

RESEARCH ARTICLE

Knowledge and Attitudes toward Palliative Terminal Cancer Care among Thai Generalists

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Abstract

Background: Our objective was to determine the knowledge and attitudes of Thai generalists (general physicians) toward palliative terminal cancer care (PC) in a primary care setting. **Materials and Methods:** We performed a cross-sectional descriptive survey using a self-administered questionnaire. The total number of completed and returned questionnaires was 63, giving a 56% response rate. Data analysis was based on these (Cronbach's alpha=0.82) and percentages and mean values were assessed using the Fisher's exact test to determine the correlation of variables. **Results:** Overall, attitude and knowledge levels were slightly satisfactory. Results indicated that general physicians had moderate scores in both attitudes (84.1%) and knowledge (55.7%) regarding palliative terminal cancer care. However, they had insufficient knowledge regarding truth telling, pain control and management with morphine, emergency management in terminal cancer care and treatment of fluid intake in terminal stages. Attitude and knowledge scores were statistically correlated ($p=0.036$). Knowledge scores were further positively associated with being taught palliative care in their medical curriculum ($p=0.042$). **Conclusions:** Formal education in palliative care and development of palliative care services are very much needed in Thailand to provide holistic care to terminally ill patients.

Keywords: Palliative care - generalist - general physicians - knowledge - attitudes

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Introduction

Generalists in community hospital and primary care setting have always been involved in providing palliative terminal cancer care (PC). With aging of the population, morbidity profile in Thailand has changed (Chunaras, 2008), the number of patients living with end stage chronic diseases and cancer have increased, the death rate were 80-85% and 25% respectively (O'Shea et al., 2008), and so have the health care needs (Lynn and Adamson, 2003a). The need for medical care, including palliative care, is increasing and largely uneven distribution of medical care facilities between urban and rural areas only aggravates the problem. All these factors bring the palliative care issues to focus (Lynn and Adamson, 2003b).

Palliative care is traditionally viewed as being the intense care of a patient who is close to death. In recent years, the scope of palliative care has expanded to include patients who may live for many years with end stage organ failure or cancer. Some chronically ill patients die from the side effect of treatment (Sanderson and Tieman, 2010). Thus palliative care focuses on improving the symptoms, dignity and quality of life of people approaching the end of their lives and on the care of and support for their families and friends. Moreover, avoiding unnecessary therapy and inappropriate diagnostic methods, considering

for their family, and taking care of, by multidisciplinary team, aim to achieve patients' needs and their best quality of life (Meeker, 2004). Care of these patients in the community inevitably involves input from the generalists (Assantachai, 2010).

A core value for palliative care has been to enable people to make choices about their end-of-life care and place of death. Data also suggest that most people with advanced illnesses prefer to be cared for and death at home or near their home (Tang, 2003; Gomes and Higginson, 2006). Yet, most people die in institutions or if at home, without the appropriate level of care needed to meet their basic needs (Kikule, 2003, Docherty et al., 2008). Most "end of life care" occurs in a generalist setting rather than a specialist palliative care setting (Shugarman et al., 2005). Worldwide most people spend most of their last year of life at home being cared for by family, family doctors, community nurses, and as outpatients by hospital clinicians and often with social care support. Some of the challenges to the provision of palliative care in primary care include lack of education of health professionals; limited resources; limited access to medications - especially opioids for pain treatment - and the lack of appropriate policies to ensure availability and access to palliative care within the health care system (Rajagopal et al., 2003; De Lima and Hamzah, 2004; De Lima et al.,

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2004). In addition, time limitations in primary care have resulted in a decrease in the amount of time available for the consultation (Mechanic et al., 2001; Bindman et al., 2007), requiring physicians to adopt strategies to meet the most pressing needs of the patients more effectively and efficiently.

In 2008, Thai population was approximately 65 million, while 20 million were living in the northeastern region. The leading causes of death are cancer, accidents, heart disease and acquired immune deficiency syndrome (AIDS) (Phungrassami, 2005). The demand for care at the end of life is increasing because of the growing number of terminally ill persons seeking optimal care. In addition critically ill patients who are considered incurable or in a terminal stage are often transferred to general ward units because of the demand for beds for critically ill patients who are considered likely to get well. Similarly, some terminally ill patients are 'taken' by their families to die at home (Kongsuwan, 2009). Thus palliative care based on the health service network is one of important health care provision provided by generalists in primary care settings.

Generalists included all those working in general and community hospital. For some, they included in continuing care settings or home care. Generalists were seen to deal with all conditions on a daily basis and their roles included coordination of care, key worker, gatekeeper, and referrer to others, particularly specialist palliative care services. Palliative care needs a holistic approach emphasizing comprehensive knowledge and clinical skills as well as changes in attitudes and practices among health care professionals. In 2008, there were 158 generalists working in northeastern region in Thailand (Thai Medical Council, 2008), sometimes for in-patients diagnosed cancer, not so far from authors' workplace. With this background, we carried out the present cross sectional questionnaire based survey about basic knowledge of, and their attitudes toward, cancer and palliative care, by practicing physicians (non-oncologists) or generalists in primary care settings, to gain the initial insight of where the deficiencies can be improved.

Materials and Methods

Study design

A descriptive cross-sectional survey using self-administered questionnaire was used. The independent variables were age, gender, graduated-year from medical school, years of experiences in working in northeast region, types of workplace, numbers of cancer patient in their practice per year, and the most common cancer they have to treat. The dependent variables included knowledge and attitudes regarding palliative care.

Subject population

The target population was general physicians (generalists) currently working in hospitals in northeast Thailand, during October-December 2008. Participants were chosen from 10 hospitals geographically spread in Northeast, Thailand. One of the 10 was tertiary hospital located in Khon Kaen and serving a large

socioeconomically diverse catchment area. Other 2 general hospitals were chosen from the Loei and Udonthani, in order to ensure geographic distribution. The other 7 hospitals were community hospitals in Kalasin, Roi Et, Khon Kaen, Udonthani, and Sakonakorn. A contact person was designated per hospital to coordinate the project and to distribute and collect the questionnaires.

Administration of questionnaires

The participating physicians were directly approached by visit and appointment. A written informed consent was taken from them. Three parts of questionnaire including baseline generalist information, 14 itemed of knowledge and 20 itemed of attitude was administered.

Data collection procedures

The sample size determination was based on a power of 80%, alpha of 5%, and a precision (effect size) of 3%, with a baseline proportion of 0.5 (used when the proportion is not known). The calculated sample size was 112 (total general physicians in Northeastern area was 158). For simplicity and to account for non-response rates, all general physicians in the selected hospitals were considered for the study. A total of 112 questionnaires were sent to the contact persons in each hospital. The questionnaires were sent to the contact persons with a cover letter written by the primary investigator describing the goals of the study, name of contact person, and time frame of two weeks for completing and returning the questionnaire. A reminder was sent after two weeks, but due to the low rate, deadline was extended to one month.

The questionnaire

The structured questionnaire was designed for this study. It was developed based on a review of the literature and tested for content validity and appropriateness for use in Thailand by a team of experts, and pilot-tested for feasibility and clarity. The questionnaire was developed in English and Thai and has 3 sections: general information; knowledge and attitudes towards palliative care service in Thailand. General characteristics of respondents included age, gender, graduated-year from medical school, years of experience in northeastern area, types of workplace, numbers of cancer patient in their practice per year, and the most common cancer they had to treat. General physicians were asked questions regarding truth telling for terminal cancer patients and their family, availability of various cancer treatment modalities, their reasons to refer cancer patient to hospice, cancer pain management, availability of opioid analgesics, and of existence and knowledge about emergency symptoms management for terminal cancers and psychological care for caregiver. Knowledge was measured by 14 questions and selected the best answer each, while 20 questions of attitudes measured using a 5-item Likert scale (ranging from strongly agree to strongly disagree).

Statistical analysis

We divided the respondents only on the basis of their working designation in four categories, communities, provincial/general hospital and tertiary hospital/excellence

center and others. Data were entered into an Excel spreadsheet. STATA version 10.1 was used to perform data analysis. Knowledge and Attitudes were measured on the categorical scale and tested using Fisher's exact test to examine the relationships between variables. All analysis was carried at the 0.05 significant levels.

Ethical consideration

The questionnaire was anonymous and upon completion was put in a sealed box for retrieval only at the time of assessment. Appropriate institutional approval from the ethical review committees (The ERCs) was obtained beforehand.

Results

A total of 112 questionnaires were sent to generalist physicians. The total number of completed and returned questionnaires was 63 resulting in a 56% response rate.

Fifty-six percent of the sample completed the questionnaire (Table 1). The gender distribution among physicians was almost equally; 47.62% was females and 52.33% was males. 90.48% was less than 40 years of age. Their experiences in working in northeastern area were few. 63.49% worked in northeast region less than six years. The majority of the sample practiced in community hospital (76.19%). One third of generalists had been exposed to terminally ill patients no more than six persons per annum. They also reported being taught palliative care in their medical curriculum approximately 80%. The two most common cancers being treated were CHCA (52.38%) and liver cancers (22.81).

Table 2 summarizes responses reflecting the knowledge of sampled northeast Thai generalists on PC. The first question relates to truth telling in terminal cancer patients. The majority of them were unable to response correctly (92.06%) telling diagnosed advance cancer patients. General physicians responses were approximately 50% on "appropriate reason for referring to hospice". The

third question required identifying stage to start opioid treatment. More than 80% answered correctly to start treatment for metastatic cancers. On the other hand, they failed to use appropriate dose of oral tramadol (71.43%). In addition, they selected correct answer regarding reason of increasing pain after receiving several weeks of opioids (61.90%). For side effects of opioid, appropriate challenged dose of sustained release tramadol in patient with deteriorated renal function, and using laxative in patients prescribed strong opioid, their choices were not different between correct answer or not. Additionally, in management of emergency terminal cancer conditions,

Table 1. General Characteristics of the Sampled Northeast Thai Generalists

Baseline characteristics (N=63)		No.	(%)
Gender	Female	30	47.62
	Male	33	52.33
Age (years)	20-29	31	49.21
	30-39	26	41.27
	40-49	4	6.35
	50-59	2	3.17
Type of workplace	Community hospital	48	76.19
	General hospital	6	9.52
	Tertiary hospital/University hospital	8	14.29
Years of working in northeast region (years)	1-3	29	46.03
	4-6	11	17.46
	7-10	15	23.81
	>10	8	12.7
Terminal cancer patients have been cared (persons)	1-3	21	33.33
	4-6	23	36.51
	7-10	11	17.46
	>10	8	12.7
Have been taught PC in medical curriculum	Yes	49	77.77
	No	14	22.22
Types of terminal cancer	CHCA	33	52.38
	Hepatoma/ CA liver	15	23.81
	CA lung	5	7.94
	CA larynx/ nasopharynx	3	4.76
	CA breast	3	4.76
	CA ovary	2	3.17
	CA cervix	1	1.59
CA colon	1	1.59	

Table 2. Numbers and Percentages of Correct Responses to 14 Knowledge Questions among the Sampled Northeast Thai Generalists

Items	Response (N=63)	
	Correct (n %)	Incorrect (n %)
1. Initial responses to truth telling to diagnosed advance cancer patient.	5 (7.94)	58 (92.06)
2. Appropriate reason for referring to hospice	32 (50.79)	31 (49.21)
3. Recommended stage to start opioid for metastatic cancer	53 (84.13)	10 (15.87)
4. Appropriate dose of oral sustained release tramadol equally to oral normal release tramadol	18 (28.57)	45 (71.43)
5. Complains of increasing pain after receiving several weeks of opioids due to...	39 (61.90)	24 (38.10)
6. Drug used for initial treatment of opioid induced nausea except....	37 (58.73)	26 (41.27)
7. The most appropriate initial decision for confused symptom from sustained release tramadol in patient with deteriorated renal function	26 (41.27)	37 (58.73)
8. What stage would suggest using of laxative while prescribed strong opioids in patients with a regular bowel habits	33 (52.38)	30 (47.62)
9. The best course of management in patients diagnosed advanced breast cancer considered the diagnosis of spinal cord compression.	22 (34.92)	41 (65.08)
10. Symptoms are the most characteristic of hyper-calcaemia in advanced cancer	63 (100.00)	0 (0.00)
11. The most appropriate next step in managing advanced prostate cancer with breathlessness.	11 (17.46)	52 (82.54)
12. Primary responsibility as a doctor while take care of patient with terminal stage of ovarian cancer decides that the quality of life of life is poor that she will stop eating and drinking.	5 (7.94)	58 (92.06)
13. The drug of choice for managing her respiratory secretion.	49 (77.78)	14 (22.22)
14. Which of the following factors is most likely to indicate that he may need additional bereavement support after lost the lover one.	61 (96.83)	2 (3.17)

Table 3. Response Numbers and Frequencies for 20 Attitudes toward Palliative Terminal Cancer Care among the Sampled Northeast Thai Generalists

Items	Response (N=63)				
	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)
1. Medical personnel find it more satisfaction to work with patients who are expected to improve than with patients who are likely to die.*	11 (17.46)	13 (20.6)	3 (4.76)	21 (33.33)	15 (23.63)
2. The patient is better off knowing her/his diagnosis even its carries an implication of imminent death.*	3 (4.76)	2 (3.17)	6 (9.52)	18 (28.57)	34 (53.97)
3. If the patients talk about fear of death, doctors and nurses should reassure him/her that there is little to worry about.	16 (25.40)	24 (38.1)	13 (20.63)	7 (11.11)	3 (4.76)
4. Terminal stage cancer patients need less frequent medical assessments than patients with active, rapid changed diseases.*	6 (9.52)	30 (47.10)	2 (3.17)	12 (19.05)	13 (20.63)
5. Even if they don't ask, relatives should be advised when death is imminent in the terminal cancer patients.	28 (44.44)	23 (36.51)	7 (11.11)	4 (6.35)	1 (1.59)
6. Dealing with a terminal cancer patient makes one aware of one's own feelings regarding terminally ill.	29 (46.03)	25 (39.68)	7 (11.11)	2 (3.17)	0 (0)
7. Family members who stay close to a terminal cancer patient often interfere with the professional's work with the patient.*	2 (3.17)	18 (28.57)	10 (15.87)	15 (23.81)	2 (3.17)
8. If given a choice, I prefer avoid contact with or care for terminal cancer patient.*	7 (11.11)	4 (6.35)	2 (3.17)	30 (47.62)	20 (31.75)
9. Nurses should be the primary professionals equipped to deal with the reaction of terminal cancer patient.*	2 (3.17)	2 (3.17)	16 (25.4)	35 (55.56)	8 (12.7)
10. It is important for physicians to help patients prepare for terminal stage of cancer.	35 (55.56)	24 (38.1)	2 (3.17)	1 (1.59)	1 (1.59)
11. Terminal cancer patients should be allowed to gradually degradation without efforts to prolong their wellbeing.*	11 (17.46)	6 (9.52)	1 (1.59)	19 (30.16)	26 (41.27)
12. Physicians play a key role in reducing the suffering of patients with hopeless of advanced cancer.	33 (52.38)	23 (36.51)	2 (3.17)	3 (4.76)	2 (3.17)
13. Sometimes terminal cancer patients give up on themselves because the medical personnel have given up on them.*	21 (33.33)	12 (19.05)	4 (6.35)	17 (26.98)	9 (14.29)
14. I usually feel at ease talking with other physicians about terminal cancer patients for whom we shared personal responsibility.	31 (49.21)	27 (42.86)	1 (1.59)	4 (6.35)	0 (0)
15. I would not be concerned about addiction if a member of my family was given morphine for cancer pain.	18 (28.57)	22 (34.92)	7 (11.11)	10 (15.87)	6 (9.52)
16. It is appropriate for cancer patients to receive opioid analgesics at any time in their disease course.	23 (36.51)	15 (23.81)	14 (22.22)	6 (9.52)	5 (7.94)
17. The terminal cancer patients who mostly talk about their future plans for work, family, trips etc., do not realize the seriousness of his/her condition.	12 (19.05)	16 (25.4)	20 (31.75)	12 (19.05)	3 (4.76)
18. The terminal cancer patients mostly mourn their own coming death.*	9 (14.29)	28 (44.44)	15 (23.81)	8 (12.7)	3 (4.76)
19. Doctors and nurses should be detached emotionally if they are to work in the best interest of terminal cancer patients.*	4 (6.35)	21 (33.33)	9 (14.29)	13 (20.63)	16 (25.40)
20. Physicians should try to explain to a patient that they should not be angry if events are out of their control.	13 (20.63)	34 (53.97)	8 (12.7)	8 (12.7)	0 (0)

*Items 1, 2, 4, 7, 8, 9, 11, 13, 18, and 19 are all negative attitudes question; 5=strongly agree, 4=agree, 3=uncertain, 2=disagree, and 1=strongly disagree

generalists tend to selected incorrect answers. Surprisingly, 100% of respondents knew the most characteristics of hypercalcemia in advanced cancers similar to response of bereavement support after lost the loved one (96.83%). Their decision to use drug of choice for managing respiratory secretion was 77.78%.

Figure 1 indicates levels of knowledge on palliative terminal cancer care among respondents. More than half of general physicians had moderate knowledge (55.65%). The maximum score was 9 in 14 and mean score was 7.

Attitudes of generalists toward PC are summarized in Table 3. More than half of general physicians were more likely to disagree of more satisfaction to work with patients who were not cured (66.96%), as well as they also disagree if patients were not told their right diagnosis (82.54%). On the other hand, approximately sixty percent (63.5%) of physicians agreed with physicians and nurse should reassure patient that is two little worry about his/her die. The attitudes toward terminal stage cancer patient need less frequent medical assessments were slightly different from agree to disagree (agree 57.14%, disagree 39.68%). Physicians' attitudes toward relatives should be advised when death is imminent in the terminal cancer patients and dealing with a terminal cancer patient makes one aware of one's own feelings regarding terminally ill resulted in the similar trend (agree>80%). Whereas the attitudes toward family members who stay close to a terminal cancer patient often interfere with the professional's work with the patient varied from agree to disagree (28.57, 15.87, and 23.81%). Most of generalists preferred to contact with or care for terminal cancer patient (79.37%). Approximately two third of generalists (68.26%) disagreed with nurse should be the primary professionals equipped to deal with the reaction of terminal cancer patient. It is interesting to note that physicians thought that they play a key role to reduce patients' sufferings and prepare patients at the terminal stage (approximately 90%). In the opposite, they thought that patients should not be allowed to gradually degradation without efforts to prolong their wellbeing (71.43%). Their attitudes were slightly different regarding that patients give up on themselves because the medical personnel have given up on them (agree 52.38, disagree 41.21%). Generalists mostly agreed in four items; felted at ease talking with other physicians about terminal cancer patients (92.07%), would not concern about morphine addiction using in terminally ill patients (62.89%), agreed with terminal patients should receive morphine to relieve pain (60.32%), and explained to a patient that they should not be angry if events are out of their control (74.60%). Even though 44.09% agreed that if patients talk to their future plan, it means they do not realized with the seriousness of their conditions, 31.75% stated uncertain. Surprisingly, 58.73% of

Table 4. Comparison of Baseline Data to Attitudes and Knowledge in Palliative Terminal Cancer Care among the Sampled Northeast Thai Generalists

Baseline characteristics (N=63)		Attitudes (n)			Knowledge (n)		
		Good	Moderate	Poor	Good	Moderate	Poor
Gender	Female	26	28	0	0	18	10
	Male	4	5	0	0	15	20
Age (years)	*p value		1			0.128	
	20-29	3	28	0	0	20	11
	30-39	6	20	0	0	13	13
	40-49	0	4	0	0	1	3
	50-59	0	2	0	0	1	1
	*p value		0.52			0.385	
Type of workplace	Community hospital	7	41	0	0	27	21
	General hospital	1	5	0	0	3	3
	Tertiary hospital/University hospital	1	8	0	0	5	4
	Others	0	0	0	0	0	0
	*p value		1			1	
Years of working in northeast region	1-3 years	3	26	0	0	16	13
	4-6 years	3	8	0	0	8	3
	7-10 years	3	12	0	0	8	7
	>10 years	0	8	0	0	3	5
	*p value		0.39			0.588	
Terminal cancer patients have been cared	1-3 persons	4	17	0	0	13	8
	4-6 persons	4	19	0	0	13	10
	7-10 persons	1	10	0	0	6	5
	>10 persons	0	8	0	0	3	5
	*p value		0.726			0.719	
Have been taught PC in medical curriculum	Yes	8	41	0	0	31	18
	No	0	14	0	0	4	10
	*p value		0.182			0.032***	

*p value by Fisher's exact test

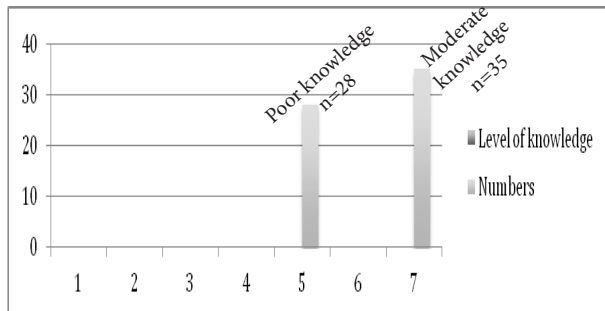


Figure 1. Level of Knowledge on Palliative Terminal Cancer Care among the Sampled Northeast Thai Generalists

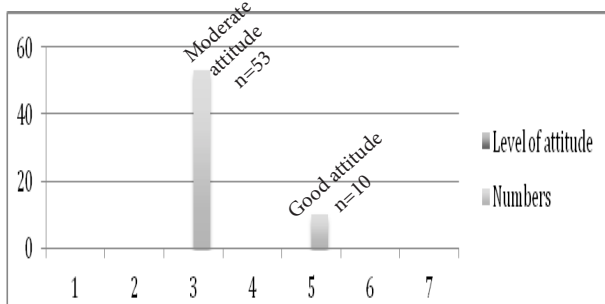


Figure 2. Level of Attitudes Toward Palliative Terminal Cancer Care among the Sampled Northeast Thai Generalists

generalist agreed that terminal cancer patients mostly mourn their own coming death. However, their attitudes toward doctors and nurses should be detached emotionally if they are to work in the best interest of terminal cancer patients were slightly different (agree 39.68%, disagree 46.03%).

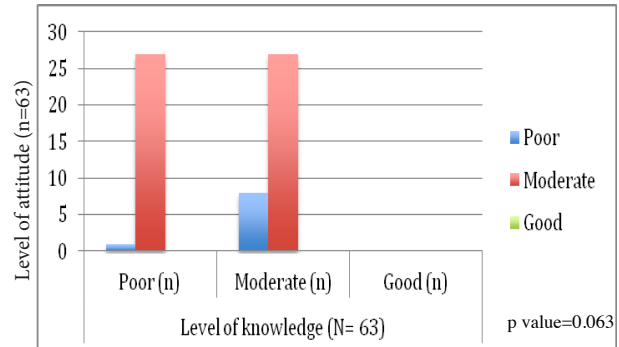


Figure 3. Demonstrates the Correlation between Level of Knowledge and Attitudes toward Palliative Terminal Cancer Care. Attitude Scores were Statistically Correlated to Knowledge Scores (p=0.036). *p value by Fisher's exact test

Figure 2 shows the levels of generalists' attitudes toward palliative terminal cancer care. More than 80% of respondents had moderate attitude scores, while only 15% had good attitude towards palliative terminal cancer care. The maximum attitude score was 84, while the minimum was 61.

Figure 3 demonstrates the correlation between level of knowledge and attitudes toward palliative terminal cancer care. Attitude scores were statistically correlated to knowledge scores (p=0.036).

Table 4 shows the association between baseline characteristics of generalists with both knowledge and attitudes towards palliative terminal cancer care. The results indicated that general physicians who reported being taught palliative care in their medical curriculum had more medical knowledge regarding the care for terminally ill patients (p=0.032), whereas the other physicians' demographics were not correlated with attitudes.

Discussion

This is the first survey of its kind conducted in Thailand. Literature review does not indicate any comprehensive study for palliative care knowledge targeting general physicians in practices anywhere in the entire region. General physicians or generalists are physicians focusing on primary care and are not a specialist in a certain medical field (Wikipedia Foundation Inc., 2012). They also are the most important first or second contacts of patients. Their workplaces include primary, secondary and tertiary health care settings. Approximately 90 percent of generalists received education in palliative care because of mainly graduated from medical schools after 1999. This number is very high compared to results from other studies for instance, 89.3% of general practitioners in Wales were reported to have training in pain control, 67.7% in bereavement, and 70.2% in communication (Barclay et al., 2003). On the other hand, survey conducted among physicians in the US, only 36% were found to receive training in palliative care (Farber et al., 2004). One of study conducted in India indicated that physicians lacked of knowledge on palliative care. Two major problems include lack of knowledge regarding to nature of terminal stage of cancer and lack of education related palliative care (Dawyer, 1997).

In our study, the length of time since medical graduation showed significance effect on knowledge scores. This finding is similar to the study results in Germany indicated that physicians with professional experiences of less than 5 years had more knowledge scores. In this country, there was evidence shown that academic training had a positive impact on knowledge of physicians' future practices related to palliative care (Papke and Freier, 2007). It might be assumed that undergraduate education and training in palliative care will be adequate for the future practices of physicians. However, our results revealed that knowledge of northeast Thai generalists was limited in particular items, including truth telling regarding patients' diagnosis, the titration and appropriate dosage of opioid, emergency management in terminal cancer patients, and fluid replacement in end stage of life.

Truth telling in Thai physicians looked like in Asian and South Europe and contrasted to results of studies in USA (Novack et al., 1979; Miyaji, 1993). American physicians reporting disclosure and telling prognosis of disease are their responsibilities whereas northeast Thai generalists preferred to withhold information from cancer patients as other parts of the world (Miyaji, 1993) due to talking openly about death and dying is not acceptable because it is considered disrespectful, bad luck, or causes loss of hope (Sapir et al., 1999). Although the WHO cancer unit indicated using opioid should be intervene for pain relieve in cancers, in this study found that generalists lacked of knowledge regarding the opioid usage and switching dosage while patients had other comorbidities. It might be from lack of experience and partially affected by limited availability of opioids in their practices. This evidence is similar to study in Poland which revealed knowledge deficits among physicians in selection of

medications and the route of administration in the presence of pain crisis, the titration of opioid dosages and the calculation of this when rotating from the parenteral to the oral route, and the management of adverse events (Giger et al., 2006). On the other hand, recent study in India showed that generalists had high level of knowledge regarding pain control. They indicated that generalists knew about WHO's 3 steps analgesic ladder pattern (Rahul and Sonali, 2013).

Generalists had deficits knowledge in emergency management in terminal cancer stage particularly in patients presenting with breathlessness, cord compression, and stop eating and drinking. It might be from what is taught and practiced in medical school may not be implied in their real clinical practices. In addition, their poor knowledge scores may partially influence by limited available guideline of management cancer patients in crisis in their workplaces. Moreover, they were not familiar with the principles of management of the patients' disease. Several studies demonstrate that parenteral or enteral feeding of patients near death neither improves symptom control nor lengthens life (McCann et al., 1994). Physicians can help families understand that loss of appetite is normal at this stage. Only 7.94% of Thai generalists expressed they had knowledge in this issue. The reasons that influenced them to misunderstand in appropriate use of artificial fluid at the end of life due to their perception regarding 'physiologic requirement' of fluid and nutrition, and positive attitude as food and water are the symbol of care. In addition, they preferred to respect relative concerns more than patients' wish in the last day. This finding corresponded to the results in Japan indicated that Japanese physicians regarded intravenous hydration as the minimum standard of care (Morita et al., 2002).

Regarding the attitudes general physicians towards PC, they viewed palliative care positively. Their attitudes were not significantly affected by gender, age, time of practice, types of workplace, numbers of cancer patients have been treated and used to study PC in medical curriculum. Our findings on informing patients about diagnosis were similar to the study conducted in China (Wang et al., 2004). In both studies, the majority of physicians reported that the patients should be informed of their diagnosis as well as our study that 82.54% of physicians reported informing their patients of their diagnosis. This may reflect the fact that physicians perceived their responsibility to disclose information on diagnosis and prognosis to the patient and family likes the findings of study in Lebanon. In addition, generalists also realized themselves as a key role to reduce patients' suffering which indicated from their positive attitudes in this item (88.89%). However, studies in Japan, Greece, and Ethiopia, for example, showed opposite outcomes that physicians believe that causing patients to lose hope by telling them about the illness will only hasten their death (Beyene, 1992; Dalla-Vorgia et al., 1992), and physicians in the United Kingdom and Italy are likely to withhold the information from the patient at the family's request (Grassi et al., 2000). Most physicians endorse the involvement of family members when disclosing terminal illness and may allow the family

to make decisions on behalf of an incapacitated patient (Jenkins et al., 2001).

Noteworthy in this study is the fact that a significant percentage of general physicians (71.37%) think that patients should not be allowed to gradually degradation without efforts to prolong their wellbeing. Understanding of psychological and emotional aspects of patients, families, and health care providers had been highlighted as problematic for respondents in this study. Our results revealed that physicians were varied in their point of views from strongly disagreed to strongly agreed regarding patients and their families' psychological and emotional sufferings, even if of themselves. These results were shown in the following items including family members often interfere by doctors' work, patients give up on themselves while health care providers give up on them, patients mostly mourn their own coming death, and doctors should be detached emotionally if they are to work in the best interest of terminal cancer patients. It might be because most patients at the end of life develop psychological and psychiatric symptoms either alone or in combination with physical symptoms (Kaasa et al., 1993).

Additionally, emotion reactions to terminality vary across individual, and to a greater extent depend upon his or her style of living (De Spelder and Strickland, 1983). These negative attitudes need to be addressed because they can lead to suboptimal psychological and emotional care. Slight less than 60% of the generalists agreed or strongly agreed that is appropriate for cancer patients to receive opioid analgesics at any time in their disease course. However, approximately 60% of them agreed or strongly agreed that they did not concern about addition in cancer patients. These findings differed from the results of other studies. The result was in accordance with Ger et al. (2000) and Weinstein et al. (2000) which demonstrated the negative attitudes of Taiwanese physicians and physicians in Texas, USA, respectively, but opposite to that of Yun et al. (2005) which showed the positive attitudes of Korean clinicians. One main reason viewed as a problem of negative attitude in using opioid at terminal stage among generalists was insufficient knowledge representing by slightly 50% physicians had low knowledge scores in opioid usages.

Note that, our findings indicated that there was correlated between knowledge and attitude scores ($p=0.036$). Additionally, more than 60% of physicians who had higher knowledge scores were taught palliative care from their medical curriculum more than those had low knowledge scores. Learning palliative care through medical school education might enhance physicians' positive attitudes to provide care for terminal cancer, presenting correct concepts and knowledge of palliative care. This finding was resemble to study in Taiwan which revealed that junior doctors were strongly encouraged to have correct principles of palliative care and develop positive attitudes toward palliative terminal care by educating in medical program (Shih et al., 2010).

Although, the response rate was slightly high, several limitations of study methods must be noted and should be considered in the interpretation of the findings. The informants of this study were predominantly in some

provinces of this region. It should be cautious in making generalizations beyond this study affect physicians with diverse demographic characteristics from those of our informants.

In conclusion, the results of this study emphasize the need for developing palliative terminal care (PC) services in northeast Thailand. Limitations in generalists' knowledge relating to opioid usage in pain management may be contributing to a substantial unmet need in populations with cancer. The provision of quality PC services requires however the education and training of health professionals in this field. PC needs to become an integral part of all medical school curricula as well as continuing medical education program offerings. Other challenges facing this field include establishing practice guidelines and policies on end-of-life care such as advanced directives, breaking bad news, withholding and withdrawing life-sustaining treatments and psychological and emotional care. Prospective researches are needed in this area to explore how general physicians practice in their health care setting and to guide the adoption of a PC delivery model that is culturally sensitive and meets the needs of the Thai population.

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