

families of cancer patients in Japan. The detailed methodology of this survey was described in a previous article.¹¹

All 153 palliative care units of Hospice Palliative Care Japan approved before September 2005 were recruited for this study, and 100 palliative care units participated in the study. We asked each institution to identify the bereaved family members of patients who died from November 2004 to October 2006 consecutively, up to 80 subjects in each institution. A total of about 8000 subjects were randomly allocated to 10 different questionnaire surveys. We mailed questionnaires to bereaved families in June 2007, and again in August 2007 to non-responding families.

Subjects

Primary physicians identified potential participants following the inclusion criteria: 1) bereaved family members of an adult cancer patient (one family member was selected for each patient); 2) aged 20 years or older; 3) capable of replying to a self-reported questionnaire; 4) aware of the diagnosis of malignancy; and 5) no serious psychological distress recognized by the primary physicians. The last criterion was based on our previous experience, and adopted on the assumption that primary physicians could identify families who would suffer a serious psychological impact from this survey; no formal criteria or psychiatric screening was applied.

Completion and return of the questionnaire was regarded as consent to participate in this study. The ethical and scientific validity were confirmed by the institutional review board of each hospital.

Questionnaire

The questionnaire was developed by the authors following the previous study.⁹ The primary endpoint was family-perceived appropriateness of the timing when physicians first referred patients to palliative care units. The level of family-perceived appropriateness was rated on a 5-point scale as "should have been referred much later (very early)," "should have been referred a little later (early)," "referred at the appropriate time," "should have been referred a little earlier (late)," and "should have been referred much earlier (too late)." In addition, we requested that

families report what the patients had said about the appropriateness of the referral timing on the same scale.

The families were further requested to report whether a palliative care team was involved in patient care, and to rate their overall evaluation of the usefulness of the palliative care team in terms of the following: 1) to palliate the patient's physical symptoms; 2) to palliate the patient's psychological distress; 3) to support family members; and 4) to provide care coordination of palliative care units and home care. The choices were "not useful," "somewhat useful," "useful," and "very useful."

Analyses

For comparisons, the family-perceived appropriateness of the referral timing was classified into three groups: 1) early or too early, 2) appropriate, and 3) late or too late. Statistical comparisons were performed with the *t*-test or Chi-squared test, where appropriate. All analyses were performed using the Statistical Package for the Social Sciences (ver. 11.0, SPSS, Inc., Tokyo, Japan).

Results

Six hundred and sixty-one families were sent questionnaires, and 451 responses were analyzed (response rate: 68%). Table 1 summarizes the backgrounds of the patients and family members. Families reported that a palliative care team was involved in patient care in

Table 1
Participants' Backgrounds

<i>Patients</i>	
Age	70 ± 12
Sex (male, %)	57% (n = 256)
<i>Family members</i>	
Age	59 ± 13
Sex (male, %)	35% (n = 159)
Relationship with patient	
Spouse	49% (n = 219)
Child	35% (n = 158)
Sibling	6.0% (n = 27)
Parents	5.3% (n = 24)
Other	3.8% (n = 17)
Time with patients in the final week	
Everyday	69% (n = 311)
4–6 Days	16% (n = 70)
1–3 Days	12% (n = 52)
None	2.9% (n = 13)

42% ($n = 191$) of the cases. The waiting period from application to admission was less than one week (47%, $n = 212$), one to two weeks (23%, $n = 102$), two to four weeks (16%, $n = 73$) and more than 4 weeks (12%, $n = 54$). There were no statistically significant correlations between the backgrounds of the patients and family members with primary endpoints (data not shown).

Family-Reported Appropriateness of the Timing of Referrals

Half of the bereaved family members regarded the timing of referrals to palliative care units as late or too late: too late (25%, $n = 114$), late (22%, $n = 97$), appropriate (47%, $n = 212$), early (2.4%, $n = 11$), and very early (1.8%, $n = 8$) (Table 2).

Among the 228 families that reported what patients had said about the timing of referrals (51% of all family members), about half reported that the patients said that the timing of referral was late or too late: too late (23%, $n = 52$), late (21%, $n = 49$), appropriate (48%, $n = 110$), early (4.4%, $n = 10$), and very early (3.1%, $n = 7$).

The concordance between families' and patients' evaluations was moderate (Cohen's $\kappa = 0.64$), and the absolute differences between families' and patients' ratings were less than 1 in 95% ($n = 214$).

Involvement of the Palliative Care Team and Family-Perceived Referral Timing

The families of patients with a palliative care team tended to report less frequently that they believed that the referral timing was late or too late with marginal statistical significance (43% vs. 51%) (Table 3). Furthermore, they reported significantly less frequently that the

Table 2
Referral Timing to Palliative Care Units

	Too Early	Early	Appropriate	Late	Too Late
	(%)	(%)	(%)	(%)	(%)
<i>Family-perceived</i>					
In 2003	2.2	1.6	48	30	19
In 2007	1.8	2.4	47	22	25
<i>Patient-reported</i>					
In 2003	2.9	2.2	36	35	24
In 2007	3.1	4.4	48	21	23

Table 3
Involvement of Palliative Care Team and Referral Timing

	Early or Too Early	Appropriate	Late or Too Late	P-value
	% (n)	% (n)	% (n)	
<i>Family-perceived</i>				
PCT involved ($n = 188$)	6.4 (12)	51 (95)	43 (81)	0.073
Not involved ($n = 254$)	2.8 (7)	46 (117)	51 (130)	
<i>Patient-reported</i>				
PCT involved ($n = 111$)	7.2 (8)	57 (63)	36 (40)	0.037
Not involved ($n = 117$)	7.7 (9)	40 (47)	52 (61)	

PCT = palliative care team.

patients had said that the referral timing was late or too late (36% vs. 52%).

Overall Evaluation of the Palliative Care Team

The percentages of families that evaluated the palliative care team as "somewhat useful," "useful," or "very useful" were 93% (to palliate the patient's physical symptoms), 90% (to palliate the patient's psychological distress), 92% (to support family members), and 87% (to provide care coordination of palliative care units and home care) (Table 4).

Discussion

This is, to our knowledge, the first study to 1) investigate the longitudinal changes in family-perceived appropriateness of the timing of referrals to palliative care units; and 2) examine the family-reported usefulness of palliative care teams as a nationwide sample. One of the important findings of this study was the

Table 4
Family-Perceived Usefulness of Palliative Care Team ($n = 188$)

	Not Useful	Somewhat Useful	Very Useful	Very Useful
	% (n)	% (n)	% (n)	% (n)
Symptom control	6.4 (12)	15 (28)	44 (82)	34 (64)
Emotional support for patients	10 (19)	16 (30)	46 (86)	28 (53)
Support for family	8.0 (15)	24 (46)	37 (70)	31 (59)
Care coordination	9.0 (17)	20 (38)	44 (82)	23 (44)

clarification of the proportion of families that considered that the timing of referrals was late, appropriate, or early at two points, before and after national efforts to disseminate palliative care teams by the Cancer Control Act. Both in 2003 and 2007, half of the bereaved families surveyed regarded the timing of referrals as late or too late, and there were no clear changes in the rates of late referrals. Involvement of a palliative care team, however, had moderate effects on the better timing of referrals to palliative care units, especially patient-perceived appropriateness. This finding suggests that the timing of referrals to palliative care units is still delayed in Japan, but palliative care activity did and will contribute to better access to palliative care units.

The second important finding of this study was the explanation of the family-perceived usefulness of a palliative care team using a nationwide sample. Evaluation of palliative care team activity is a difficult area for research because of the complex interaction of the palliative care team with patients, families, and health care providers.^{12,13} This study provided unique evidence of the usefulness of palliative care teams. Consistent with a previous study,¹⁴ family members were generally satisfied with palliative care team activity regarding symptom control, psychological support, family support, and care coordination.

This survey has several limitations. First, as 6.4% of the families that had serious psychological distress, as determined by primary physicians, were excluded and the response rate was not very high (68%), the population might not be representative of the study subjects. Second, the study subjects were limited to the families of patients who had been admitted to palliative care units, and the findings might not be applicable to families in other settings. Third, as the involvement of palliative care teams was determined by the family, some families under- or overreported the palliative care team activities. Fourth, as the study participants were bereaved family members, the findings could not be applied directly to patients. Finally, as the study population included patients who died before the establishment of the Cancer Control Act, the timing of the evaluation might be too early.

In conclusion, half of the Japanese bereaved families receiving inpatient specialized palliative

care services regarded the timing of referrals as late or too late, and the rates of late referrals apparently did not change in 2003 and in 2007 after the Cancer Control Act. The involvement of a palliative care team, however, significantly correlated with lower late referrals, and palliative care team activity was generally perceived as useful by the bereaved family members. Further dissemination of palliative care teams could contribute to better access to palliative care units and quality palliative care throughout the country.

References

1. World Health Organization. National cancer control programmes, 2nd ed. Geneva: WHO, 2002. Policies and managerial guidelines.
2. Casarett D, Abraham JL. Patients with cancer referred to hospice versus a bridge program: patient characteristics, needs for care, and survival. *J Clin Oncol* 2001;19:2057–2063.
3. Dudgeon DJ, Raubertas RF, Doerner K, O'Connor T, Tobin M. When does palliative care begin? A needs assessment of cancer patients with recurrent disease. *J Palliat Care* 1995;11:5–9.
4. Christakis NA, Escarce JJ. Survival of medicare patients after enrollment in hospice programs. *N Engl J Med* 1996;335:172–178.
5. Costantini M, Toscani F, Gallucci M, et al. Terminal cancer patients and timing of referral to palliative care: a multicenter prospective cohort study. *J Pain Symptom Manage* 1999;18:243–252.
6. Teno JM, Shu JE, Casarett D, et al. Timing of referral to hospice and quality of care: length of stay and bereaved family members' perceptions of the timing of hospice referral. *J Pain Symptom Manage* 2007;34:120–125.
7. Schockett ER, Teno JM, Miller SC, Stuart B. Late referral to hospice and bereaved family member perception of quality of end-of-life care. *J Pain Symptom Manage* 2005;30:400–407.
8. Rickerson E, Harrold J, Kapo J, Carroll JT, Casarett D. Timing of hospice referral and families' perceptions of services: are earlier hospice referrals better? *J Am Geriatr Soc* 2005;53:819–823.
9. Morita T, Akechi T, Ikenaga M, et al. Late referrals to specialized palliative care service in Japan. *J Clin Oncol* 2005;23:2637–2644.
10. Morita T, Fujimoto K, Tei Y. Palliative care team: the first year audit in Japan. *J Pain Symptom Manage* 2005;29:458–465.
11. Miyashita M, Morita T, Tsuneto S, Sato K, Shima Y. The Japan Hospice and Palliative Care

Evaluation study (J-HOPE study): study design and characteristics of participating institutions. *Am J Hosp Palliat Care* 2009;26:98–104.

12. Higginson IJ, Finlay IG, Goodwin DM, et al. Is there evidence that palliative care teams alter end-of-life experiences of patients and their caregivers? *J Pain Symptom Manage* 2003;25:150–168.

13. Higginson IJ, Finlay I, Goodwin DM, et al. Do hospital-based palliative teams improve care for patients or families at the end of life? *J Pain Symptom Manage* 2002;23:96–106.

14. O'Mahony S, Blank AE, Zallman L, Selwyn PA. The benefits of a hospital-based inpatient palliative care consultation service: preliminary outcome data. *J Palliat Med* 2005;8:1033–1039.

Original Article

Symptom Prevalence and Longitudinal Follow-Up in Cancer Outpatients Receiving Chemotherapy

Akemi Yamagishi, RN, MNS, Tatsuya Morita, MD, Mitsunori Miyashita, RN, PhD, and Fukuko Kimura, MD, PhD

Japan Cancer Society (A.Y.), Tokyo; Department of Adult Nursing/Palliative Care Nursing (A.Y., M.M.), School of Health Sciences and Nursing, Graduate School of Medicine, The University of Tokyo, Tokyo; Department of Palliative and Supportive Care, Palliative Care Team and Seirei Hospice (T.M.), Seirei Mikatabara Hospital, Hamamatsu; and International University of Health and Welfare (A.Y., F.K.), Tokyo, Japan

Abstract

Palliative care for cancer patients receiving chemotherapy in the outpatient setting is important. The aims of this study were 1) to identify symptom prevalence and intensity in cancer patients receiving chemotherapy and 2) to describe longitudinal follow-up data obtained from repeated assessment using the distress thermometer (DT). Questionnaires were distributed to consecutive cancer outpatients newly starting chemotherapy at the first appointment and at every hospital visit. The questionnaire included the severity of 11 symptoms (M. D. Anderson Symptom Inventory [MDASI], Japanese version), the DT, and the need for help in four psychosocial areas (decision-making, economic problems, nutrition, and daily activities). In total, 4000 questionnaires were returned by 462 patients. The frequently identified problems were oral problems (21%), insomnia (19%), psychological distress (defined as a DT score of 6 or more; 15%), help with information and decision-making (14%), severe fatigue (8.2%), and severe appetite loss (6.3%). Cluster analysis identified four symptom clusters: 1) fatigue and somnolence; 2) pain, dyspnea, and numbness; 3) nausea, appetite loss, and constipation; and 4) psychological distress. Of 165 patients with a DT of score 6 or more, 115 patients (70%) demonstrated a DT score below 6 at a median of 17 days follow-up. In the remaining 50 patients who had a DT score of 6 or more at follow-up, 34 patients (68%) had one or more physical symptoms rated at 7 or more on an 11-point numeric rating scale. Compared with patients with a DT score below 6 at follow-up, patients with a DT score of 6 or more at follow-up had higher levels of all physical symptoms. Frequent symptoms experienced by cancer outpatients receiving chemotherapy may be categorized as: 1) psychosocial issues (insomnia, psychological distress, decision-making support); 2) nutrition-gastrointestinal issues (oral problems, appetite loss, nausea); 3) fatigue; and 4) pain, dyspnea, and numbness. Developing a systematic intervention program targeting these four areas is urgently required. The DT score may be highly influenced by coexisting physical symptoms, and future studies to develop an appropriate system to identify patients with

This study was supported by the Sasakawa Health Science Foundation.

Address correspondence to: Tatsuya Morita, MD, Palliative Care Team and Seirei Hospice, Seirei Mikatabara

Hospital, 3453 Mikatabara-cho, Hamamatsu, Shizuoka 433-8558, Japan E-mail: tmorita@sis.seirei.or.jp

Accepted for publication: April 9, 2008.

psychiatric comorbidity are necessary. *J Pain Symptom Manage* 2009;37:823–830.
© 2009 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Palliative care, neoplasms, chemotherapy, outpatient

Introduction

Increasing numbers of cancer patients receive chemotherapy in the outpatient setting,¹ and symptom palliation for these outpatients is urgently required. The recent literature suggests a broad range of palliative care needs, including physical symptoms, psychological distress, help with decision-making, and economic and practical support.^{2–7}

Knowledge of symptom prevalence is important in clinical practice: 1) to anticipate problems and needs of patients; 2) to plan care for patients; and 3) to educate clinical staff to focus on particular symptoms.⁸ To clarify symptom prevalence and understanding patient needs are the first steps to establish an effective palliative care system for patients.

Although many studies have addressed symptom prevalence in cancer patients, their findings may not generalize to cancer outpatients receiving chemotherapy because: 1) most studies include cancer patients receiving no anticancer treatments,^{9–13} and few have specifically addressed cancer patients receiving chemotherapy; 2) sample sizes are usually small and nonrepresentative (i.e., limited to a certain specialty or patients consenting to a research intervention); and 3) no systematic survey has been performed in Japanese patients. In addition, cancer patients often have multiple concurrent symptoms,^{14–18} and symptom management has shifted from individual symptoms to symptom clusters,^{19–21} but few empirical studies have examined clustering symptoms in outpatient cancer patients receiving chemotherapy. To address these limitations, the first aims of this study were: 1) to clarify the prevalence of physical and psychological symptoms and concerns among a representative sample of cancer patients receiving chemotherapy in the outpatient setting and 2) to evaluate symptom clusters in this study population.

One of the most important symptoms is psychiatric comorbidity, including major depression and adjustment disorders. Despite the importance of early diagnosis and treatment, psychiatric comorbidity is difficult to identify and is often overlooked.^{22,23} Recent empirical studies suggested that the Distress Thermometer (DT) can be an appropriate method to identify cancer patients with major depression and adjustment disorder.^{24–27} The study populations in these studies, however, were limited to cancer patients referred to a psychiatric consultation service or a palliative care unit, or awaiting bone marrow transplantation, and only cross-sectional assessments were obtained. Longitudinal data from the outpatient chemotherapy setting, where the patient often experiences short-term deterioration and improvement of physical symptoms related to chemotherapy, are lacking. Clarifying longitudinal changes and the effects of physical symptoms on the DT can contribute to better understanding of the DT as a tool to identify psychiatric comorbidity in outpatient chemotherapy settings. The second aim of this study was thus to explore longitudinal change and the effects of physical symptoms on the DT.

Patients and Methods

This study included all cancer patients newly starting chemotherapy, with primary tumor sites of the lung, stomach or intestine, pancreas, bile duct, breast, ovary, and uterus, from April 2006 to December 2007. At the appointment regarding chemotherapy, pharmacists handed out a self-report questionnaire, with coaching on how to complete it.²⁸ This intervention was part of general instruction for outpatient chemotherapy, and required 10 to 20 minutes for completion. All pharmacists received an hour of educational instruction by the second author. Questionnaires were thereafter distributed at every hospital visit. If the

patients refused to complete the questionnaire or recognized no need, they were not obliged to complete it.

Demographic and medical variables (age, sex, primary cancer site, and opioid consumption) were obtained from medical charts. Opioid consumption was calculated as the daily amounts (mg) of oral morphine using the standard calculation ratio (transdermal fentanyl 25 µg/hour = oral oxycodone 40 mg = oral morphine 60 mg).

The Institutional Review Board approved the ethical and scientific validity of a retrospective analysis of the questionnaire data obtained as part of routine clinical activity. Admitted patients gave written consent that their clinical information could be used for clinical research.

Questionnaire

The study group developed the questionnaire on the basis of existing validated instruments^{24,29-32} (available in our previous report²⁸). The questionnaire included: 1) an open-ended question about the patient's greatest concerns; 2) 0-10 numeric rating scales of eight physical symptoms (pain, dyspnea, nausea, appetite loss, somnolence, fatigue, constipation, numbness) adopted from the Japanese version of the M. D. Anderson Symptom Inventory (MDASI);²⁹ 3) presence or absence of oral problems, fever, and insomnia; 4) a 0-7 numeric rating scale of overall quality of life adopted from item 29 of the European Organization for Research and Treatment of Cancer (EORTC)-C30 questionnaire;³⁰ 5) the DT;^{24,31} 6) presence or absence of a need for help in four areas, i.e., information about treatment and decision-making, economic problems, nutrition, and daily activities;^{7,32} and 7) wish for help from the specialized palliative care service.

Analyses

The prevalence of problems was calculated for each questionnaire. Analyses of opioid consumption were performed only for patients receiving opioids. For calculations, we adopted the definition of moderate and severe symptom intensity for MDASI items as 4-6 and 7-10, respectively. We used cutoff points on the DT of 6 or more based on previous findings,^{24,31} and follow-up data of the DT was defined as the score obtained at a visit closest to

two weeks after the initial assessment and within four weeks. We determined that a patient had problems if s/he had MDASI symptom scores of 7 or more, an oral problem, fever, insomnia, a DT score of 6 or more, or an expressed need for any help with information and decision-making, nutrition, economic problems, or daily activities.

For comparisons, age was classified into two groups (less than 60 years and 60 years or more), and primary tumor sites were classified into three groups (chest, breast, and gastrointestinal). Univariate analysis was performed by the Mann-Whitney test or Kruskal-Wallis test, where appropriate. The effect of age was estimated with adjustment for gender and primary tumor site, and the effect of gender was estimated with adjustment for age and primary tumor site.

We performed cluster analysis and displayed a dendrogram using average linkage. Clusters were formed based on the distance between symptom ratings, which were calculated using squared Euclidian distances.

To explore the longitudinal change and effects of physical symptom on the DT, we initially identified all patients who had a DT score of 6 or more at any time during the study period. We then classified them into two groups: those with a DT score that declined to less than 6 at the follow-up and those with a DT score of 6 or more at the follow-up. We compared their demographic factors and the intensity of all physical symptoms.

For statistical analysis, SPSS for Windows (version 11.0) was used.

Results

During this study period, 472 patients newly started chemotherapy, and 10 refused to complete the questionnaire. In total, we obtained 4000 questionnaires from 462 patients (compliance rate, 98%). Each patient completed a median of six questionnaires during the study period. The percentages of missing values ranged from 2.8% (appetite loss) to 4.8% (dyspnea). Table 1 summarizes the patient characteristics. Forty-seven patients received an opioid, with a mean of 36 mg oral morphine equivalent/day (range, 5.0-170;

Table 1
Patient Characteristics (n = 462)

	n (%)
Age (yr ± SD)	62 ± 11
Sex	
Male	209 (45)
Female	253 (55)
Primary sites	
Lung, chest	150 (33)
Breast	113 (25)
Colon, rectum	65 (14)
Stomach	74 (16)
Uterus, ovary	33 (7.1)
Pancreas, bile duct	19 (4.1)
Others	8 (1.7)
Chemotherapy regimens	
Carboplatin and taxanes	100 (21)
Oral tegafur, gimeracil, oteracil with/without taxanes	80 (17)
Taxanes	76 (16)
Doxorubicin and cyclophosphamide	75 (16)
Fluorouracil	47 (10)
Gemcitabine	20 (4.3)
Oxaliplatin and 5-fluorouracil/leucovorin	10 (2.1)
Irinotecan (with/without taxanes)	9 (1.9)
Trastumab (with/without taxanes)	8 (1.7)
Gefitinib	7 (1.5)
Low-dose cisplatin and 5-fluorouracil	3 (0.6)
Vinorelbine	2 (0.4)
Oral capecitabine	2 (0.4)
Others	23 (7.1)

oral oxycodone, n = 25; transdermal fentanyl, n = 11; and oral morphine, n = 11).

Symptom Prevalence and Symptom Clusters

Frequently identified problems were oral problems (21%), insomnia (19%), psychological distress (defined as a DT score of 6 or more; 15%), needing help with information and decision-making (14%), severe fatigue (8.2%), and severe appetite loss (6.3%) (Table 2). As a whole, problems were identified in half of all questionnaires.

Table 3 summarizes the effects of age and gender on each symptom. Younger patients reported significantly higher intensity of pain and nausea, and male patients reported significantly higher intensity of fatigue, dyspnea, appetite loss, and somnolence, after adjustment for other demographic variables. Opioid consumption was significantly higher in male patients.

Four symptom clusters emerged in this population (Fig. 1): 1) fatigue and somnolence; 2) pain, dyspnea, and numbness; 3) nausea, appetite loss, and constipation; and 4) psychological distress.

Table 2
Problems Identified in 4000 Questionnaires

	Prevalence (%) ^a	Mean ± SD (median) ^b
Physical problems		
MDASI items	Severe Moderate Total	
Fatigue	8.2 15 23	2.2 ± 2.5 (1.0)
Appetite loss	6.3 11 17	1.6 ± 2.4 (0.0)
Constipation	4.9 11 16	1.5 ± 2.2 (0.0)
Somnolence	4.6 9.1 15	1.7 ± 2.2 (1.0)
Pain	3.6 11 14	1.5 ± 2.0 (1.0)
Dyspnea	3.5 9.0 13	1.2 ± 2.0 (0.0)
Numbness	5.3 6.9 12	1.2 ± 2.2 (0.0)
Nausea	2.4 6.2 9.0	0.9 ± 1.7 (0.0)
Oral problems		21
Fever		6.8
Psychological problems		
Insomnia		19
DT		15
Concern		
Information and help with decision-making		14
Nutrition		5.6
Daily activities		4.6
Economic problems		2.4

^aThe percentages of responses with moderate (4–6) and severe (7–10) symptom intensity for MDASI items; the percentages of score of 6 or more for the DT; the percentages of problem presence for other items.

^bMean values calculated for only MDASI items.

Longitudinal Change in the DT

Of 462 patients, 170 patients (37%) had a DT score of 6 or more at any time during the study period. Owing to a lack of follow-up data in five patients, we used 165 patients for follow-up analyses, and the median interval from the initial assessment was 17 days (range, 7–28 days).

Of 165 patients with a DT score of 6 or more, 115 patients (70%) had a score below 6 at follow-up (Fig. 2). In the remaining 50 patients who had a DT score of 6 or more at follow-up, 34 patients (68%) had one or more physical symptoms rated as 7 or more, and an additional 12 patients (24%) had one or more physical symptoms rated as 4 to 6.

Compared with patients with a DT score below 6 at follow-up, patients with a continuing DT score of 6 or more had higher levels of all physical symptoms at follow-up, including pain, dyspnea, nausea, appetite loss, somnolence, fatigue, constipation, and numbness (Table 4). The level of the DT and all physical symptoms in the initial assessment

Table 3
Association Between Symptom Intensity and Age, Gender, and Primary Tumor Site

	Age			Gender			Primary Tumor Sites			
	<60	>60	P	Male	Female	P	Abdominal	Chest	Breast	P
Fatigue	2.2 ± 2.3	2.2 ± 2.6	0.51	2.3 ± 2.6	2.1 ± 2.4	<0.001	2.5 ± 2.7	1.5 ± 2.1	2.3 ± 2.3	<0.001
Pain	1.7 ± 1.9	1.5 ± 2.0	0.003	1.5 ± 2.0	1.7 ± 2.1	0.70	1.6 ± 2.0	1.3 ± 2.0	1.9 ± 2.1	<0.001
Numbness	1.4 ± 2.2	1.1 ± 2.1	0.71	0.9 ± 1.8	1.5 ± 2.5	0.16	1.1 ± 1.8	0.7 ± 1.7	2.2 ± 3.0	<0.001
Dyspnea	1.2 ± 1.9	1.3 ± 2.0	0.41	1.3 ± 2.0	1.1 ± 1.9	<0.001	1.2 ± 1.8	1.3 ± 2.1	1.2 ± 2.0	0.15
Appetite loss	1.6 ± 2.3	1.7 ± 2.4	0.33	1.8 ± 2.5	1.5 ± 2.2	0.004	1.9 ± 2.5	1.4 ± 2.3	1.3 ± 2.1	<0.001
Nausea	1.1 ± 2.0	0.8 ± 1.6	<0.001	0.9 ± 1.8	0.9 ± 1.8	0.84	1.2 ± 1.8	0.6 ± 1.8	0.8 ± 1.7	<0.001
Somnolence	1.7 ± 2.0	1.8 ± 2.3	0.62	1.8 ± 2.3	1.7 ± 2.1	<0.001	2.0 ± 2.3	1.3 ± 2.0	1.8 ± 2.1	<0.001
Constipation	1.5 ± 2.1	1.6 ± 2.3	0.50	1.7 ± 2.4	1.4 ± 2.1	0.042	1.9 ± 2.3	1.2 ± 2.2	1.2 ± 2.0	<0.001
Psychological distress	3.2 ± 2.5	3.0 ± 2.8	0.066	2.9 ± 2.8	3.2 ± 2.6	0.32	3.2 ± 2.7	2.6 ± 2.7	3.5 ± 2.6	<0.001
Opioid consumption ^a	29 ± 27	28 ± 20	0.20	33 ± 25	18 ± 13	0.019	37 ± 28	23 ± 13	18 ± 15	<0.001

P-values for age were adjusted for gender and primary tumor sites. P-values for gender were adjusted for age and primary tumor sites.
^aOral morphine equivalent (mg/day).

demonstrated no significant difference between the groups.

Discussion

This is, to our knowledge, the first large study to identify symptom prevalence and intensity in cancer patients receiving chemotherapy, in addition to providing longitudinal follow-up data from the DT, in the outpatient setting of a general hospital, a typical regional cancer center in Japan.

The first important finding of this study was the clarification of the types of symptoms and concerns observed in cancer outpatients receiving chemotherapy. In this study, the predominant problems were psychosocial issues (insomnia, psychological distress, concern about information, and decision-making), nutrition-related issues (oral problems and appetite loss), and fatigue. Furthermore, four distinct symptom clusters were identified: 1) fatigue and somnolence; 2) pain, dyspnea, and numbness; 3) nausea, appetite loss, and

constipation; and 4) psychological distress. From these findings, the outpatient chemotherapy department should establish a palliative care program targeting: 1) psychosocial issues (insomnia, psychological distress, decision-making support); 2) nutrition-gastrointestinal issues (oral problems, appetite loss, nausea); 3) fatigue; and 4) pain, dyspnea, and numbness. Pharmacological treatments, collaboration with mental health professionals and dentists, and cognitive-behavioral nursing interventions are promising, and should be tested in future intervention trials of Japanese cancer patients.³³⁻³⁸

The second important finding of this study was longitudinal follow-up data from patients receiving outpatient chemotherapy who were repeatedly assessed using the DT. This is the first study to explore longitudinal changes in the DT in the outpatient chemotherapy setting. In this setting, 11% of all patients had a DT score of 6 or more at any time of treatment. The majority (70%), however, demonstrated a DT score below 6 within four weeks,

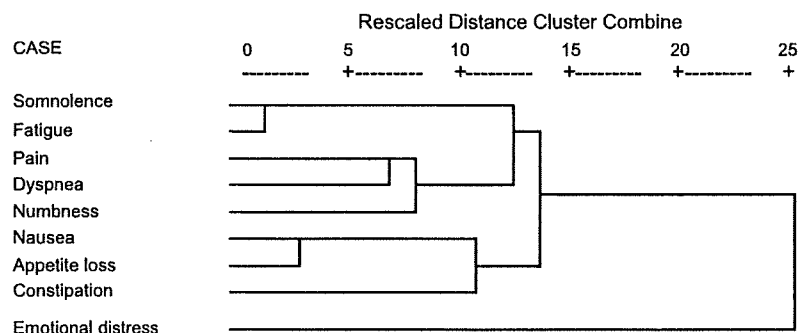
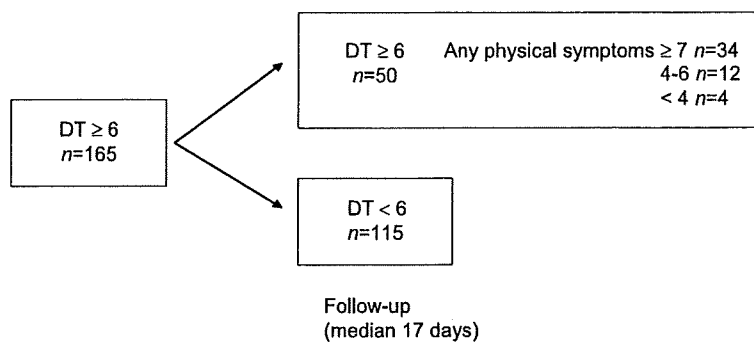


Fig. 1. Symptom cluster.



DT: Distress Thermometer

Fig. 2. Changes in the DT.

and the change in the DT was strongly associated with changes in physical symptoms. This result suggests that chemotherapy-related physical symptoms may highly influence the DT and result in rapid changes within several weeks in the outpatient chemotherapy setting. Future study is required to assess the usefulness of the DT as a clinical tool to identify patients with psychiatric comorbidity. Modifying the procedure, such as two-point follow-up, or encouraging symptom control to be

maximized before rating the DT, may be necessary. In the meantime, clinicians should note that a high score in the DT is not simply the indicator of psychiatric comorbidity. DT often indicates the need for palliating co-existing physical symptoms.

Age and gender differences in the symptoms of cancer patients are a focus of some researchers.³⁹⁻⁴⁵ Consistent with previous findings from a systematic review of symptom prevalence,⁴⁴ higher pain intensity was significantly associated with younger age. This result indicates that younger patients need special attention in terms of pain management and active monitoring of pain. We also observed gender differences in some symptoms: male patients reported a higher intensity of fatigue, dyspnea, appetite loss, and somnolence, in addition to a higher dose of opioids, after adjustment for age and primary tumor sites. This result is not consistent with a large-scale study of patients receiving no anticancer treatments that revealed a gender difference in the prevalence of nausea.^{44,45} Potential interpretations of these differences include: 1) different measurement methods (i.e., symptom intensity vs. frequency); 2) different treatment settings (receiving chemotherapy in the outpatient setting vs. palliative phase); and 3) analyses with or without adjustment for other factors. To determine the effects of age and gender on symptom intensity in this population, more pooled data from this setting is necessary.

This was a descriptive study of clinical experience and thus had considerable limitations. First, as the patients were a heterogeneous sample of primary tumor sites, stages, and

Table 4
Comparison of Patients with a DT of 6 or More and Below 6 at Follow-up

	Patients with DT of 6 or More at Follow-up (n = 50)	Patients with DT Below 6 at Follow-up (n = 115)	P-value
Age	63 ± 9.6	63 ± 11	0.26
Sex (male)	56% (n = 28)	44% (n = 51)	0.17
At initial assessment			
Pain	3.2 ± 2.6	2.8 ± 2.8	0.63
Dyspnea	2.3 ± 2.6	1.8 ± 2.5	0.49
Nausea	2.1 ± 2.8	2.2 ± 3.0	0.11
Appetite loss	3.4 ± 3.1	3.4 ± 3.3	0.38
Somnolence	3.0 ± 2.5	2.5 ± 2.4	0.89
Fatigue	4.6 ± 3.0	3.5 ± 2.8	0.56
Constipation	2.4 ± 2.6	2.9 ± 3.2	0.027
Numbness	2.8 ± 3.0	1.8 ± 2.7	0.16
DT	7.4 ± 1.2	7.6 ± 1.3	0.15
At follow-up			
Pain	3.5 ± 2.7	1.5 ± 1.8	0.001
Dyspnea	3.1 ± 2.8	1.1 ± 1.8	<0.001
Nausea	2.2 ± 2.7	0.48 ± 1.0	<0.001
Appetite loss	3.7 ± 3.0	1.1 ± 1.8	<0.001
Somnolence	3.9 ± 2.7	1.3 ± 1.6	<0.001
Fatigue	5.0 ± 3.0	1.9 ± 2.3	0.005
Constipation	3.1 ± 2.9	1.4 ± 2.3	<0.001
Numbness	3.0 ± 3.1	1.0 ± 1.7	<0.001

Analyses were performed on patients who had a DT score of 6 or more at any time in this study period (n = 165).

chemotherapy regimens, the results cannot be automatically generalized to specific target populations. We believe that this is not a fatal flaw of this study, but rather can be a strength, because we need to develop a useful system for heterogeneous outpatients receiving chemotherapy. Second, this was a single-institution study. We believe, however, that the results are generalizable to other institutions, as our hospital is a typical general hospital functioning as a regional cancer center. Third, we adopted the single-item DT to increase patients' compliance. The combined use of the DT and impact thermometer (i.e., the degree of interference with daily activity) might decrease the influence of physical symptoms. Finally, we did not analyze the effects of chemotherapy cycle of each regimen on symptom intensity, and this should be explored in a future study.

In conclusion, frequent symptoms of cancer outpatients receiving chemotherapy are categorized as: 1) psychosocial issues (insomnia, psychological distress, decision-making support); 2) nutrition-gastrointestinal issues (oral problems, appetite loss, nausea); 3) fatigue; and 4) pain, dyspnea, and numbness. Developing a systematic intervention program targeting these four areas is urgently required. The DT might be an effective tool to monitor psychological distress but can be highly influenced by coexisting physical symptoms. Future studies are required to determine the intervention effects in the above four areas and to develop more appropriate procedures to identify patients with psychiatric comorbidity.

References

1. Earle CC, Neville BA, Landrum MB, et al. Trends in the aggressiveness of cancer care near the end of life. *J Clin Oncol* 2004;22:315-321.
2. Bang SM, Park SH, Kang HG, et al. Changes in quality of life during palliative chemotherapy for solid cancer. *Support Care Cancer* 2005;13:515-521.
3. Munkres A, Oberst MT, Hughes SH. Appraisal of illness, symptom distress, self-care burden and mood states in patients receiving chemotherapy for initial and recurrent cancer. *Oncol Nurs Forum* 1992;19:1201-1209.
4. Matsuyama R, Reddy S, Smith TJ. Why do patients choose chemotherapy near the end of life? A review of the perspective of those facing death from cancer. *J Clin Oncol* 2006;24:3490-3496.
5. Schonwetter RS, Roscoe LA, Nwosu M, Zilka B, Kim S. Quality of life and symptom control in hospice patients with cancer receiving chemotherapy. *J Palliat Med* 2006;9:638-645.
6. Whitmer KM, Pruemer JM, Nahleh ZA, Jazieh AR. Symptom management needs of oncology outpatients. *J Palliat Med* 2006;9:628-630.
7. Newell S, Sanson-Fisher RW, Girgis A, Ackland S. The physical and psychosocial experiences of patients attending an outpatient medical oncology department: a cross-sectional study. *Eur J Cancer Care* 1999;8:69-72.
8. Higginson IJ, Addington-Hall JM. The epidemiology of death and symptoms. In: Doyle D, Hanks G, Cherny N, Calman K, eds. *Oxford textbook of palliative medicine*, 3rd ed. Oxford: Oxford University Press, 2005: 14-24.
9. Conill C, Verger E, Henriquez I, et al. Symptom prevalence in the last week of life. *J Pain Symptom Manage* 1997;14:328-331.
10. Mercadante S, Fulfaro F, Casuccio A. The impact of home palliative care on symptoms in advanced cancer patients. *Support Care Cancer* 2000;8:307-310.
11. Mercadante S, Casuccio A, Fulfaro F. The course of symptom frequency and intensity in advanced cancer patients following at home. *J Pain Symptom Manage* 2000;20:104-112.
12. Meuser S, Pietruck C, Radbruch L, et al. Symptom during cancer pain treatment following WHO guidelines: a longitudinal follow-up study of symptom prevalence, severity and etiology. *Pain* 2001;93:247-257.
13. Wachtel T, Allen-Masterson S, Reuben D, Goldberg R, Mor V. The end stage cancer patient: terminal common pathway. *Hosp J* 1988;4:43-80.
14. Chang VT, Hwang SS, Deurman M, Kasmnis BS. Symptom and quality of life survey of medical oncology patients at a veteran affairs medical center: a role for symptom assessment. *Cancer* 2000;88:1175-1183.
15. Chen ML, Chang HK. Physical symptom profiles of depressed and non-depressed patients with cancer. *Palliat Med* 2004;18:712-718.
16. Given B, Given CW, McCorkle R, et al. Pain and fatigue management: results of a nursing randomized clinical trial. *Oncol Nurs Forum* 2002;29:949-956.
17. Armstrong TS, Cohen MZ, Eriksen LR, Hickey JV. Symptom clusters in oncology patients and implications for symptom research in people with primary brain tumors. *J Nurs Scholarsh* 2004;36:197-206.

18. Chen ML, Tseng HC. Symptom clusters in cancer patients. *Support Care Cancer* 2006;14:825–830.
19. Dodd MJ, Miaskowski C, Lee KA. Occurrence of symptom clusters. *J Natl Cancer Inst Monogr* 2004;76–78.
20. Dodd MJ, Miaskowski C, Paul SM. Symptom clusters and their effect on the functional status of patients with cancer. *Oncol Nurs Forum* 2001;28:465–470.
21. Miaskowski C, Dodd MJ, Lee KA. Symptom cluster: the new frontier in symptom management. *J Natl Cancer Inst Monogr* 2004;17–21.
22. McDonald MV, Passik SD, Dugan W, et al. Nurses' recognition of depression in their patients with cancer. *Oncol Nurs Forum* 1999;26:593–599.
23. Passik SD, Dugan W, McDonald MV, et al. Oncologists' recognition of depression in their patients with cancer. *J Clin Oncol* 1998;16:1594–1600.
24. Akizuki N, Akechi T, Nakanishi T, et al. Development of a brief screening interview for adjustment disorders and major depression in patients with cancer. *Cancer* 2003;97:2605–2613.
25. Gessler S, Low J, Daniells E, et al. Screening for distress in cancer patients: is the distress thermometer a valid measure in the UK and does it measure change over time? A prospective validation study. *Psychooncology* 2007;17(6):538–547.
26. Hegel MT, Collins ED, Kearing S, et al. Sensitivity and specificity of the Distress Thermometer for depression in newly diagnosed breast cancer patients. *Psychooncology* 2007;17(6):556–560.
27. Graves KD, Arnold SM, Love CL, et al. Distress screening in a multidisciplinary lung cancer clinic: prevalence and predictors of clinically significant distress. *Lung Cancer* 2007;55:215–224.
28. Morita T, Fujimoto K, Namba M, et al. Palliative care needs of cancer outpatients receiving chemotherapy: an audit of a clinical screening project. *Support Care Cancer* 2008;16:101–107.
29. Okuyama T, Wang XS, Akechi T, et al. Japanese version of the M.D. Anderson Symptom Inventory: a validation study. *J Pain Symptom Manage* 2003;26:1093–1104.
30. Groenvold M, Petersen MA, Aaronson NK, et al. The development of the EORTC QLQ-C15-PAL: a shortened questionnaire for cancer patients in palliative care. *Eur J Cancer* 2006;42:55–64.
31. Akizuki N, Yamawaki S, Akechi T, Nakano T, Uchitomi Y. Development of an Impact Thermometer for use in combination with the Distress Thermometer as a brief screening tool for adjustment disorders and/or major depression in cancer patients. *J Pain Symptom Manage* 2005;29:91–99.
32. Cossich T, Schofield P, McLachlan SA. Validation of the cancer needs questionnaire (CNQ) short-form version in an ambulatory cancer setting. *Qual Life Res* 2004;13:1225–1233.
33. Koedoot CG, de Haan RJ, Stiggelbout AM, et al. Palliative chemotherapy or best supportive care? A prospective study explaining patients' treatment preference and choice. *Br J Cancer* 2003;89:2219–2226.
34. Grunfeld EA, Maher EJ, Browne S, et al. Advanced breast cancer patients' perceptions of decision-making for palliative chemotherapy. *J Clin Oncol* 2006;24:1090–1098.
35. Barsevick AM, Dudley W, Beck S, et al. A randomized clinical trial of energy conservation for patients with cancer-related fatigue. *Cancer* 2004;100:1302–1310.
36. Ream E, Richardson A, Dann CA. Supportive intervention for fatigue in patients undergoing chemotherapy: a randomized controlled trial. *J Pain Symptom Manage* 2006;31:148–161.
37. Jatoi A, Rowland K, Loprinzi CL, et al. An eicosapentaenoic acid supplement versus megestrol acetate versus both for patients with cancer-associated wasting: a north central cancer treatment group and national cancer institute of Canada collaborative effort. *J Clin Oncol* 2004;22:2469–2476.
38. Ravasco P, Grillo IM, Vidal PM, Camilo ME. Dietary counseling improves patients outcomes: a prospective, randomized, controlled trial in colorectal cancer patients undergoing radiotherapy. *J Clin Oncol* 2005;23:1431–1438.
39. Grond S, Zech D, Diefenbach C, Bischoff A. Prevalence and pattern of symptoms in patients with cancer pain: a prospective evaluation of 1635 cancer patients referred to a pain clinic. *J Pain Symptom Manage* 1994;9:372–382.
40. Lidstone V, Butters E, Seed PT, et al. Symptoms and concerns amongst cancer outpatients: identifying the need for specialist palliative care. *Palliat Med* 2003;17:588–595.
41. Lo RS, Ding A, Chung TK, Woo J. Prospective study of symptom control in 133 cases of palliative care in patients in Shatin Hospital. *Palliat Med* 1999;13:335–340.
42. Krech RL, Davis J, Walsh D, Curtis EB. Symptoms of lung cancer. *Palliat Med* 1992;6:309–315.
43. Dunlop GM. A study of the relative frequency and importance of gastrointestinal symptoms, and weakness in patients with far advanced cancer: student paper. *Palliat Med* 1989;4:31–41.
44. Teunissen SC, Wesker W, Kruitwagen C, et al. Symptom prevalence in patients with incurable cancer: a systematic review. *J Pain Symptom Manage* 2007;34:94–104.
45. Walsh D, Donnelly S, Rybicki L. The symptom of advanced cancer: relationship to age, gender, and performance status in 1000 patients. *Support Cancer Care* 2000;8:175–179.

Original Article

Meaninglessness in Terminally Ill Cancer Patients: A Randomized Controlled Study

Tatsuya Morita, MD, Hisayuki Murata, MA, Emi Kishi, RN, Mitsunori Miyashita, RN, PhD, Takuhiro Yamaguchi, PhD, and Yosuke Uchitomi, MD, PhD

on behalf of the Japanese Spiritual Care Task Force^a

Department of Palliative and Supportive Care, Palliative Care Team, and Seirei Hospice (T.M.), Seirei Mikatahara General Hospital, Hamamatsu, Shizuoka; School of Human Culture (H.M.), Kyoto Notre Dame University, Kyoto; Palliative Care Unit (E.K.), Takatsuki Red Cross Hospital, Osaka; Department of Adult Nursing/Palliative Care Nursing (M.M.), School of Health Sciences and Nursing, and Department of Clinical Trial Data Management (T.Y.), Graduate School of Medicine, University of Tokyo, Tokyo; and Psycho-Oncology Division (Y.U.), National Cancer Center Research Institute East, Tokyo; and Psychiatry Division (Y.U.), National Cancer Center Hospital East, Kashiwa City, Chiba, Japan

Abstract

Although recent empirical studies reveal that fostering patients' perception of meaning in their lives is an essential task for palliative care clinicians, few studies have reported the effects of training programs for nurses specifically aimed at improving these skills. The primary aim of this randomized controlled trial was to determine the effects of an educational workshop focusing on patients' feelings of meaninglessness on nurses' confidence, self-reported practice, and attitudes toward caring for such patients, in addition to burnout and meaning of life. The study was designed as a single-institution, randomized controlled trial using a waiting list control. The intervention consisted of eight 180-minute training sessions over four months, including lectures and exercises using structured assessment. A total of 41 nurses were randomly allocated to three groups, which were separately trained, and all were evaluated four times at three-month intervals (before intervention, between each intervention, and after the last intervention). Assessments included validated Confidence and Self-Reported Practice scales, the Attitudes Toward Caring for Patients Feeling Meaningless Scale (including willingness to help, positive appraisal, and helplessness items), the Maslach Burnout Scale, job satisfaction, and the Functional Assessment of Chronic Illness Therapy-Spiritual (FACIT-Sp). One participant withdrew from the study before the baseline evaluation, and the remaining 40 nurses completed the study. The nurses were all female and had a mean age of 31 ± 6.4 , and mean clinical experience of 8.9 ± 5.5 years. There were no significant differences in background among the groups. The intervention effects were statistically significant on the Confidence Scale, the Self-Reported Practice Scale, and the

Address correspondence to: Tatsuya Morita, MD, Department of Palliative and Supportive Care, Palliative Care Team, and Seirei Hospice, Seirei Mikatahara General Hospital, 3453 Mikatahara-cho, Hamamatsu, Shizuoka 433-8558, Japan. E-mail: tmorita@sis.seirei.or.jp

^aSee Appendix for list of members.

Accepted for publication: April 9, 2008.

willingness to help, positive appraisal, and helplessness subscales, in addition to the overall levels of burnout, emotional exhaustion, personal accomplishment, job satisfaction, and the FACIT-Sp. The change ratio of each parameter ranged from 5.6% (willingness to help) to 37% for the helplessness score and 51% on the Confidence Scale. The percentages of nurses who evaluated this program as "useful" or "very useful" were 85% (to understand the conceptual framework in caring for terminally ill patients with meaninglessness), 80% (to foster nurses' personal values), and 88% (to know how to provide care for patients with meaninglessness). This educational intervention had a significant beneficial effect on nurse-perceived confidence, practice, and attitudes in providing care for patients feeling meaninglessness, in addition to the levels of burnout and spiritual well-being of nurses. *J Pain Symptom Manage* 2009;37:649–658. © 2009 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Palliative care, neoplasms, education, spiritual care, suffering, meaning, nurse

Introduction

Recent empirical studies reveal that fostering patients' perceptions of meaning in their lives is an essential task for palliative care clinicians.^{1–4} In Japan, multiple surveys have identified that terminally ill cancer patients experience considerable levels of meaninglessness.^{5,6} Our group recently proposed a conceptual framework for psycho-existential care for Japanese patients.⁷ We defined psycho-existential suffering as pain caused by extinction of the being and the meaning of the self. We assumed that psycho-existential suffering is caused by the loss of essential components of meaning for human beings: loss of relationships with others, loss of autonomy, and loss of future (temporality). In this model, sense of meaning is interpreted as a main outcome, as consistent with some psychometric instruments measuring sense of meaning as a core concept of the state of spiritual well-being.⁷

In fostering a sense of meaning in terminally ill cancer patients, nurses play a major role. Nurses often experience difficulty and emotional stress when facing terminally ill cancer patients with unrelieved suffering.^{8–10} One of the sources of nurses' stress is the lack of an adequate training system to improve the skills required to care for such patients.^{8–10} General training in communication skills has been described and evaluated.^{11,12} A few studies also have reported the effects of training programs for nurses, specifically aimed at improving skills to relieve meaninglessness in terminally

ill cancer patients.^{13–16} These pioneer studies have major limitations, however, including no control groups, a nonstructured intervention, and the use of nonvalidated measurement tools.

In our previous work,¹⁷ we validated measurement tools to quantify nurses' self-reported practice and attitudes toward caring for terminally ill cancer patients feeling meaninglessness, and explored the effects of a five-hour educational workshop focusing on meaninglessness on nurses' self-reported practice, attitudes toward caring for such patients, confidence, burnout, death anxiety, and meaning of life. After the short-term educational session, the nurses' self-reported practice and confidence significantly improved, and helplessness, emotional exhaustion, and death anxiety significantly decreased. The percentage of nurses who evaluated this program as "useful" or "very useful" was about 80%. This result suggested that the five-hour workshop has a beneficial effect on nurse-reported practice, attitudes, and confidence in providing care for terminally ill cancer patients feeling meaninglessness. Lack of a control group in the pilot study, however, limited the determination of the effects of the intervention as compared with conventional care.

The primary aim of this randomized controlled trial was thus to determine the effects of an educational workshop focusing on patient meaninglessness on nurses' confidence, self-reported practice, and attitudes toward

caring for such patients, in addition to nurses' burnout and meaning of life.

Methods

This study was designed as a randomized controlled trial using a waiting list control (Fig. 1). The nurses were recruited from a single general hospital. A total of 41 nurses were randomly allocated to three groups, using the envelope method. One participant (Group 3) withdrew from the study before the baseline evaluation, but we tried no supplementary recruitment because of adequate sample size. The remaining 40 nurses completed the study. We evaluated the nurses four times at three-month intervals (before intervention, between each intervention, and after the last intervention).

The Institutional Review Board approved the scientific and ethical validity of this study, and the nurses gave written consent.

Subjects

The nurses were all female and had a mean age of 31 ± 6.4 years (median, 29; range, 21–47), and mean clinical experience of

8.9 ± 5.5 years (median, 8.0; range, 1 to 22). Eleven nurses worked in the palliative care unit. All nurses were general practice nurses, including those working in palliative care units (none of the nurses had formal certification in palliative care, such as clinical nurse specialists). There were no significant differences in the participants' backgrounds among the groups (Table 1).

Interventions

The workshop was principally based on Murata and Morita's conceptual framework, and specifically focused on the care of terminally ill cancer patients feeling meaninglessness.⁷ The intervention was the same throughout the study periods. The second author (H. M.) provided all lectures.

The workshop consisted of eight sessions over four months, and each session took 180 minutes. Table 2 summarizes the program contents. In the first three introductory sessions, participants were educated about basic communication skills through lectures and exercises. In the exercise section, each participant was requested to report short, typically 20 to 30 sentences, verbatim records of their actual

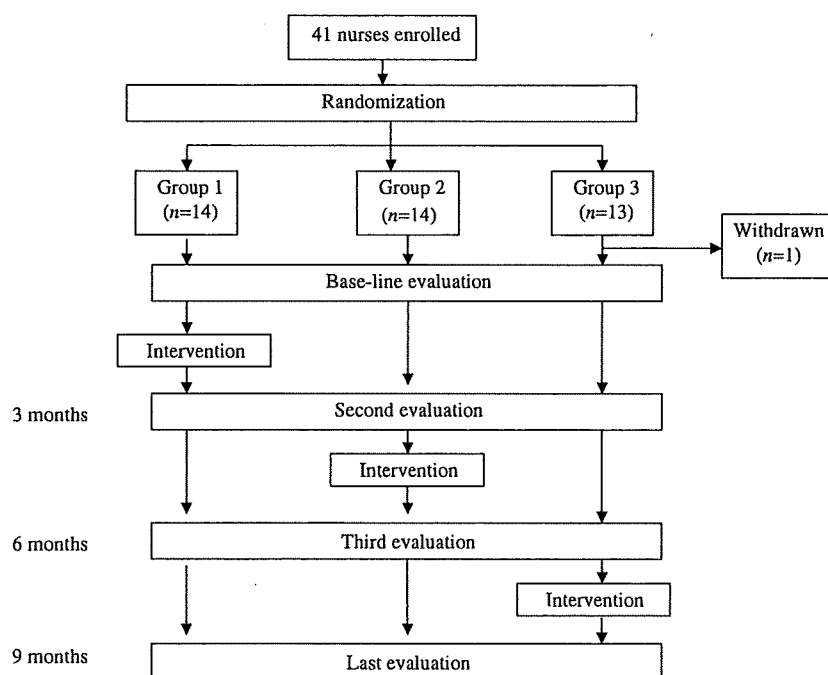


Fig. 1. Study protocol.

Table 1
Participants' Backgrounds

	Group 1 (n = 14)	Group 2 (n = 14)	Group 3 (n = 13)	P
Age, years (mean ± SD)	31 ± 5.2	32 ± 8.5	31 ± 5.3	0.94
Clinical experience, years (mean ± SD)	8.1 ± 3.7	9.8 ± 7.1	8.6 ± 5.3	0.73
Working in the palliative care unit, n (%)	3 (21)	4 (29)	4 (31)	0.77

experiences in their routine practice, and received face-to-face feedback based on group discussion about appropriate listening skills.

In the following two sessions, participants were educated about the conceptual framework of meaninglessness used in this practice, and how to use the Spiritual Conference Summary Sheet. In the last three sessions, participants were requested to complete the Spiritual Conference Summary Sheet for actual patients: to identify which of the patient's statements are expressions of meaninglessness from the verbatim record as the origin of the patient's meaninglessness (temporality, relationships, or autonomy), and to establish a care plan to alleviate the patient's sense of

Table 2
Program Contents

Session	Contents
1	Lecture (overview and what is "helping others?") (90 minutes) Exercise: read and discuss three verbatim case records (90 minutes)
2	Lecture (sympathy and active listening) (90 minutes) Exercise: read and discuss three verbatim case records (90 minutes)
3	Lecture (communication) (90 minutes) Exercise: read and discuss three verbatim case records (90 minutes)
4	Lecture (conceptual framework of meaninglessness) (90 minutes) Exercise: read and discuss three verbatim case records (90 minutes)
5	Lecture (how to use the Spiritual Conference Summary Sheet) (90 minutes) Exercise: read and discuss three verbatim case records (90 minutes)
6	Exercise: case discussion based on four Spiritual Conference Summary Sheets (180 minutes)
7	Exercise: case discussion based on four Spiritual Conference Summary Sheets (180 minutes)
8	Exercise: case discussion based on four Spiritual Conference Summary Sheets (180 minutes)

meaninglessness in daily nursing practice by strengthening the factors supporting meaning and alleviating the factors causing meaninglessness. In these sessions, four Spiritual Conference Summary Sheets were discussed under supervision from the second author, and all participants received additional individual, written feedback.

Assessment and care planning based on the Spiritual Conference Summary Sheet is an essential part of this intervention. The Spiritual Conference Summary Sheet (Fig. 2) was designed to respectively assess the source of meaning for each patient (i.e., temporality, relationships, or autonomy) from patients' actual dialogue.

Measurement Instruments

We adopted the Confidence and Self-Reported Practice scales, and the Attitudes toward Caring for Patients Feeling Meaningless Scale (willingness to help, positive appraisal, and helplessness) as primary end points for this study. The rationale and scale development process were described in detail in our previous article.¹⁷ In addition, we measured the levels of burnout (Maslach Burnout Scale^{18,19}) and the nurses' own spiritual well-being (Functional Assessment of Chronic Illness Therapy-Spiritual [FACIT-SP]^{20,21}) as secondary end points.

Confidence. Confidence in caring for terminally ill cancer patients with meaninglessness was evaluated on a single Likert-type scale from 1: "not confident at all" to 7: "very confident" for the question "With what degree of confidence can you communicate with terminally ill cancer patients saying, 'I can see no meaning in life?'"¹⁷

Self-Reported Practice Scale. The Self-Reported Practice Scale quantifies the level of self-reported adherence to recommended clinical practice in helping terminally ill patients to find meaning in their lives.¹⁷ Self-reported practice was evaluated by the level of adherence to six recommended practice statements on a Likert-type scale from 1: "not do at all" to 5: "always": "I try to know what makes the patient's life meaningful," "I try to know what strengthens or weakens the meaning of life for the patient," "I try to know how the

<p>Patient: 75-year-old male Advanced prostate cancer, in bed nearly all day due to lower limb paralysis. Lost wife 5 years ago. No children.</p>	<p>Patient dialog</p>	<p>Circumstances: I visited Mr. A during a round of the Palliative Care Team. According to a ward nurse, he had undergone painful and distressing tests the day before and was depressed, saying, "I'm finished. There is no sense in living." Mr. A was supine in the bed on the hall side of a 3-bed room. I sat on a chair beside his bed.</p>
<p>Dimension</p>	<p>P4(underlined)</p>	<p>Assessment Care plan</p>
<p>Relationships</p>	<p>P5(underlined)</p>	<p>Listen to Mr. A's reflections on his life and encourage him to talk to strengthen the meaning from his relationships with family and relatives. Continue to listen attentively to maintain a relationship with others.</p>
<p>Temporality</p>	<p>"I'm finished. There is no sense in living."</p>	<p>Encourage him to reflect on his past life, to regain the meaning supported by his past and relationships, not by the future.</p>
<p>Autonomy</p>	<p>Mr. A reflected on his past and gave a positive meaning to his bitter experience, whereby his feelings changed from repentance to gratefulness and reconciliation. Mr. A felt supported by someone listening to him.</p>	<p>Encourage reflections on life to divert their patients' value from dependency to the meaningful past.</p>
<p>Assessment and Planning</p>	<p>Mr. A feels his treatment to be ineffective and suffers from feelings of having no future, and dependence cause meaningless from temporality and autonomy. However, he could reflect on his past of meaningful relationships. The care plan therefore would be to continue listening carefully to his reflections on life to increase the meaningfulness of his past experiences and relationships, rather than the future and physical autonomy.</p>	<p>Encourage reflections on life to divert their patients' value from dependency to the meaningful past.</p>

Verbatim record N: nurse P: patient

N1: How are you, Mr. A?
P1: ... at night. I get up in the middle of the night, and I can't help thinking of one thing after another.
N2: You think of many things?
P2: Yeah. (After being silent for a while) You visit other patients and listen to them, too?
N3: Yes, there are others, too.
P3: I guess it's pretty hard for a mother with small children. (Silent for a while)...
N4: (Waiting)
P4: I lost my mother, too, when I was 6. She was 36. Then, I was taken care of by a stepmother, but it was difficult to get used to her. We were never on good terms. (Weeps) I was raised by 3 mothers: My own mother, nurse, and stepmother. But, when my father died, I said at his funeral, "I was brought up by 3 mothers, and this was my greatest fortune," showing my thanks to relatives. That was good, because everyone thanked me for saying it. (Weeps)
N5: At your father's funeral, you said you were very lucky to have been brought up by 3 mothers and thanked your relatives? And you felt good, because it made everybody grateful?
P5: Yes. (Weeps) (Looking straight at me) I thank you for coming today. I really do. You are coming again to listen to me? It makes me feel relieved.
N6: Yes, I am. I am looking forward to listening to you again. (Leaves the room)

Fig. 2. Spiritual Conference Summary Sheet.

patient's life is supported," "I try to know what meaning the disease has for the patient," "I try to understand the patient's wishes," and "I try to know what is important to the patient." We defined the scale score as the mean of the total score of the responses, and thus the score ranged from 1 to 5, with a higher score indicating a higher level of performance of recommended practices. Reliability was high, and convergent validity was examined by moderate correlation with self-reported practice about general communication.¹⁷

Attitudes Toward Caring for Patients Feeling Meaningless: Willingness to Help, Positive Appraisal, and Helplessness. Willingness to help, positive appraisal, and helplessness quantify the degree of willingness to make an effort to help patients feeling meaninglessness, nurses' positive appraisal of their experience of encountering patients feeling meaninglessness, and nurses' perception of helplessness when facing patients feeling meaninglessness, respectively. These were evaluated by levels of agreement with several statements on a Likert-type scale from 1: "never" to 7: "very much." The instructions specifically presented a situation in which the nurse faced a terminally ill cancer patient suffering from meaninglessness. The item questions were: "I feel willing to do something to relieve the patient's suffering," "I think how I can support the patient effectively," and "I wish to relieve the patient's suffering as much as possible" (willingness to help; three items, range = 1–3); "I feel grateful that the patient has told me," and "I feel that the patient trusts me" (positive appraisal; two items, range = 1–3); "I feel helplessness," "I feel like escaping," and "I feel willing to be involved (reversed item)" (helplessness; three items, range = 1–3), respectively. Higher scores indicated higher levels of nurses' willingness to help, positive appraisal of their experience, and perception of helplessness, respectively. Reliability was high, construct validity was confirmed using confirmatory factor analysis, and convergent validity was examined by moderate correlation with the Frommelt Scale.^{17,22,23}

Burnout. Professional burnout was measured using the Maslach Burnout Inventory,^{18,19} which measures three components of burnout syndrome: emotional exhaustion, depersonalization,

and lack of personal accomplishment, in addition to overall levels of burnout (visual analog scale, range = 0–100).¹⁸ The psychometric properties of the Japanese version have been confirmed.¹⁹ In addition, job satisfaction was measured on a 0–10 rating scale following the previous study.¹⁴

Spiritual Well-Being. Nurses' own spiritual well-being was measured using the FACIT-SP.^{20,21} The psychometric property of the Japanese version has been confirmed.²¹

Overall Evaluation. Finally, we asked the respondents to rate their overall evaluation about the usefulness of this program in terms of: 1) understanding the conceptual framework in caring for terminally ill patients feeling meaninglessness; 2) helping in self-disclosing nurses' personal beliefs, values, and life goals; and 3) helping in learning how to provide care for patients feeling meaninglessness in clinical practice.¹⁷ We used the second question, given the possibility that nurses' own spirituality might change through this educational session about patient suffering,¹⁷ although the intervention itself did not deal with nurses' own spirituality. The choices were "not useful," "slightly not useful," "slightly useful," "useful," and "very useful."

Statistical Analysis

We first compared participants' backgrounds (age, clinical experience, and working setting) among groups by analysis of variance or Chi-square test, as appropriate. We then calculated the change ratio of each score from the mean value of each score at the baseline and just after intervention for all end points. Finally, we tested the statistical significance of treatment effect using the mixed effect model for all end points. In all analyses, the significance level was set at $P < 0.05$ and a two-sided test was used. All analyses were conducted using statistical package SAS (SAS Institute, Cary, NC).

Results

Primary End Points

As shown in Fig. 3, the intervention effects were statistically significant for all primary end points: Confidence and Self-Reported Practice scales, and Attitudes toward Caring for Patients

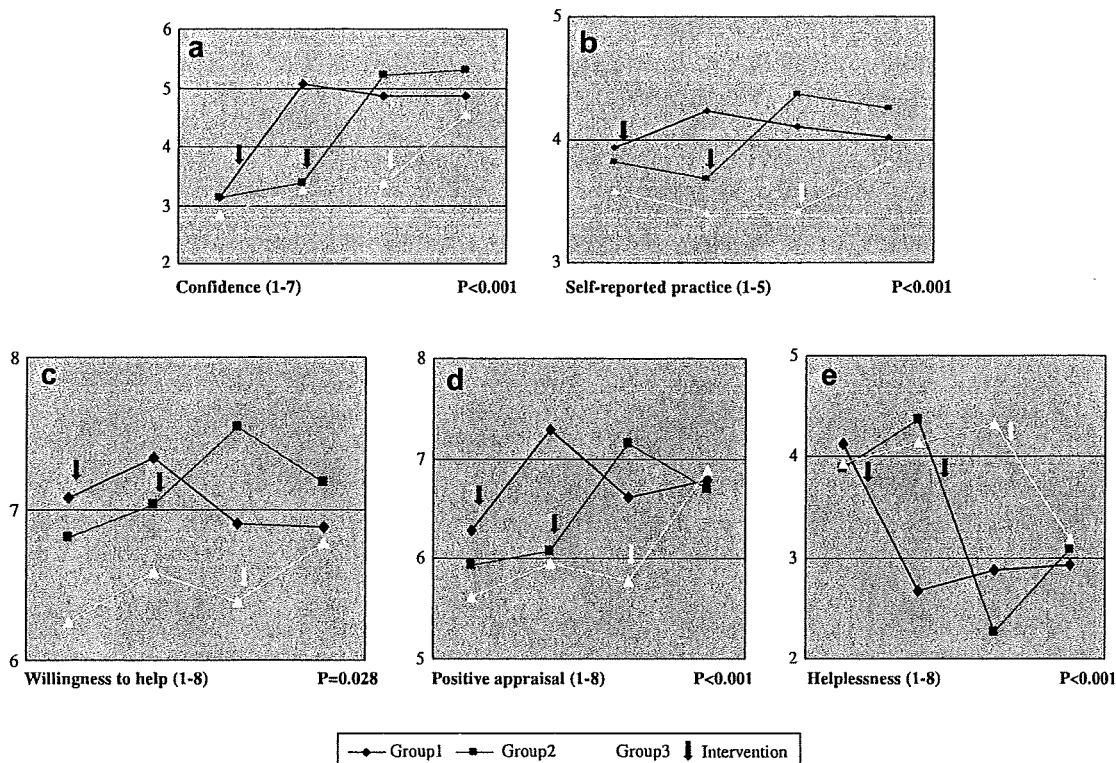


Fig. 3. Primary end points.

Feeling Meaningless (willingness to help, positive appraisal, and helplessness). The changes in these primary end points were: 5.6% (willingness to help), 12% (self-reported practice), 18% (positive appraisal), 37% (helplessness), and 51% (Confidence Scale) (Table 3).

Secondary End Points

As shown in Fig. 4, the intervention effects were statistically significant for the overall levels of burnout, emotional exhaustion, personal accomplishment, job satisfaction, and nurses' own spiritual well-being. The changes in these parameters were: 12% (emotional exhaustion) 13% (personal accomplishment), 15% (depersonalization), 21% (overall burnout, job satisfaction), and 23% (spiritual well-being) (Table 3).

Overall Evaluation

The percentages of nurses who evaluated this program as "useful" or "very useful" were 85% (to understand the conceptual framework in caring for terminally ill patients feeling meaninglessness), 80% (to help in self-disclosing nurses' personal beliefs, values, and life goals),

and 88% (to help in learning how to provide care for patients feeling meaninglessness).

Discussion

The most important finding of this study is a significant and clear beneficial effect of an educational intervention focusing on patient

Table 3
Changes in Primary and Secondary End Points

	Before	After	Change (%)
Confidence (1-7)	3.29	4.97	51
Self-Reported Practice score (1-5)	3.70	4.16	12
Attitudes toward caring for patients feeling meaningless			
Willingness to help (1-8)	6.85	7.24	5.6
Positive appraisal (1-8)	6.06	7.12	18
Helplessness (1-8)	4.27	2.68	-37
Maslach Burnout Inventory			
Overall burnout (0-100)	66.1	52.1	-21
Emotional exhaustion (1-7)	4.11	3.62	-12
Personal accomplishment (1-7)	4.16	4.70	13
Depersonalization (1-7)	1.96	1.67	-15
Job satisfaction (0-10)	5.65	6.84	21
Spiritual well-being (FACIT-Sp, 0-4)	2.15	2.65	23

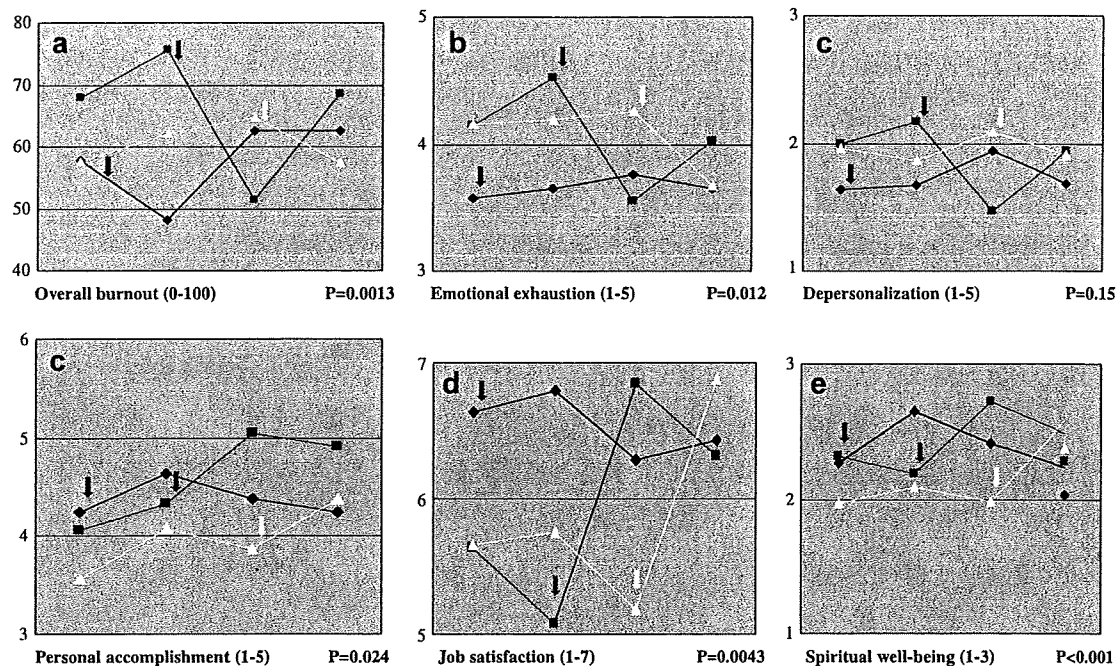


Fig. 4. Secondary end points.

meaninglessness on nurses' confidence, nurse-reported practice, and attitudes in providing care for such patients. This finding confirms our preliminary study that the intervention could provide considerable benefits for confidence, nurse-reported practice, and attitudes. Of note was the great change in nurses' confidence (51%) and helplessness (37%), in addition to the high evaluation of the overall usefulness of the workshop in learning how to provide care in clinical practice compared with a previous study (80% vs. 34%).¹⁵ This result strongly suggests that this educational program can provide nurses with clinically useful specific strategies for caring for patients feeling meaninglessness.

From the fact that the change rate of willingness to help was much smaller than other variables, it could be interpreted that the participating nurses had voluntarily participated in this program and had higher motivation to help such patients. As for nurse-reported burnout, job satisfaction, and spiritual well-being, our preliminary study failed to demonstrate beneficial effects,¹⁷ but the present study, in addition to Wasner et al.'s pioneer work, showed positive results.¹⁴ This discrepancy could be explained by the intensity of

the intervention: our preliminary work was only a five-hour workshop, whereas the two positive studies consisted of at least three months of continuing education. The greater difference in the scores in the present study vs. Wasner et al.'s study could indicate that our intervention has a stronger role in preventing nurses' burnout: 21% vs. 6.6% (overall burnout), 21% vs. 9.7% (job satisfaction), and 23% vs. 7.8% (spiritual well-being on the FACIT-Sp) 14. From the fact that intervention effects on burnout items in Group 1 were relatively lower compared with Groups 2 and 3, it could be interpreted that the instructor became more skillful in preventing nurses' burnout through the study periods.

A concern about this intervention is the possibility that the intervention effect may not be maintained, because some variables returned to the baseline levels after six to nine months. The finding suggests that this intervention may require periodic exposure or "maintenance therapy," and this should be a main focus of future research.

This study has several limitations. First, as this study measured nurse-reported outcomes, a future study should examine patient outcomes and/or observer-rating behavior of nurses.