

# What Factors Are Important in Increasing Junior Doctors' Willingness To Provide Palliative Care in Taiwan? An Educational Intervention Study

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## Abstract

**Purpose:** To explore the factors that influence the willingness of junior doctors to provide palliative care in future clinical practice and to evaluate the effect of palliative care education in ameliorating these factors.

**Methods:** A 2-week clinical training course consisting of clinical patient care, multidisciplinary team meetings, home visits, and lecture series was conducted for interns in a palliative care unit of a university hospital. A structured self-report questionnaire was administered before and after the training.

**Results:** One hundred forty-seven interns were enrolled and completed the questionnaire, which demonstrated significant improvements in knowledge and beliefs toward palliative care after the training ( $p < 0.001$ ). Although the interns' willingness to provide palliative medical care was influenced by relatives' support before the training (odds ratio [OR] = 3.861, 95% confidence interval [CI] = 1.217–12.243), this relationship vanished after training. A higher willingness to provide home visits was noted in participants who received palliative care education at medical school. In contrast, information received from mass media was shown to be negatively correlated with willingness. After the training, the only independent variable that was positively correlated with interns' willingness to provide home visits was their own beliefs on palliative care (OR = 1.074, 95% CI = 1.058–8.089).

**Conclusions:** Educating junior doctors to build positive beliefs toward palliative care is strongly encouraged. Palliative care education contributes to increased junior doctors' willingness toward providing palliative care, which suggests that this kind of training course should be emphasized in medical education.

## Introduction

**T**AIWAN IS ONE of the fastest aging societies in the world. In 2007, 10% of Taiwan's 23 million people were over 65 years of age, a number that will likely double in the next 20 years. With the aging Taiwanese population, the health care system will have an increased number of individuals dying of cancer. In 1997, approximately 29,000 Taiwanese died from cancer and this increased to 40,300 in 2007. Because of the heightened need of end-of-life care, regulations for National Health Insurance reimbursement were issued in 2000 to provide inpatient hospice care to patients with terminal cancer.<sup>1</sup> Currently, there are 37 qualified inpatient units and 64 qualified home care services in Taiwan, but only approximately 17% of patients with terminal cancer receive palliative care.<sup>2</sup>

Several studies have demonstrated that end-of life educational curricula and clinical training can improve medical students' knowledge and attitude toward palliative care.<sup>3–6</sup> Those who complete clinical rotations and courses in palliative care feel more comfortable with death and caring for dying patients.<sup>5,7</sup> Research on residents and fellowships show a similar result.<sup>8,9</sup> However, most medical students have inadequate palliative care knowledge<sup>3</sup> and do not receive appropriate end-of-life education.<sup>10,11</sup> To date, only half of Taiwan's medical schools have compulsory palliative medicine training in their undergraduate program.<sup>12</sup> Unlike Taiwan, end-of-life medical education has sharply increased in Western countries. Most of the medical schools in the United States report that end-of-life issues are directly addressed in their curricula.<sup>13</sup> Therefore, education should be one of the critical areas in promoting palliative care.

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In Taiwan, the internship is the critical time for junior doctors to develop their own beliefs on palliative care. Medical school training in Taiwan is a 7-year program, including 2 years of premedical courses, 2 years of basic medicine, 2 years of clinical medicine, and 1 year of rotating internships at university hospitals. Internships bridge the gap between medical school curriculum and clinical practice. However, there are no formal internship palliative care training programs in Taiwan and the few courses available are elective. A previous study showed that junior and female Taiwanese medical students, as well as those reporting their religion as Buddhist, indicated a stronger willingness to provide palliative care.<sup>10</sup> Older medical students were also found to correlate with a more positive view of caring for patients with terminal illness.<sup>14</sup> In order to improve end-of-life care education, interns' willingness to provide palliative care and the related factors must be explored.

Therefore, our study aims to: (1) identify the willingness of interns to provide palliative care in their future clinical practice; (2) determine the factors that might influence this willingness; and (3) measure the improvement of interns' willingness after the 2 weeks of palliative care training.

## Methods

### Subjects

From 2003 to 2005, 147 interns who attended an elective 2-week palliative care curriculum within the internship year were recruited at National Taiwan University Hospital. Questionnaires were distributed to the interns at the beginning and at the end of the curriculum. All of them were completed by the participants, themselves.

### Description of the Curriculum

The 2-week curriculum consisted of a lecture series, multidisciplinary team meetings, home visits, and clinical patient care. Senior doctors conducted the lecture series, including orientation of hospice care, initial assessment of patients with terminal cancer, supporting patients and their families, and common symptoms of patients with terminal cancer. The multidisciplinary faculties in the palliative care unit included palliative care physicians, nurses, clinical psychologists, clinical Buddhist chaplains, and social workers. Interns were requested to undertake home visits at least once and provide inpatient care during the 2-week training, which was conducted under the direction and supervision of palliative care faculty physicians.

### Measurements

A questionnaire consisting of five parts was administered to all participants before and after the training. The five parts of the questionnaire included questions on demographic characteristics, knowledge and beliefs on palliative care, as well as subjective norms and willingness to provide palliative care. The entire questionnaire was evaluated by expert opinion of two physicians, two nurses, one psychologist, and one social worker, with a content validity index of 0.93. Demographic data included age, education, religious beliefs, experience in providing palliative care, source of information on palliative care, and subjective understanding of palliative

care. The other four parts of the questionnaire included the following:

1. Knowledge of palliative care: This 30-item measure was designed with careful scrutiny of related literature and the main reference included the PCQN originally developed by Ross et al.,<sup>15</sup> and modified in previous studies.<sup>16,17</sup> All items were grounded in the investigators' clinical experiences. The scoring system was "true" (1) and "false/unknown" (0).
2. Beliefs on palliative care: This part of the questionnaire examined the perception of interns regarding the benefits and barriers in providing palliative care.<sup>18</sup> The content of this measure included 20 items that were scored by using the 5-point Likert scale, from "strongly disagree" (1) to "strongly agree" (5). Bartlett's test of sphericity (BT) and the Kaiser-Meyer-Olkin (KMO) test were administered and resulted in a BT value of 1511.28 (statistical significance: 0.000) and a KMO value of 0.78, respectively. The draft items were analyzed using principal component factor analysis followed by orthogonal varimax rotation. Finally, the beliefs measure was constructed using benefits (9 items) and barriers (11 items) perceived by the physicians when taking care of patients with terminal cancer.
3. Subjective norms: This part was comprised of both "perceived beliefs of significant others' opinions" and "the motivation to comply with significant others' opinions" in providing palliative care. A 5-point Likert scale, from "strongly unaffected" (1) to "strongly affected" (5), was used in the 6-item measures (i.e., influences by spouses, sons, daughters, colleagues, friends, or others). The Cronbach  $\alpha$  value was 0.70.
4. Willingness: This part explored the interns' willingness (yes or no) to provide palliative care services in clinical practice if they encountered a patient with terminal cancer. The contents of palliative care services included providing information about palliative care resources, referring patients to the palliative care units, medical care and prescription, home visits, phone visits, and bereavement care.

### Statistical analysis

The SPSS 12.0 statistical software package (SPSS, Chicago, IL) was used for the analysis. First, a frequency distribution was used to describe the demographic data and the distribution of each variable. Mean values and standard deviations were used to analyze the degree of variation in the knowledge and beliefs on palliative care. Paired *t* test examined the differences in palliative knowledge and beliefs on pretest and posttest assessments. Factors that significantly influence willingness toward providing palliative care were assessed with univariate analysis. Backward stepwise logistic regression analysis was used to determine the key variables that influence the willingness. A *p* value <0.05 was considered statistically significant.

## Results

### Demographic characteristics

Demographic characteristics of the participants are presented in Table 1. A total of 147 interns completed the

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF INTERNS (N=147)

Variable	n	(%)
Gender		
Male	110	74.8
Female	37	25.2
Religious beliefs		
None	69	46.9
Folk religion	27	18.4
Buddhist	25	17.0
Taoist	9	6.1
Christian	16	10.9
Experience in caring for terminal cancer patients		
No	116	78.9
Yes	30	21.1
Family or friends have received palliative care		
No	141	95.9
Yes	6	4.1
Ever get information on palliative care		
Yes	123	83.7
No	24	6.3
Sources of information		
School curriculum	129	87.8
Medical staff	47	32.0
Newspapers/magazines	36	24.5
Periodicals or books	33	22.4
Mass media	27	18.4
Related seminars	16	10.9
Bulletins in hospital	16	10.9
In-service education	12	8.2
Friends	12	8.2
Subjective understanding of palliative care		
Very clearly	5	3.4
A little	119	81.0
Hearing about but do not understand	23	15.6

questionnaires before and after the training, resulting in a 100% response rate. The median age was 25 years and the majority of students were male (74.8%); 18.5% of the students considered themselves believing in folk religion and 17.0% were Buddhist. Most of the interns had no experience in caring for patients with terminal cancer. Main sources of palliative care information were school curriculum and medical staff.

**Knowledge of palliative care**

Interns had a 10% absolute improvement in their palliative care knowledge score, with accuracy rates of 74% and 84% before and after the training, respectively ( $p < 0.001$ ). Participants had a significant improvement in 14 questions, such as “Drug addiction is a major problem when morphine is used on a long-term basis for the management of pain” and “During the terminal stages of an illness, drugs that can cause respiratory depression are appropriate for the treatment of severe dyspnea.”

Particularly low scores were noted in “The provision of palliative care requires emotional detachment” and “The use of placebos is appropriate in the treatment of some types of pain.”

**Beliefs on palliative care**

The mean score of beliefs toward palliative care improved after training (3.78 versus 4.0, range, 1–5,  $p < 0.001$ ). The two

subconcepts of beliefs included: “benefits” and “barriers” (inverse counting) in providing palliative care, with mean scores of 4.29 and 3.36 before training, respectively. These results showed positive beliefs among interns toward providing palliative care before training. The items with a lower score in perceived barriers about providing palliative care were “should face the situation of patients suffering and dying,” “makes me feel helpless,” and “feels more about the meaningless of life and inability to help.”

After the 2-week rotation, significant improvement was noted in all of the “barriers” items (mean score = 3.66,  $p < 0.01$ ), except “should face the situation of patients suffering and dying” (Table 2).

**Willingness to provide palliative care**

Over 90% of the interns expressed a willingness to provide palliative care in future clinical practice if they encountered patients with terminal cancer (Table 3). The majority was willing to refer patients with terminal cancer to a palliative care unit (90.4%), followed by providing medical care and home visits.

The analysis of “willingness to provide palliative care” using the McNemar test showed that interns had a significant improvement in three items after training, including “provide information about palliative care resources” ( $p < 0.001$ ), “refer patients with terminal cancer to a palliative care unit” ( $p < 0.05$ ), and “provide medical care” ( $p < 0.01$ ).

**Factors influencing willingness**

Results of the stepwise logistic regression analysis are presented in Table 4. While other variables remained unchanged, “relatives’ support” and “willingness to provide medical care” were positively correlated before training (OR = 3.861, 95% CI = 1.217–12.243,  $p < 0.05$ ). However, this correlation vanished after training.

Prior to training, “subjective norm” and “willingness to provide home visits” were positively correlated (OR = 1.361, 95% CI = 1.081–1.714,  $p < 0.01$ ). Interns who perceived themselves to have “a little” understanding of palliative care had a higher willingness to provide home visits than those who had a perceived “very clear” understanding (OR = 17.974, 95% CI = 1.780–181.498,  $p < 0.05$ ). Interns who received information from school demonstrated a higher willingness to provide home visits. However, a lower willingness was noted in interns who received information from mass media (OR = 0.234, 95% CI = 0.088–0.627,  $p < 0.01$ ).

After the 2-week training, significant factors influencing the “willingness to provide home visits” were tested by stepwise logistic regression analysis. “Beliefs” was the only factor that was positively correlated with the “willingness to provide home visits.”

**Discussion**

To our knowledge, this study is one of the first in the Asia-Pacific region to investigate junior doctors’ willingness to provide palliative care and the associated influencing factors. Prior to training, interns’ willingness was positively correlated with relatives’ support and medical school education, and negatively influenced by information from mass media. Belief was the only factor that was positively correlated with

TABLE 2. BELIEFS OF INTERNS REGARDING PALLIATIVE CARE

	Pretest	Posttest	p value
<b>Benefits</b>			
1. Able to promote life quality and keep patient's dignity	4.43	4.50	0.09
2. Enable the patient to die peacefully and have a good death	4.33	4.48	0.00 <sup>a</sup>
3. Relieve pain and other symptoms	4.31	4.51	0.00 <sup>a</sup>
4. Provide care and companionship by medical team	4.21	4.44	0.00 <sup>a</sup>
5. Provide emotional support	4.20	4.37	0.00 <sup>a</sup>
6. Prepares for dying	4.23	4.33	0.10
7. Able to have family support	4.63	4.42	0.56
8. Respect for patient's religion and burial rites	4.20	4.33	0.02 <sup>b</sup>
9. Help to die at home	4.11	4.38	0.00 <sup>a</sup>
Total	4.29	4.42	0.03 <sup>b</sup>
<b>Barriers (inverse counting)</b>			
1. Make me feel helpless	2.48	2.73	0.00 <sup>a</sup>
2. Afraid of visiting terminal patients	3.24	3.59	0.00 <sup>a</sup>
3. Influences normal medical activities	3.31	3.58	0.00 <sup>a</sup>
4. Give up on patients	3.55	3.90	0.00 <sup>a</sup>
5. No active treatment and only awaits death	3.56	3.96	0.00 <sup>a</sup>
6. Patients feel abandoned	3.65	4.03	0.00 <sup>a</sup>
7. Makes patients feel hopeless	3.67	4.04	0.00 <sup>a</sup>
8. No aggressive treatment for physical symptoms	4.03	4.28	0.00 <sup>a</sup>
9. Should face the situation of patients suffering and dying	2.31	2.50	0.07
10. Feels more about the meaningless of life and inability to help	2.86	3.07	0.03 <sup>b</sup>
11. Shorten patient's life just like euthanasia	4.26	4.54	0.00 <sup>a</sup>
Total	3.36	3.66	0.00 <sup>a</sup>

<sup>a</sup>*p* < 0.001.<sup>b</sup>*p* < 0.05.

the willingness to provide home visits after training. This study demonstrates that the interns' knowledge of, positive beliefs regarding, and the perceived willingness to provide palliative care improved significantly after the training.

As the results reveal, approximately one third of the interns had inadequate knowledge about opioid use. Because pain and dyspnea are common symptoms in patients with terminal cancer,<sup>19</sup> and opioids are the major medications for symptom control,<sup>20,21</sup> this knowledge should be reinforced in medical education. A number of international organizations have advised against the use of placebo substitution,<sup>22</sup> which has been widely recognized as being unethical and potentially harmful. However, 90% of interns agreed with using placebo for the management of cancer pain and the accuracy rate was only 24% after training. In Taiwan, traditional cultural values of stoicism and a rare expression of true feelings lead patients

with cancer to believe that enduring pain is necessary.<sup>23</sup> This finding implies the need to emphasize the correct knowledge of pain control in future medical education.

After training, the only significant variable that was positively correlated with the willingness to provide home visits was "beliefs." Taiwanese attitudes toward end-of-life decision making can be understood through the lens of values from traditional religions.<sup>24</sup> In Taiwan, among those who reported religious beliefs, 61.6% believe in Buddhism, Taoism, and Confucianism while 36.4% were Christians and Catholics.<sup>25</sup> In addition to organized religions, approximately 80% of the Taiwanese also believe in traditional folk religions, which include some aspects of shamanism, ancestor worship, and animism. Such folk religions may overlap with an individual's belief in Taoism, Confucianism or Buddhism.<sup>26</sup> In the Taiwanese elderly, Taoist philosophy of natural harmony and flowing with the nature is the most popular view toward life and death.<sup>27</sup> In contrast, caring for patients with terminal cancer might be viewed as treatment failure and hopelessness in junior doctors and cause apprehension in visiting terminal patients. However, hope at the end of life can come in various forms: comfort, dignity, or intimacy.<sup>28</sup> By making interns realize that the poor prognosis in palliative care is not equal to hopelessness, their positive beliefs toward palliative care can be enhanced. After training, the item of "should face the situation of patients suffering and dying" did not improve significantly, but "afraid of visiting the terminal patients" improved. This may be because interns understood the needs of patients with terminal cancer better and learned how to accommodate them. Thus, this demonstrates that interns can overcome their fear of facing suffering and death.

TABLE 3. INTERNS' WILLINGNESS TO PROVIDE PALLIATIVE CARE (%)

	Pretest	Posttest	p value
No	6.1	2.7	0.180
Yes	93.8	97.2	
Provide information on palliative care resources	61.9	94.1	<0.001
Refer to palliative care unit	90.4	95.2	<0.05
Provide medical care	83.0	90.5	<0.01
Provide home visits	67.3	73.5	0.151
Provide phone visits	68.0	72.1	0.377
Provide bereavement care	64.6	71.4	0.100

TABLE 4. SIGNIFICANT INFLUENCING FACTORS OF INTERN'S WILLINGNESS TO PROVIDE PALLIATIVE CARE BY SUBMODELS

Predicting variables	Willingness/no willingness			
	$\beta$	S.E.	OR	95% CI of OR
<b>Submodel 1: Provide medical care</b>				
Before training				
Relatives' support	1.351	0.589	3.861 <sup>b</sup>	(1.217–12.243)
A little understanding of palliative care <sup>a</sup>	1.861	0.983	6.431	(0.936–44.192)
After training				
<b>Submodel 2: Provide home visits</b>				
Before training				
Subjective norm	0.308	0.118	1.361 <sup>c</sup>	(1.081–1.714)
A little understanding of palliative care <sup>a</sup>	2.889	1.180	17.974 <sup>b</sup>	(1.780–181.498)
Source of information (School)	1.256	0.593	3.511 <sup>b</sup>	(1.099–11.216)
Source of information (Mass media)	-1.451	0.502	0.234 <sup>c</sup>	(0.088–0.627)
After training				
Beliefs	1.074	0.519	2.926 <sup>b</sup>	(1.058–8.089)

<sup>a</sup>“Very clear understanding of palliative care” as reference group.

<sup>b</sup> $p < 0.05$ .

<sup>c</sup> $p < 0.01$ .

$\beta$ , Normalized beta coefficient; SE, standard error; OR, odds ratio; CI, confidence interval.

Interns' willingness to provide palliative medical care was affected by “relatives' support” before training. However, relatives of physicians in Taiwan might have negative perspectives toward palliative care. The Confucius culture emphasizes that the family is the original source of everything, and family values are emphasized in this traditional Chinese cultural background.<sup>29</sup> This is why Asians are likely to have a son as the medical decision-maker.<sup>30</sup> In Asian countries, disagreements between a patient and his or her family about end-of-life care may result in medical professionals who too often follow opinions of patients' family members more than those of the patients.<sup>31,32</sup> Moreover, Confucianism regards “Hsiao” (filial piety) as one of the key values necessary in maintaining social stability,<sup>24</sup> and the family members who sign a do-not-resuscitate (DNR) might be viewed as abandoning the loved one.<sup>30</sup> Transforming people's traditional conceptual frameworks that regard sending the dying loved ones to hospice as abandonment or an unfilial behavior is one of the keys to facilitating acceptance of palliative care in Asian countries. These factors make choosing hospice palliative care difficult in Taiwan.<sup>33</sup> After training, the influence of “relatives' support” was removed, therefore implying that interns' willingness was independent from external factors. This finding might be explained by the fact that interns' perceived positive beliefs were enhanced after palliative care training.

Palliative home care is important for strengthening the continuity of care for terminal cancer patients.<sup>34</sup> The old Chinese saying “Luo Yeh Guei Gen” expresses the traditional belief in a good death and that dying at home is as natural as the leaves fall down to the ground. Dying at home has a special cultural meaning both for Chinese patients and their families.<sup>35</sup> Although studies demonstrate that most patients with cancer prefer to receive terminal care and die at home,<sup>36</sup> the majority of cancer deaths still occur in hospital.<sup>37</sup> In Taiwan, transferring patients from the hospital to their home is also difficult. According to a previous multicenter study, in palliative care, place of care is the most frequent encountered ethical dilemma.<sup>38</sup> Therefore, the willingness of physicians to provide home visits in future clinical practice is important in

enhancing the quality of palliative care. Interns' willingness to provide home visits improved after training, but the change was not significant. One explanation is that most of the participants experienced clinical practice within the palliative care unit and might have relatively little experience with home visits. Moreover, 2 weeks of rotation may be too short to let interns realize the benefit of continuing palliative care.

Interns who perceived themselves as understanding information on palliative care “very clearly” had a lower willingness to provide home visits than those with “a little” understanding. The trend was not statistically significant, which might be interpreted as a wrong perception of understanding information “very clearly.” Moreover, interns who received information from the mass media showed a lower willingness to provide palliative care while interns who received information in school had a higher willingness. Inadequate information from mass media might focus on the suffering of patients with terminal cancer but rarely provides information on clinical care. In Taiwan, the public is reluctant to talk or think about death, preferring not to consider death until it occurs. Thoughts or conversations about a premature death is ill favored and in that sense people would see it as a taboo.<sup>27</sup> This may diminish interns' willingness to provide palliative care. Instead of this, end-of-life curriculum in medical school could provide the correct concepts with positive impact on medical students.<sup>4</sup> To enhance physicians' willingness to provide palliative care, presenting correct concepts and knowledge of palliative care through medical school education should be emphasized.

There are some limitations in this study. First, the training program was elective and nonparticipants were not recruited. Interns who joined the training course might have better knowledge and a higher willingness to provide palliative care. However, there were no differences in age and gender distribution between the participants and the entire cohort. Second, this study was conducted using a self-reporting questionnaire. The results might be overestimated because of the interns' tendency to report beliefs and willingness being viewed as appropriate by the supervisor. In addition, some

factors that could have an effect on the willingness to provide palliative care might not have been considered in the questionnaire. Nonetheless, although it was a structured questionnaire, we were able to examine a large number of variables and interns were free to express their feelings and beliefs. Third, the adaptation of the results to other countries is a concern as the palliative care models might vary by country. However, we believe that the core values and philosophies of palliative care training should be the same for each country.

In conclusion, educating junior doctors in building positive beliefs toward palliative care is strongly encouraged. Prospective research is required to examine the influence of interns' beliefs and willingness on their future clinical practice. A randomized controlled design is also warranted to explore the effect of end-of-life training on this willingness. Our study suggests that this kind of training course should be emphasized in medical education.

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