurs* 2012;18:115–121.
9. Ens CDL, Chochinov HM, Gwyther E, et al. Postgraduate palliative care education: evaluation of a South African programme. *S Afr Med J* 2011;101:42–44.
10. Goh CR. The Asia Pacific hospice Palliative Care Network: supporting individuals and developing organizations. *J Pain Symptom Manage* 2007;33:563–567.
11. Gwyther L, Rawlinson F. Palliative medicine teaching program at the University of Cape Town: integrating palliative care principles into practice. *J Pain Symptom Manage* 2007;33:558–562.
12. Hegarty M, Breaden K, Agar M, et al. Asia pacific palliative care development through education. *J Pain Symptom Manage* 2014;47:e7–e9.
13. Gu X, Cheng W. Chinese oncologists' knowledge, attitudes and practice towards palliative care and end of life issues. *BMC Med Educ* 2016;16:1–7.
14. Krakauer EL, Ngoc NTM, Green K, Van Kham L, Khue LN. Vietnam: integrating palliative care into HIV/AIDS and cancer care. *J Pain Symptom Manage* 2007;33:578–583.
15. Green K, Kinh LN, Khue LN. *Palliative Care in Viet Nam: Findings from a Rapid Situation Analysis in Five Provinces*. Hanoi: Ministry of Health of Vietnam, 2006:27–39.
16. Medecins du Monde. The KAP Survey Model - Knowledge, Attitude and Practices. 2011. Available from <https://www.medecinsdumonde.org/en/actualites/publications/2012/02/20/kap-survey-model-knowledge-attitude-and-practices>.
17. Robinson K, Sutton S, von Gunten CF, et al. Assessment of the education for physicians on end-of-life care (EPEC™) project. *J Palliat Med* 2004;7:637–645.
18. Ferrell BR, Virani R, Malloy P. Evaluation of the end-of-life nursing education consortium project in the USA. *Int J Palliat Nurs* 2013;12:269–276.
19. World Health Organization (WHO). *Advocacy, communication and social mobilization for TB control: A Guide to Developing Knowledge, Attitude and Practice Surveys*. Geneva: World Health Organization, 2008:25–32.
20. Ware JE, Snow KK, Kosinski M, Gandek B. *SF-36 Health Survey Manual and Interpretation Guide*. Boston, MA: The Health Institute, New England Medical Center, 1993.

21. World Health Organization. *Cancer Pain Relief, with a Guide to Opioid Availability*, 2nd ed. Geneva: WHO, 1996. Available from <http://apps.who.int/iris/bitstream/10665/37896/1/9241544821.pdf>.
22. Krakauer EL, Wenk R, Buitrago R, Jenkins P, Scholten W. Opioid inaccessibility and its human consequences: reports from the field. *J Pain Palliat Care Pharmacother* 2010;24:239–243.
23. Krakauer EL, Phuong Cham NT, Husain SA, et al. Toward safe accessibility of opioid pain medicines in Vietnam and other developing countries: a balanced policy method. *J Pain Symptom Manage* 2015;49:916–922.
24. Reyes-Gibby CC, Ba Duc N, Phi Yen N, et al. Status of cancer pain in hanoi, vietnam: a hospital-wide survey in a tertiary cancer treatment center. *J Pain Symptom Manage* 2006; 31:431–439.
25. World Health Organization. *Ensuring balance in national policies on controlled substances: Guidance for availability and accessibility of controlled medicines*. Geneva: World Health Organization, 2011:11.

Appendix

DEMOGRAPHICS

1. Age: _____

2. Gender: (circle one): Male Female

3. Degrees: _____

4. Year of Graduation from Medical School: _____

5. Area of clinical training (Please check all that apply):

1	General adult medicine
2	Pediatrics
3	HIV/AIDS or infectious or tropical diseases
4	Cancer
5	Palliative care
6	Pain management
7	Other (Please specify):

6. What type of work do you do (please check the one best answer)?

1	Clinical general adult medicine
2	Clinical pediatrics
3	Clinical HIV/AIDS care and treatment
4	Clinical cancer care and treatment
5	Clinical palliative care
6	Clinical pain management
7	Research
8	Teaching in a medical school
9	Administration
10	Healthcare policy
11	Other (please specify)

7. What kind of institution do you work in primarily (please check one best answer)?

1	National or regional hospital
2	Provincial hospital
3	District hospital
4	Communal health center

5	HIV/AIDS outpatient clinic
6	Private clinic or practice
7	Ministry of Health
8	Provincial Health Service
9	NGO
10	Research center
11	Medical School
12	Other

8. In the past three months, how many individual patients have you provided with treatment for AIDS or AIDS-related opportunistic infections: _____

(Note: if the same patient was seen more than once in the past three months, count this patient only once.)

9. In the past three months, how many individual patients have you provided with treatment for cancer: _____

(Note: if the same patient was seen more than once in the past three months, count this patient only once.)

10. In the past three months, how many individual patients with HIV/AIDS or cancer have you provided with palliative care (treatment of symptoms rather than disease-specific treatment): _____

(Note: if the same patient was seen more than once in the past three months, count this patient only once.)

11. How many lectures have you heard on general palliative care?

	None	0 – 5	More than 5
In medical school			
Since graduating from medical school			

12. How many lectures have you heard specifically on treatment of pain?

	None	0 – 5	More than 5
In medical school			
Since graduating from medical school			

13. How many times in the past year did you order or prescribe the following medications?

Oral morphine to treat pain	
Parenteral morphine to treat pain	
Oral morphine to treat dyspnea	
Parenteral morphine to treat dyspnea	
Parenteral pethidine	
Fentanyl transdermal patch	

Survey questions for self-assessment

1. Please rate your level of understanding of the following:

	A Little	Average	A lot
a. The practice of palliative care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Using morphine to treat moderate-to-severe pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Using morphine to treat moderate-to-severe dyspnea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Common side effects of morphine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Psychological problems of dying patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Problems associated with bereavement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Diagnosing and treating delirium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. How to provide palliative care to patients with cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. How to breaking bad news to patients most compassionately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. How to provide palliative care for patients with HIV/AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Using morphine to treat moderate-to-severe pain or dyspnea in patients with a history of heroin or other opioid dependence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
2. I feel competent using morphine in dying patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I have the skills needed to speak compassionately with a dying patient or with a dying patient's family about dying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Do you feel you have adequate training in palliative care?
 a) Yes b) No

5. Do you feel you have adequate training in treatment of pain?
 a) Yes b) No

Survey questions to assess attitudes toward palliative care.

Please specify how you feel about the following statements:

	Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
1. Palliative care should be offered only when the patient is actively dying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. In most cases, the family rather than the patient should be told when the patient is dying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Most cancer patients die in pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Morphine is a medically appropriate medication to treat moderate-to-severe pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Physicians have an ethical obligation to provide end-of-life care to patients with AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Morphine is readily available for patients with cancer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Morphine is effective for treating dyspnea in cancer patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I am worried about prescribing morphine for my patients with moderate-to-severe pain because it is not yet accepted as a standard treatment for pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am worried about prescribing morphine for my patients with moderate-to-severe pain because my supervisors might not approve of this treatment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. When a patient is suffering from pain or shortness of breath that is refractory to treatment, it is morally justifiable to sedate them so that they do not have to suffer further.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Major depressive disorder (serious depression) is normal for patients at the end-of-life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. It is normal for family members to experience intense symptoms of grief for longer than 6-12 months.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. If the patient wants to know, it is helpful to tell the patient an estimate of how much time he/she has left to live.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Adult learn best when they can engage in discussion with the instructor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. People who have cancer and depression should be treated with antidepressants, even if their life expectancy is less than three months.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Many patients die painful deaths because they do not have the financial resources to pay for medicines such as morphine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Many patients die painful deaths because morphine is not readily available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Many patients die painful deaths because morphine is difficult to prescribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. It is not possible to successfully treat acute delirium with medications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Morphine should be used in a patient with dyspnea who is dying and has a history of intravenous drug use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Morphine should be used in a patient with moderate-to-severe pain who is dying and has a history of intravenous drug use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Morphine should not be used in a cancer patient with moderate-to-severe pain who is not dying and has a history of intravenous drug use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Morphine is effective for treating most pain in AIDS patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Survey questions to assess palliative care knowledge.

For the following questions, please circle the letter in front of the one best answer:

1. What type of pain is often difficult to control, even with morphine?
 - a) somatic pain
 - b) visceral pain
 - c) neuropathic pain
 - d) bone pain

2. A patient with pain or dyspnea who has not taken any opioid in the past should be started on what oral dose?
 - a) 10-20 mg every 8 hours as needed
 - b) 10-20 mg every 4 hours as needed
 - c) 5-10 mg every 4 hours as needed
 - d) 1-2 mg every 4 hours as needed

3. According to the WHO analgesic ladder, what should be the first treatment for cancer pain?
 - a) A mild opioid such as codeine
 - b) Nonopioid analgesics such as paracetamol or ibuprofen
 - c) Morphine
 - d) Reassurance

4. What is a typical indication for starting morphine?
 - a) Pain with swallowing in a patient with AIDS.
 - b) Persistent pain despite treatment with codeine and paracetamol in a patient with cancer
 - c) Mild chronic lower back pain in a patient who does not have cancer
 - d) A patient with cancer and bony metastases but without pain

5. Which of the following is not a common side-effect of morphine?
 - a) nausea
 - b) sedation
 - c) constipation
 - d) angioedema

6. What does it mean if a cancer patient who has pain is *physically dependent* on morphine?
 - a) They may start taking extra doses of morphine compulsively, even when they do not have pain.
 - b) A patient may begin to think about morphine all the time.

- c) If morphine use suddenly stops, patients will experience withdrawal symptoms.
 - d) If their pain goes away, the patient will want to keep taking the morphine.
7. What does *pseudo-addiction* mean?
- a) The patient has addictive behavior but has well controlled pain
 - b) The patient has addictive behavior that is not improved when additional doses of morphine are given.
 - c) The patient has addictive behavior but is willing to admit his addiction.
 - d) The patient has addictive behavior but also has uncontrolled pain.
8. All of the following medications can be used to control nausea except:
- a) haloperidol
 - b) metoclopramide
 - c) dexamethasone
 - d) amitriptyline
9. What is an appropriate morphine dose for breakthrough pain?
- a) 5 mg of morphine
 - b) 10 mg of morphine
 - c) 5-15% of the daily dose
 - d) 15-25% of the daily dose
10. Which of the following is not included in an ideal, complete palliative care assessment?
- a) Disease history and physical symptoms
 - b) Psychological symptoms
 - c) Decision making capacity
 - d) Social circumstances
 - e) Spiritual needs
 - f) Practical needs and anticipatory planning for death
 - g) All of the above are included.
11. Ba Mai has advanced osteoarthritis and advanced Alzheimer's type dementia. She has chronic pain in her hips, back and knees that is moderately well controlled with ibuprofen. She is hospitalized for pneumonia. Her overall level of consciousness has declined. On the third hospital day she begins moaning and crying out. Delirium is:
- a) unlikely
 - b) rarely related to medications
 - c) sometimes misinterpreted as pain
 - d) usually inevitable
12. Ba Mai's agitation worsens, and the goal is to reverse the symptoms of delirium. She is initially best managed with:
- a) diazepam
 - b) haloperidol
 - c) morphine
 - d) amitriptyline

13. Anh Tuan is a 32 year old man who has advanced AIDS. He has lost weight and reports a poor appetite. He sleeps poorly. He reports a lack of energy and spends most of his time at home. During a visit to his physician, he reports feeling hopeless and worthless. He is comfortable talking about the fact that he will die. A clinical suspicion of depression is most supported by:

- a) changes in appetite and sleep patterns
- b) feelings of hopelessness and worthlessness
- c) lack of energy
- d) comfort in talking about the prospect of death

14. Ba Thuy is a 98 year old with advanced dementia. She is mostly non-verbal and lives at home with her family. Her daughter complains that the patient is agitated and calls out at night, but is somnolent during the day. She thinks she is anxious and wants you to give her something to "calm her down." The best choice would be:

- a) diphenhydramine
- b) diazepam
- c) amitriptyline
- d) haloperidol

15. Which of the following is a stimulant laxative at conventional doses?

- a) bisacodyl
- b) sodium docusate
- c) mineral oil
- d) oral naloxone

16. When a dying patient is treated with morphine for breathlessness, the drug is titrated based on:

- a) respiratory rate
- b) pulse oximetry
- c) patient's comfort
- d) blood pressure

17. Which of the following antiemetics acts primarily at dopamine receptors?

- a) scopolamine
- b) metoclopramide
- c) haloperidol
- d) diphenhydramine

18. In discussing an uncertain prognosis, it is best to:

- a) reassure the patient and family that all will be well
- b) warn the family that the outcome is likely to be poor
- c) discuss possible outcomes, including likelihood
- d) say that no one knows what will happen

19. Mr. Son is a 62 year-old man who is dying of glioblastoma multiforme (malignant brain tumor). He has not had much pain during his illness. He has been unconscious most of the past 24 hours. The nurse calls to report that he has begun to moan. The family is very distressed. This is most likely to be:

- a) terminal delirium
- b) crescendo pain
- c) spiritual distress
- d) depression

20. Anh Cong has locally advanced transitional cell cancer of the bladder with chronic pelvic and abdominal pain. Which of the following is most important in determining the maximum dose of oral morphine during dose titration?

- a) pain relief
- b) respiratory depression
- c) risk of overstepping regulatory limits
- d) strength of pill

21. Chi Phuong is a 42 year-old woman who has breast cancer metastatic to bone and liver. Her pain has been well controlled on morphine 20mg every 4h hours. Which of the following is most likely to occur as a result of this treatment?

- a) psychological dependence
- b) physical dependence
- c) respiratory depression
- d) all of the above

22. When should palliative care be initiated?

- a) When a patient is actively dying.
- b) When a patient has a lot of symptoms such as pain or shortness of breath.
- c) When a patient is first diagnosed with metastatic cancer.

23. Chi Huong is dying. She has been in a coma for the past 12 hours. Her family is at her bedside stroking her hair. However, over the past hour they have noticed a “choking or gurgling” sound in her throat. The most likely medication to be helpful is:

- a) morphine
- b) hyoscine butylbromide (Buscopan)
- c) diphenhydramine
- d) diazepam

24. Anh Duc is a 35 year old with AIDS who has infected his wife with HIV. He has been unable to work due to weakness. He might be expected to be suffering in which sphere?

- a) emotional
- b) social
- c) spiritual
- d) all of the above
- e) none of the above

25. Objectives of palliative care include:
- a) Maintain life by any means.
 - b) Promote adherence to ARV or cancer therapy.
 - c) Improve quality of life.
 - d) All of the above.
 - e) b and c only.
26. Palliative care can be provided:
- a) In the home.
 - b) In an outpatient setting.
 - c) In the hospital.
 - d) b and c only.
 - e) All of the above.
27. Ethical issues in palliative care include:
- a) Social justice.
 - b) Autonomy.
 - c) Beneficence.
 - d) Non-maleficence.
 - e) Assuring that patient do not die in pain.
 - f) All of the above.
 - g) a, b, c, and d only.
28. Breaking bad news well is important because:
- a) It saves time.
 - b) The patient can be harmed emotionally if bad news is given in an inappropriate way.
 - c) When it is given well, the patient/doctor relationship is strengthened.
 - d) All of the above.
 - e) b and c only.
29. Important parts of the psycho-social assessment include:
- a) Living situation.
 - b) Financial status.
 - c) Family caregiver.
 - d) Community support.
 - e) All of the above.
30. Which of the medicines below does not cause constipation?
- a) Iron sulfate
 - b) Anticholinergics
 - c) Antivirals.
 - d) Opioids.

Please indicate with an 'X' whether the following statements are **TRUE** or **FALSE**:

	True	False
31. With time, patients can become tolerant to the constipating side effects of morphine.	<input type="checkbox"/>	<input type="checkbox"/>
32. Patients who have a history of using intravenous drugs may need high doses of morphine for pain because they have a higher tolerance for opioids.	<input type="checkbox"/>	<input type="checkbox"/>
33. When given morphine for dyspnea, most patients will have dangerous respiratory depression.	<input type="checkbox"/>	<input type="checkbox"/>
34. The risk of addiction in cancer patients who take morphine is less than 2 in 10,000.	<input type="checkbox"/>	<input type="checkbox"/>
35. <i>Tolerance</i> means that a patient will need more morphine to achieve the same pain relief.	<input type="checkbox"/>	<input type="checkbox"/>
36. Constipation is a possible cause of nausea.	<input type="checkbox"/>	<input type="checkbox"/>
37. Vomiting due to opioid usually can be relieved by one dose of haloperidol.	<input type="checkbox"/>	<input type="checkbox"/>
38. Neuropathic pain is rarely responsive to opioid analgesics.	<input type="checkbox"/>	<input type="checkbox"/>

Survey questions about self-assessed competence in palliative care.

Please rate your level of understanding of the following:

	A Little	Average	A lot
4. The practice of palliative care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. How to provide palliative care to patients with cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Using morphine to treat moderate-to-severe pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Using morphine to treat moderate-to-severe dyspnea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Common side effects of morphine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Using morphine to treat moderate-to-severe pain or dyspnea in patients with a history of heroin or other opioid dependence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Psychological problems of dying patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Problems associated with bereavement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Diagnosing and treating delirium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. How to break bad news to patients most compassionately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please specify how you feel about the following statements:

	Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
1. I feel competent using morphine in dying patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I have the skills needed to speak compassionately with a dying patient or with a dying patient's family about dying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel competent providing end-of-life care for HIV-infected patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>