

activity guide as well as a method to evaluate palliative care consultation teams. J Pain Symptom Manage 2009;38:496–504. © 2009 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Palliative care, palliative care consultation team, standard, modified Delphi method, cancer

Introduction

There is increasing awareness of the suffering of patients with pain, other physical symptoms, and psychosocial distress.^{1,2} As a result, specialized palliative care services have proliferated worldwide.^{3–6} In Japan, the Ministry of Health, Labour, and Welfare has strongly supported the dissemination of specialized palliative care as a part of the National Cancer Program. Since National Medical Insurance started to cover inpatient palliative care units (PCUs) for terminal cancer patients in 1990, PCUs have been a dominant palliative care service. However, more than 90% of cancer deaths occur in general wards,⁷ and it has been reported that the care of cancer patients is inadequate.^{8–10} With the consideration of this situation, palliative care consultation services have been covered by National Medical Insurance since 2002, and it became mandatory for Regional Cancer Centers to establish palliative care consultation teams. The number of Regional Cancer Centers is now 351.¹¹

In this way, palliative care consultation teams are being rapidly disseminated as a result of government policy. However, the role of such teams has not been standardized. The government released only six statements regarding the entity of the palliative care consultation team:¹² 1) a palliative care consultation team should include a palliative care physician and nurse and provide specialized palliative care for cancer patients; 2) specialized palliative care can be provided at outpatient clinics; 3) the palliative care consultation team holds care meetings to discuss patient symptom management at least once a week; 4) sufficient information is provided to cancer patients; 5) the attending physician, nurses, and the palliative care consultation team provide patients with information and education regarding palliative care before discharge, collaborating with their home care doctor; and 6) a palliative

care network with other hospitals and home care agencies in the same region is established. Although a standard for palliative care developed by Hospice Palliative Care Japan exists,¹³ it originally targeted the activity of PCUs and it is not detailed enough for new palliative care consultation teams to understand what they should do.

In Western countries, where palliative care consultation teams were developed from the early 1990s, palliative care standards comprising a wide range of palliative care services have been proposed.^{14–17} However, it is inappropriate to apply them directly to Japan because of a different social background and health care system. Thus, Japan needs its own standard specific to palliative care consultation teams.

“Consultation” has been practiced in Japan, and the general style is for consultants to play a more direct role in referrals. Palliative care consultation, in contrast, remains the primary responsibility of the referring team, which provides advice and gives recommendations.¹⁸ Moreover, emotional and educational support for the referring team is also an important role of the palliative care consultation team, in addition to the addressing of patients' problems.^{19,20} Therefore, consultation by a palliative care team crucially differs from conventional consultation. For a new palliative care consultation team to function effectively and smoothly, we need to provide guidance, including the concrete step of consultation. The aim of this study was to develop a hospital-based palliative care consultation team standard.

Methods

We adopted a modified Delphi method²¹ to develop a palliative care consultation team standard.

Development of a Provisional Standard

To develop a provisional standard, we adopted the following procedures: First, the authors discussed the basic assumption of this standard and decided that it should be a fundamental standard, designed to show new palliative care consultation teams what to do at the very least. The subject was cancer patients because palliative care in Japan mostly targets such patients presently, and we have insufficient clinical experience of palliative care for non-cancer patients. The concept of the Donabedian model was applied because this standard was expected to be used for evaluation as well, and the framework of the standard was referred to existing standards and manuals on palliative care.^{13-15,17,22} Second, one author (T. S.) generated statements in line with the framework based on a literature review.^{6,13-15,17,22-29} Third, the authors discussed the appropriateness and coverage of the statements to reach a consensus regarding validity and then the provisional standard was formulated, consisting of four domains and 33 statements.

Expert Panel Selection

As there are no universally accepted criteria for the selection of experts using this method,³⁰ we selected expert panelists to create a multiprofessional panel based on the following criteria: 1) clinicians with adequate experience as part of a palliative care consultation team and 2) representatives of palliative care-related organizations.

Criterion 1. From the palliative care consultation team registration data of the Japanese Society for Palliative Medicine (December 2006) and the 2007 annual conference data of Hospice Palliative Care Japan, palliative care consultation teams that started their activity before April 2005 and received more than 80 referred patients per year were selected. Next, we contacted clinicians whose experience as part of a palliative care consultation team spanned over at least two years, and authors agreed that their activity levels were high within the palliative care consultation teams. One group of panelists comprised five physicians, two psychiatrists, and five nurses, showing diversity regarding hospital types

(cancer center, university hospital, and general hospital).

Criterion 2. We contacted 16 palliative care-related organizations (Table 1) by mail and asked them to participate in this study and recommend a panelist. As a condition to be a panelist, we proposed an extensive knowledge of palliative care and work experience within/with palliative care consultation teams. The total number of panelists was 27 experts (one panelist was recommended by two organizations).

Data Collection and Analysis

First, each panelist was asked to review 28 related reports.^{6,19,24,26-29,31-51} The reason why we asked the panelists to review these was to standardize their knowledge regarding the roles and activities of palliative care consultation teams, as such teams are relatively new in Japan, before study commencement.

Second, two months later, we implemented a first-round survey, mailing a questionnaire with the outline of a provisional standard to each panelist. Each member was asked to rate the appropriateness of each statement using a nine-point Likert-type scale (inappropriate 1-3, intermediate 4-6, and appropriate 7-9). In cases where panelists were unfamiliar with items due to their specialty, "incapable of rating" was also prepared. Panelists who rated a statement as less than 6 were asked to give the reason. We set two criteria for agreement:

Table 1
List of Palliative Care-Related Organizations Participating in This Study

Japanese Society for Palliative Medicine
Japan Psycho-Oncology Society
Japan Society of Clinical Oncology
Japanese Society of Medical Oncology
Japan Society of Pain Clinicians
Japanese Society for Therapeutic Radiology and Oncology
Japanese Society of Cancer Nursing
Japanese Nursing Association
Hospice Palliative Care Japan
Japanese Society for Pharmaceutical Palliative Care and Sciences
Japanese Society of Pharmaceutical Health Care and Sciences
Japanese Association of Social Workers in Health Services
The Japanese Psychological Association
The Association of Japanese Clinical Psychology
The Japanese Physical Therapy Association
Japanese Association of Occupational Therapists

the median value was 8 or more, and the difference between the minimum and maximum was 4 or less. A summary of the first-round survey was sent to each panelist and author, and disagreements were discussed by e-mail for two weeks. We asked the panelists, especially those who would not be able to attend a panel meeting, to give their opinions.

Third, after discussion by e-mail, an expert panel meeting was convened on January 19, 2008, in Tokyo to discuss statements causing disagreement face-to-face. At the meeting, a summary of the first-round survey and discussion through e-mail was distributed. After the panel meeting, a summary of the meeting and a revised version of the standard were sent to all panelists to confirm corrections or determine whether there were additional opinions.

Fourth, we implemented a second-round survey using the same method as in the first-round survey, and a revised version of the standard based on the expert panel meeting. For statements considered inappropriate, the relevant panelists were contacted by e-mail individually and we tried to reach a compromise.

This study was conducted from April 2007 to March 2008. The protocol was approved by the Institutional Review Board of the Graduate School of Comprehensive Human Sciences, University of Tsukuba. All statistical analyses were carried out using the statistical package SAS version 9.1 (SAS Institute, Inc., Cary, NC).

Results

The backgrounds of the panelists are summarized in Table 2. Of the 27 panelists, 25 had experience working as a member of a palliative care consultation team and the mean working period was 5.3 years.

All panelists responded to the first-round survey, and 17 (63%) participated in the panel meeting. In the first-round survey, 15 of 33 statements led to disagreements. We analyzed the reasons for the 15 disagreements and found that the minimum goal of a palliative care consultation team differs among the members, and the range of palliative care consultation team activities is not clear, whether for hospital inpatients or for the community. During the discussions by e-mail and in the panel meeting, the following were agreed: 1)

Table 2
Background of Panelists (n = 27)

Sex	
Male	15
Female	12
Specialty	
Physician	11
Psychiatrist	3
Nurse	7
Psychologist	2
Pharmacologist	1
Medical social worker	1
Occupational therapist	1
Physical therapist	1
Years of clinical experience (mean \pm SD)	18.9 \pm 6.1
Experience in PCT activity, yes	25
Years of PCT activity, n = 25 (mean \pm SD)	5.3 \pm 3.1

SD = standard deviation; PCT = palliative care team.

the standard should be achieved within five years, taking into account the wide-ranging skills of teams, not the minimal or lowest acceptable practices; 2) this standard should be applied to cancer patients first and then expanded to other diseases in the future; and 3) this standard should focus on consultation activities within a hospital.

According to the results of the first-round survey and discussion at the panel meeting, the 15 statements that produced disagreement were dealt with as follows: one was rejected, one was combined with another statement, three were unmodified on clarifying the basic assumption, and 10 underwent minor revision. Moreover, two other statements were divided into two statements each for explicitness. Consequently, the statements numbered 37.

In the second-round survey, all panelists responded. As a result, three of 37 statements produced disagreements. As disagreement was expressed by only one panelist for each statement and seems to have occurred from a misunderstanding of the statements, we contacted the panelists and gave more precise explanations. Subsequently, agreements were obtained from the panelists. For satisfactory statements that included some minor comments such as expressions, we revised them based on a discussion among authors. The final version of the standard is shown in the Appendix.

Discussion

We developed a palliative care consultation team standard using a modified Delphi

method and using a multiprofessional expert panel. The standard comprised 37 statements encompassing four areas: "philosophy and policy," "structure for care provision," "contents of activities," and "quality assurance and care improvements." It is important in terms of developing a standard to use a clear methodology. Furthermore, this standard would be of help to both new and existing palliative care consultation teams as a guideline. In addition, the activities of palliative care consultation teams could be evaluated based on this standard, which contributes to improvement in the quality of care.

In the first-round survey, 15 of 33 statements led to disagreement. This is a poor result compared with other studies using the Delphi method.^{52,53} The outcome suggests that what is viewed as the minimum of palliative care consultation team activities differs from person to person, as mentioned previously, and it might be difficult to achieve a common understanding of the role of palliative care consultation teams, not only for palliative care consultation team users^{54,55} but also for palliative care consultation team members themselves. The role of palliative care consultation teams became clearer using this standard. As a next step, we need to investigate to what extent the palliative care consultation team actually fulfills its role and how effective it is.

Given the lack of a clearly defined role, this standard was rather general. Common elements of palliative care, such as spiritual and bereavement care, were not included. Although spiritual and bereavement care have been acknowledged as essential elements in palliative care in Japan as well,¹³ it is difficult to actually provide these types of care as a part of daily practice in the acute setting^{20,56} and panelists might have believed that it would be difficult to achieve the goal within five years. Another possible reason would be that we tried to include the consultation steps in the standard, and thus, it made the standard a more general one that can be applied to any type of medical care.

Our study had several limitations. First, some statements were not precise enough because we intended the standard to be applied by both new and established palliative care consultation teams. Too precise a description would make it difficult for panelists to

reach an agreement. Second, panelists in this study consisted of diverse professionals, but the number of physicians was large. Thus, this standard might be biased to reflect physicians' opinions. Third, palliative care consultation teams cannot be directly evaluated with this standard. For actual evaluation, assessment criteria are needed. Fourth, the clinical effectiveness of this standard remains unclear, although it was developed by clinical experts.

In conclusion, we developed a palliative care consultation team standard consisting of 37 statements in four areas. Although this standard might not be precise, we believe that it is worthwhile in terms of developing a standard using a clear methodology. This standard is helpful both as a clinical activity guideline and as a method to evaluate palliative care consultation teams. As the next step, palliative care consultation team activities should be advanced with this standard, along with the development of criteria based on the standard, and the implementation of further evaluation.

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Appendix

Hospital-Based Palliative Care Consultation Team Standard

This standard was developed to define the goal of hospital-based palliative care consultation teams working in hospitals.

Palliative care is administered for all patients with life-threatening diseases. This standard has been devised mainly for palliative care consultation teams for cancer patients, as most patients receiving palliative care in Japan suffer from cancer. However, it can also be applied by palliative care consultation teams to non-cancer patients.

This standard only refers to the activities of the palliative care consultation team in a hospital and does not mention activities in the local community, for the following two reasons: 1) palliative care consultation in the local community is not common in Japan, and there are few authorities on this, although it is expected to become more common in the future, and 2) the activities of palliative care consultation teams in hospitals and local communities are markedly different; thus, it would be difficult to devise a standard covering both activities.

Definition of the Terms Used in This Standard

Palliative Care. An approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual (the World Health Organization definition).

Palliative Care Consultation. Support to enable health care professionals to efficiently deal with difficult issues regarding palliative care.

Direct Care. Medical intervention and care provided by a palliative care consultation team directly to patients and family.

Structure

I. Philosophy and Policy

1. Philosophy. Palliative care consultation teams educate and support health care professionals and provide direct care for patients and their families by providing clinical knowledge and skills to improve the quality of life of both parties.

2. Policy. The palliative care consultation team should:

- a. Consult with health care professionals working in hospitals.
- b. Provide direct care for patients and their families when necessary, after consensus with the referring health care professionals.
- c. Work according to the needs of the referring health care professionals as well as patients and their families.
- d. Have discussions with the referring health care professionals and decide on the care plan for patients and their families.

II. Structure for Care Provision

1. Occupational Structure. It is desirable for palliative care consultation teams to include the human resources mentioned below or for the teams to have access to such professionals whenever needed:

- a. Physician who is skilled in the palliation of physical symptoms.
- b. Physician who is skilled in the palliation of psychiatric symptoms.

- c. Nurse who is qualified as a certified nurse specialist/certified expert nurse in palliative care.
- d. Pharmacologist who is skilled in palliative care.
- e. A medical social worker.
- f. A psychotherapist.
- g. Health care professionals involved in rehabilitation (physical, occupational, speech therapists, etc.)
- h. A registered dietitian.
- i. Other professionals who contribute to improve patients' and their families' quality of life.

2. Structure of Activity. The palliative care consultation team should:

- a. Be clearly positioned within the organization of the hospital.
- b. Specify its philosophy and policy to the hospital.
- c. Inform health care professionals in the hospital, patients, and their families about the team framework (position in the hospital, members, working hours, and contents of activities).
- d. Inform health care professionals in the hospital of who has access to the team (staff who can request referral and the process involved).
- e. Establish a referral system that facilitates prompt action.

Process

III. Contents of Activities

1. Clinical Activities. The palliative care consultation team should:

- a. Provide patients with symptom management, emotional support, support for decision making, a place of care, and support for terminal problems, as well as support for the families and health care professionals.
- b. Carry out a comprehensive assessment of patients and their families based on information from referring staff, physical examinations of patients, discussions with the family, medical charts, and the results of other examinations and provide recommendations and direct care.
- c. Make an assessment using a standardized tool whenever possible.
- d. Provide recommendations and direct care based on existing clinical practice guidelines if possible, taking the individual situations/conditions of patients into consideration.
- e. Record the contents of assessments/recommendations and direct care on medical charts.
- f. Review and follow up the results of recommendations and direct care.
- g. Inform patients and their families about the contents of direct care and obtain consent.
- h. Hold conferences with the referring health care professionals if needed.
- i. Facilitate communication within the palliative care consultation team through regular meetings, etc.

2. Organizing Resources. The palliative care consultation team should:

- a. Allocate a palliative care link nurse to a ward or outpatient division as needed.
- b. Facilitate a guideline for palliative care in the hospital.
- c. Promote a cooperative relationship with facilities related to palliative care (e.g., palliative care units, clinics, home-visiting nursing stations, and pharmacies) in the local community.

3. Educational Activities. The palliative care consultation team should:

- a. Educate health care professionals in hospitals through their daily activities.
- b. Give regular lectures on palliative care to health care professionals.
- c. Provide regular study sessions and lectures to educate inpatients/outpatients and their families.

IV. Quality Assurance and Care Improvements

The palliative care consultation team should:

- a. Evaluate and improve activities by holding regular case reviews and conferences.
- b. Evaluate activities by collecting and analyzing information on the referred patients and activities of the team (e.g., diagnosis, the reason for referral, and number of referrals).
- c. Make maximum efforts to obtain up-to-date information on palliative care.

International comparison study on the primary concerns of terminally ill cancer patients in short-term life review interviews among Japanese, Koreans, and Americans

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ABSTRACT

Objective: The aim of this study was to investigate the primary concerns of terminally ill cancer patients in a Short-Term Life Review among Japanese, Koreans, and Americans to develop intervention programs to be tailored to patients in other countries.

Method: Twenty Japanese, 16 Korean, and 7 American terminally ill cancer patients who were in the hospice wards of general Christian hospitals in each country participated in this study. Medical staff members (nurses, social workers, clinical psychologists) performed Short-Term Life Review Interviews with each patient. Patients reviewed their lives in the first session, the interviewers made simple albums for each patient in the week following the first session, and patients and interviewers then confirmed the contents of the album. The treatment period was 1 week. Measurement instruments included the Functional Assessment Chronic Illness Therapy–Spiritual (FACIT-Sp) and the Hospital Anxiety and Depression Scale (HADS). The contents of each interview session were transcribed, and correspondence analysis and a significance test were conducted on these data to select characteristic words or phrases.

Results: Using the FACIT-Sp scores, the following concerns were chosen, in descending order of frequency. In Japan, primary concerns consisted of such ideas as “good human relationships and transcendence,” “achievements and satisfaction,” “good memories and important things,” and “bitter memories.” In Korea, “religious life,” “right behavior for living,” “strong consideration for children and will,” and “life for living” were primary concerns. In the United States, “love, pride, will to children,” “good, sweet memories,” and “regret and a feeling of loss” were primary concerns.

Significance of results: We clarify the differences among the primary concerns from the Short-Term Life Reviews, arguing that we can improve the spiritual well-being of terminally ill cancer patients by focusing on the primary concerns within each country.

KEYWORDS: International comparison, Psychotherapy, Short-Term Life Review, Terminally ill patients, Spiritual well-being

INTRODUCTION

Palliating psycho-existential suffering in terminally ill cancer patients is of great importance because such suffering is not uncommon and is related to

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the quality of life, good death, and depression (Nelson et al., 2002), as well as a desire for hastened death, hopelessness, and suicidal ideation (McClain et al., 2003). Many recent studies have explored effective strategies for alleviating psycho-existential suffering in patients, with particular attention to dignity, meaning, and demoralization (Kissane et al., 2003; Breitbart et al., 2004; Chochinov et al., 2005). Dignity therapy (Chochinov et al., 2005) is a feasible and promising technique for alleviating psycho-existential suffering among terminally ill cancer patients, but it is not clear whether this therapy is feasible for patients of different cultures.

One promising therapy for alleviating psycho-existential suffering is reminiscence therapy. We refer to reminiscence therapy that is performed individually, includes evaluative discussion, and focuses on both positive and negative memories as a "life review." In our previous study, we performed standard life review interviews consisting of at least four sessions each. We demonstrated that these sessions had a positive effect on the patients' spiritual well-being, as measured by the Modified Skalen zur Erfassung von Lebensqualität bei Tumorkranken (SELT-M; Wegberg et al., 1998), but about 30% of the enrolled patients did not complete the sessions due to rapid physical deterioration (Ando et al., 2007b). We have thus developed a novel psychotherapy, the Short-Term Life Review (Ando et al., 2008), composed of two sessions over a single week, and have explored the feasibility and efficacy of this technique using the "pre-post" study design. Over the course of this study, sense of meaning, as measured by the Functional Assessment of Chronic Illness Therapy-Spiritual (FACIT-Sp), improved significantly. In this program, we chose question items by referring to the contents of the standard structured life reviews or the study of autobiographies. However, because the primary concerns of the patients in other countries were unknown, the interviewers were unable to focus on the patients' primary concerns in order to enhance the review of their memories. We thus need to know the primary concerns of terminally ill cancer patients in order to conduct effective life review interviews.

Dignity Therapy, proposed in Canada, is feasible and promising with regard to the alleviation of psycho-existential suffering among terminally ill cancer patients. The purpose of Dignity Therapy is to maintain or improve the dignity of terminally ill cancer patients by preserving a will or words for important people, thereby establishing a legacy for each patient. However, it is not clear that this concept of legacy is well suited to Japanese patients.

To improve the Short-Term Life Review Interview, improving its ability to enhance the spiritual well-being

of patients in other cultures, we intend to clarify the primary concerns in Japan, Korea, and the United States through comparison of the results of life reviews conducted in these three countries. We selected Korea because, although it is a close neighbor of Japan, its people seem to have many differences in their religious beliefs and ways of thinking. We chose the United States as a representative of Western cultures.

METHOD

Patients

In Japan, 20 terminally ill cancer patients in two hospice wards participated in the present study. In Korea, 16 terminally ill cancer patients in three hospice wards participated, and in America, 7 terminally ill cancer patients in two hospice wards participated. The inclusion criteria for this study were (1) the patient had cancer, (2) the patient had no cognitive impairment, and (3) the patient was 20 years of age or older. Table 1 shows the basic demographic data.

Outcome Measurements

We refer to the sense of meaning as measured by the FACIT-Sp (Peterman et al., 2002; Noguchi et al., 2004) in this study. The FACIT-Sp consists of two domains, meaning of life and religious matters, and we used only the former, which contains about eight items each measured on a five-points scale (range 0-4). Total FACIT-Sp scores ranged from 0 to 32. High scores indicate an elevated sense of life meaning or a peaceful state of mind. To measure levels of anxiety and depression, we used the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983; Kugaya et al., 1998). HADS scores ranged from 0 to 42.

Table 1. *The background of the participants*

	Japanese	Korean	American
Age	71.1 ± 9.8	58.7 ± 12.6	70.6 ± 12.4
Sex			
Male	5	10	4
Female	15	6	3
Total	20	16	7
Religion			
Christian	4	14	1
Buddhism	3	1	—
Other	13	1	—
Unknown	—	—	5
None	—	—	1

Procedure

The ethical aspect of this study was validated by both the ethical committee of St. Mary's Hospital and St. Mary's College. The Short-Term Life Review Interview consisted of two sessions. The duration of each interview session ranged from about 30 to 60 min., and 1 week elapsed between the first and second sessions. The following questions were asked in the first interview session: (1) "What is the most important thing in your life and why?" (2) "What are the most impressive memories in your life?" (3) "In your life, what was the event or person who affected you the most?" (4) "What is your most important role in your life?" (5) "What is the proudest moment of your life?" (6) "Is there anything about you that your family needs to know? Are there things you want to tell them, and, if possible, are there things you want them to remember?" and (7) "What advice or word of guidance do you wish to pass on to the important people in your life or to the younger generation?" Question Items 6 and 7 were included in order to enable a comparison of Chochinov et al.'s concept of legacy (2005).

The patients' narratives were recorded. After the first session, the interviews were transcribed verbatim and the interviewer then made a simple album. The album included key words from the answers to each question, and the interviewers pasted photos or drawings from various books or magazines related to the patients' words or phrases into the albums in order to make them more beautiful and memory provoking. In the second session, held a week after the first session, the patient and the interviewer viewed the albums together and confirmed their contents. The interviewer tried to get the patient to feel a continuity of self from past to present and a sense of satisfaction with his life. The therapy took a total of 1 week.

Medical staff members (clinical psychologists, medical social workers, and nurses) performed the Short-Term Life Reviews. Each session lasted about 60 min. Both pre- and postintervention, the patients completed oral questionnaires.

Analysis

We conducted a qualitative analysis in the present study and will report a quantitative analysis including HADS score on another occasion. For a qualitative analysis, text mining is used to extract specific information from a large amount of textual data. We used Word Miner (Japan Information Processing Service, 2003). For example, when a company requires information on their customers' opinions, questions such as "What are the major concerns?" or "Who wants what?" are asked in a questionnaire.

The responses are collected in the form of sentences, which are used as the raw data for text mining. In the first process of text mining, characteristic extraction was performed, that is, the words in each sentence were separated. Words that had the same meaning were counted as the same word, for example, both "mom" and "mother" were counted as "mother." Moreover, articles or punctuation marks were deleted, leaving only meaningful words. These words are called "fragments." Text mining elicited fragments that were then subjected to correspondence analysis for chosen effective characteristics. In the present study, we conducted correspondence analysis on fragments pertaining to FACIT-Sp scores. Significance tests to select significant (effective) fragments were conducted after correspondence analysis (Oosumi, 2006); the highest- and lowest-ranking fragments were subsequently chosen for each category. The selected fragments were shown in Tables 2-4.

RESULTS

In Japan, because the first concern included such fragments as "My family had good human relationships" and "I had good memories of my family," we have chosen to refer to it as "*Good human relationships and transcendence*." Because the second concern included "My proudest achievement is my work" and "I worked with faith," we refer to it as "*Achievements and satisfaction*." The third concern included such fragments as "My most impressive memory was a trip" and "The most important thing is friendship," so we refer to it as "*Good memories and important things*." Because the fourth concern included "We were isolated after World War II" and "I was disinfected using DDT medicine," we refer to it as "*Bitter memories*."

In Korea, we selected four concerns. The first concern included "The most important thing is religion" and "I want my family to have religion," so we refer to it as "*Religious life*." The second concern included "I want my family to live in harmony" and "I wanted to do good for others," so we refer to it as "*Right behavior for living*." Because the third concern included fragments such as "I can't live without my child" and "I wanted to have a baby for my child," we refer to it as "*Strong consideration for children and will*." The fourth concern included "I have lived independently" and "I had lived"; we thus refer to it as "*Life for living*."

In the United States, we selected three concerns. Because the first concern included "I loved everyone," "My proudest achievement is what I have done," "I want my children to be friendly," we refer to it as "*Love, pride, will*." The second concern included "I lived good life" and "I had a girlfriend in Korea,"

Table 2. Categories related to level of FACIT-Sp score and the significant word in the life review in Japan

Rank	Bitter memories (5–20)		Good memory and important things (20–25)		Achievement and satisfaction (25–30)		Good human relationships and transcendence (30–32)	
		Value		Value		Value		Value
1	I started a new business.	2.4	I worked abroad	2.1	My proudest achievement is my work.	2.6	My mother helped me with raising my children.	2.8
2	We were isolated after World War 2.	1.8	We were limited in our behaviors.	2.1	I worked enough.	2.2	My family had good human relationships	2.2
3	I was disinfected using DDT medicine.	1.8	The important thing is friendship.	2.1	A lecture in drawings taught me well.	1.7	I can not express my will.	2.2
4	Humans age rapidly.	1.8	I was not influenced by others.	1.6	I taught drawing with pleasure.	1.7	I am loved by someone.	2.2
5	I repatriated from Korea after World War 2.	1.8	A tour in Hokkaido	1.6	I worked with faith.	1.7	My role is to write poetry.	2.2
6	A person helped me after the war.	1.8	My most impressive memory is a trip.	1.3	I supported my grandchildren.	1.7	I spent pleasant times with everyone.	1.6
7	I changed my occupation after the war.	1.8	My most important role was to do my job.	1.1	The important thing is raising children.	1.7	I had good memories of my family.	1.6
8	My most impressive memory was encountering others.	1.8	I talked about what I tell to important persons.	1.1	Education is important for children.	1.7	I had memories of my mother in law.	1.6
9	I should have tried to start my own business.	1.8	The important thing is my family.	0.7	30 years	1.2	I want my family to go to church.	1.6
10	The ship came to a standstill in the sea.	1.8	My family comes to see me in the hospital.	0.7	I helped my family economically in my youth.	1.2	I evaluate memories in a positive way.	1.6

so we refer to it as “*Good, sweet memories.*” The third concern included “I can’t do anything” and “I regret,” and we refer to it as “*Regret and feelings of loss.*”

DISCUSSION

The first item of note emerging from this study is that the primary concerns elicited in the Short-Term Life Reviews differed by country, despite the fact that the patients all received the same questions. In Japan, “*Good human relationships and transcendence*” was the primary patient concern, with high FACIT-Sp scores. Because maintaining good human relationships with families or others is an important factor in the spiritual well-being of terminally ill Japanese cancer patients (Murata & Morita, 2006), facilitating a review of good family memories may improve their spiritual well-being. Additionally, Japanese patients

who believe in the existence of transcendent matter or things and who believe that transcendent matter controls their own destinies did not try to control their lives and had peace of mind. Moreover, when patients could recall some achievements in their lives, they expressed satisfaction with their lives. However, when they had bitter memories with effects lingering into the present, their levels of spiritual well-being were low.

“*Religious life*” was a primary concern among Korean patients. Most of the participants in the present study were Christians, and their relationships with God may be important to their lives. A related concept, “*Right behavior for living,*” was also an important factor. Patients who recalled kind gestures toward other people or doing good for others were satisfied with their lives. This concern may have a Confucian influence. Conversely, patients who

Table 3. Categories related to level of FACIT-Sp score and the significant word in the life review in Korea

Rank	Life for living (10–15)		Strong consideration for children and will (15–20)		Right behavior for living (20–25)		Religious life (25–30)	
		Value		Value		Value		Value
1	I have lived independently.	2.8	I can't live without my child.	2.4	I want my family to live in harmony.	2.2	The important thing is religion.	2.9
2	I have lived with my family.	2.3	I talked about how to manage money after my death.	1.7	The important thing is peace in the family.	2.2	There are no words to describe how I feel.	2.4
3	I want to volunteer, even now.	2.3	Why did I get cancer?	1.7	I fought in the Vietnam war and I had a good experience.	1.8	I had to live and do my best.	2.3
4	I bought clothes for my son, even though I had no money.	2.3	I want my family to be healthy.	1.7	I wanted to do well for others.	1.8	I want my family to have religion.	2.3
5	I had lived.	2.3	I want a baby for my child to have as a brother.	1.7	I did not envy others.	1.8	My brother and I have a good relationship.	2.3
6	I only thought about living.	2.3	My brother helped me.	1.7	The important thing is to behave correctly.	1.8	This was my first marriage.	2.3
7	I was alone in my youth.	1.8	I help anyone who is in trouble.	1.7	My role was to manage both my job and the housework.	1.8	I recommend religion to everyone.	2.3
8	I did not have enough money.	1.6	I want my family to live at the end of stage.	1.7	I did not express my desires.	1.8	I was shocked a long time ago, but I recovered.	1.7
9	I have lived like this.	1.6	My children are pretty.	1.7	The important things are my children.	1.4	I suffered, but I recovered.	1.7
10	I have lived in my way.	1.6	I will help a person who needs it.	1.7	The important thing is my health.	1.3	I was restructured, but I obtained a good job.	1.7

reviewed only severe past memories about living or meals that they could not evaluate positively or even in a balanced way showed low FACIT-Sp scores.

In America, "Love, pride, will to children" was the primary concern. Patients wanted to express their love and make their families understand that love. Moreover, patients who were proud of their achievements wanted to tell them to important persons. As for "Good, sweet memories," patients seemed to evaluate both positive and negative memories with acceptance. However, when they had strong feeling of regret or loss, their FACIT-Sp scores were low.

When we compare the primary concerns in the Short-Term Life Review related with spiritual well-being, "Love for the family" or "Good memories"

were common concerns for patients with high spiritual well-being in all three countries. Moreover, "Bitter memories," "Severe memories," or "Regret" were common concerns among patients with low spiritual well-being in all three countries. However, some characteristics were unique to specific countries. The concern for "humane family relationships" was important for Japanese people, which is supported by a previous study (Ando et al., 2007a). For Koreans, the "religious factor" was important. This is because it was associated with their mental health (George et al., 2002), and religious resources provide a sense of meaning and purpose (Jenkins & Pargament, 1995). "Pride or will" was particularly important for the American patients, which suggests that dignity

Table 4. Categories related to FACIT-Sp score levels and significant terminology from the life review in the United States

Rank	Regret and loss feeling (from 5 to less than 10)	Value	Good sweet memories (from 25 to less than 30)	Value	Love, pride, will to children (from 30 to less than 35)	Value
1	I pray to God.	3.1	I lived a good life.	2.3	I remembered good memories.	0.4
2	I can't do anything.	2.5	I loved sports.	1.7	I loved everyone.	0.4
3	I have regrets.	1.8	I had a girlfriend in Korea.	1.7	My proudest achievement is what I have done.	0.4
4	I lead a chaste life for my wife.	1.8	I married later in my life.	1.7	My most impressive memory is what I am experiencing now.	0.4
5	My role of raising children was over.	1.8	I have nothing to regret.	1.7	My most impressive memory is marriage.	0.4
6	My children became adults.	1.8	My children became adults.	1.7	I played sports when I was young.	0.4
7	I want my family to understand me.	1.8	I could not become what I wanted to be.	1.7	I want my children to be faithful to their hearts.	0.4
8	I want my family to be friendly.	1.8	The turning point for me was to enter college.	1.7	I want my children to be friendly.	0.4
9	Someday	0.9	I could walk a month ago.	0.8	The important thing is to love a person.	0.4
10	I have stopped smoking for 20 years.	0.9	I have stopped smoking for 20 years.	0.8	The important thing is the spirit of God.	0.4

or legacy may be important in Western cultures and that Dignity Therapy may be effective among these populations (Chochinov et al., 2005). Few Japanese patients mentioned their legacies for their children in the present study. Thus, we can now present a new variation on the Short-Term Life Review, one that is tailored to cultural differences (Table 5).

Although it is very difficult for different kinds of professional researchers to implement the same research protocols within the same limited time

periods, the first limitation of this research was the small number of participants from the United States. As a result of this fact, the range of FACIT-Sp scores among American participants was quite narrow, and we wonder if there are other concerns with ranking of FACIT-Sp scores. The second limitation of this study was the lack of a control group. However, despite these limitations, the present study seems very important in clarifying differences in the primary concerns through international comparison.

Table 5. A sample of program (question items) of the Short-Term Life Review that is tailored to each country

	For Japanese	For Korean	For American
Common	1. The most important thing 2. The most impressive memory 3. The turning point and influential event 4. The most important role 5. The most proudest achievement 6. What you want to make others know 7. What you want to tell to the important persons 8. The most representative word in your life	1. The most important thing 2. The most impressive memory 3. The turning point and influential event 4. The most important role 5. The most proudest achievement 6. What you want to make others know 7. What patients want to tell to the important persons 8. The most representative word in your life	1. The most important thing 2. The most impressive memory 3. The turning point and influential event 4. The most important role 5. The most proudest achievement 6. What you want to make others know 7. What patients want to tell to the important persons 8. The most representative word in your life
Characteristic	9. Human relationships with family 10. Achievements and satisfaction 11. Good memories with important persons	9. Religious life 10. Right behavior for living 11. Strong consideration for children and will	9. Love, pride, will to children 10. Good sweet memories

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The Efficacy of Mindfulness-Based Meditation Therapy on Anxiety, Depression, and Spirituality in Japanese Patients with Cancer

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Abstract

Objective: The primary goal of the study was to assess the efficacy of mindfulness-based meditation therapy on anxiety, depression, and spiritual well-being of Japanese patients undergoing anticancer treatment. A secondary goal was to assess the relationships among anxiety, depression, spiritual well-being, growth, appreciation, pain, and symptoms.

Methods: The subjects were 28 patients who were receiving anticancer treatment. The subjects participated in two sessions of mindfulness-based meditation therapy, including breathing, yoga movement and meditation. Each patient was taught the program in the first session, then exercised at home with a CD, and subsequently met the interviewer in a second session after 2 weeks. Primary physicians recruited the patients and interviews were conducted individually by nurses or psychologists with training in the program. Patients completed preintervention and postintervention questionnaires on anxiety and depression (Hospital Anxiety and Depression Scale [HADS]), spiritual well-being (Functional Assessment of Chronic Illness Therapy-Spiritual [FACIT-Sp]), and appreciation, growth, pain, and symptoms.

Results: HADS scores significantly decreased from 12 ± 5.3 to 8.6 ± 6.3 ($p = 0.004$) after the intervention, and FACIT-Sp increased from 32 ± 6.5 to 33 ± 6.9 ($p = 0.69$), but the change was not significant. There were significant associations between FACIT-Sp and HADS ($r = -0.78$, $p = 0.000$), FACIT-Sp and growth ($r = -0.35$, $p = 0.04$), FACIT-Sp and pain ($r = -0.41$, $p = 0.02$), and growth and appreciation ($r = 0.45$, $p = 0.009$).

Conclusions: Mindfulness-based meditation therapy may be effective for anxiety and depression in Japanese cancer patients, and spiritual well-being is related to anxiety and depression, growth, and pain. The negative correlation of spirituality with growth differs from the results of previous studies and the mechanism of this effect needs to be investigated further.

Introduction

PATIENTS WITH CANCER experience physical problems such as pain, fatigue and nausea, and psychological problems such as anxiety, depression, distress,¹⁻³ and spiritual pain. Spiritual well-being includes dimensions such as meaning, faith, purpose, and connection with others and with a higher power,⁴ and is thought to be one of the most important factors

in quality of life. Some patients with cancer experience and suffer from these problems, but many also find positive aspects in the experience. For example, after diagnosis patients may begin an internal search for awareness and a sense of meaning and purpose in life; that is, they experience a transition referred to as posttraumatic growth, stress-related growth, benefit finding, or positive change. For example, patients with breast cancer scored significantly higher for

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growth on the Post-Traumatic Growth (PTG) Inventory compared to a group of age- and education-matched controls, specifically in the area of relationships with others, spirituality and appreciation, and patients with high scores had increased skills, felt a sense of purpose, had closer relationships, better coping ability, increased spirituality, and an overall deeper appreciation of life.⁵

A mindfulness approach is an effective intervention from a psychological perspective. The Mindfulness-Based Stress Reduction (MBSR) program was modeled on the work of Kabat-Zinn and colleagues⁶ at the Center for Mindfulness-Massachusetts Medical Center. The program is based on the principal of mindfulness, defined as moment-to-moment, present-centered, purposive nonjudgmental awareness. The goal of the MBSR program is to guide participants to achieve greater awareness of themselves, their thoughts, and their bodies through class discussion, meditation, and yoga exercises. For patients with cancer, Speca et al.⁷ showed effects of the MBSR on mood disturbance using the Profile of Mood Scale (POMS) and stress symptoms using the Symptoms of Stress Intervention (SOSI), and Carson et al.⁸ showed an effect on quality of life based on the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) and the immune profile. Monti et al.⁹ showed that Mindfulness-Based Art-Therapy (MBAT), which includes mindfulness and art therapy, also produces a significant decrease in symptoms of distress and improvements in key aspects of health-related quality of life using the Short-Form Health Survey (SF-36). Garland et al.¹⁰ examined the effects on spirituality, stress symptoms, and mood of a Healing Art (HA) program compared with MBSR PTG. Improved growth, a relationship of PTG in MBSR with spirituality, and increases in spirituality with related decreases in stress and mood disturbance were found in participants in both groups.

Many studies from Western countries have shown the efficacy of MBSR on mood or symptoms, but few have been performed for Japanese patients. Therefore, it is unclear if MBSR is effective for moods such as anxiety or depression in Japanese cancer patients. Moreover, very few studies have investigated the effects of a mindfulness program on growth or spirituality. Thus, we investigated the efficacy of mindfulness on anxiety, depression, and spirituality in Japanese patients with cancer, and determined the associations among anxiety, depression, spiritual well-being, growth, and appreciation, in addition to physical symptoms.

Patients and Methods

Participants

The participants were outpatients who were receiving anticancer chemotherapy, radiation, or medication at a general hospital in Western Japan. The additional inclusion criteria were no cognitive impairment and age greater than 20 years old. Patients were excluded if they were experiencing severe pain or physical symptoms. These were rated using a numeric rating scale (0–10 points), and those with a score of above 8 were excluded from the study. A total of 28 patients (4 males, 24 females) with a mean age of 60.0 ± 9.2 years old participated in the study. The primary tumor sites were the breast ($n = 21$), colon ($n = 2$), stomach ($n = 2$), and bladder ($n = 2$). The performance status ranged from 0 to 2 and all patients were able to visit the hospital.

Outcome measures

The Japanese version of the Hospital Anxiety and Depression Scale (HADS)^{11,12} was used to measure levels of anxiety and depression. The HADS score ranges from 0 to 42. Following the model of our group, we chose the sense of meaning measured by the FACIT-Sp scale¹³ as the primary end point. The validity and reliability of the Japanese version of the FACIT-Sp is well established.¹⁴ The FACIT-Sp consists of two domains, meaning of life and religious issues, but we only used the meaning of life domain, which includes 8 items and is scored on a 4-point scale (range, 0–4). The total range of the FACIT-Sp is 0 to 32 and high scores indicate an elevated sense of meaning of life or a peaceful state of mind.

To measure psychological appreciation, we used several items from the Caregiving Consequence Inventory.¹⁵ This is a 12-item questionnaire with 4 core domains, of which we used "appreciation" only. Appreciation is determined from 2 items: "Having this disease made me more grateful for my family" and "Having this disease made me more grateful for other people." To measure psychological growth, we used 3 items from the Benefit Finding Scale¹⁶: "Having had cancer has made me more sensitive to family issues," "Having had cancer made me a more responsible person," and "Having had cancer has helped me to budget my time better," using a 7-point numeric rating scale. The α reliability coefficient of the 3 items was 0.71 in this sample. A high score indicates an elevated sense of life completion (range, 1–7). We also monitored the intensity of pain and physical symptoms such as constipation, nausea, fatigue, and sleep disturbance on a 10-point numeric rating scale (0–11).

Interventions and procedure

We used a modified version of the MBSR program,^{6,17} in which we refer to cyclic meditation as that including both breathing and meditation. During meditation, patients move

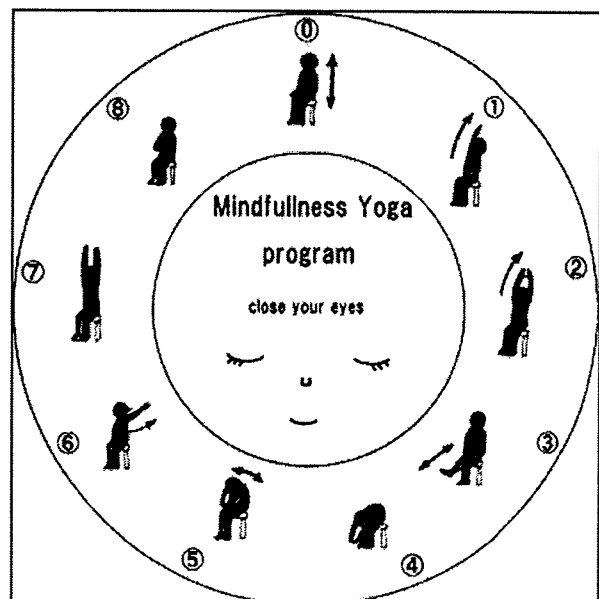


FIG. 1. The cyclic meditation program.

TABLE 1. MEAN SCORES FOR EACH QUESTIONNAIRE PRE- AND POSTINTERVENTION

	Preintervention	Postintervention	z	p value
FACIT-Sp	32.1 ± 6.5	33.0 ± 6.9	z = 0.40	p = 0.69
Anxiety	6.9 ± 3.6	5.1 ± 3.9	z = -2.52	p = 0.01
Depression	5.1 ± 2.9	3.5 ± 3.1	z = -2.60	p = 0.009
Total HADS	12 ± 5.3	8.6 ± 6.3	z = -2.89	p = 0.004
Growth	5.5 ± 1.1	5.7 ± 0.9	z = 1.54	p = 0.12
Appreciation	6.3 ± 1.0	6.2 ± 0.8	z = 0.87	p = 0.87
Pain	2.1 ± 2.3	2.4 ± 2.9	z = 0.77	p = 0.44
Symptom	3.2 ± 3.0	2.6 ± 3.2	z = 0.88	p = 0.38

FACIT = SP, Functional Assessment of Chronic Illness Therapy-Spiritual; HADS, Hospital Anxiety and Depression Scale.

their hands or legs to focus their attention (Fig. 1). The cyclic meditation program takes about 30 to 60 minutes per session and is conducted by nurses or a clinical psychologist who received training for at least 3 hours. The training included basic communication skills and yoga skills learned directly from a yoga specialist or using a CD or DVD. A primary physician recruited the patients and a clerk obtained informed consent and asked the patients to complete questionnaires preintervention and postintervention. In the pretherapy session, the patient learned the cyclic meditation program and it was recommended that they perform the therapy at home once per day. After 2 weeks, the patients met the interviewers in a second session to talk about their impressions.

Statistical analysis

A p value less than 0.05 was taken to indicate a significant level in all statistical analyses. All reported p values are two-tailed. The statistical procedures were conducted with SPSS 15.0 (Japanese version) for Windows (SPSS Inc., Chicago, IL, 2006). To evaluate the efficacy of mindfulness therapy on anxiety, depression and spirituality, a Wilcoxon sign rank test was conducted on the HADS and FACIT-Sp scores.

Results

Table 1 shows the scores for questionnaires pre- and post-intervention. Anxiety score of the HADS significantly decreased from 6.9 ± 3.6 to 5.1 ± 3.9 (p = 0.01) and Depression score of the HADS also significantly decreased from 5.1 ± 2.9 to 3.5 ± 3.1 (p = 0.009). Total HADS scores significantly de-

creased from 12 ± 5.3 to 8.6 ± 6.3 (p = 0.004) after the intervention, and FACIT-Sp scores increased from 32 ± 6.5 to 33 ± 6.9 (p = 0.69, not significant). Table 2 shows the results of correlation analyses. There were significant relationships between FACIT-Sp and HADS (r = -0.78, p = 0.000), FACIT-Sp and growth (r = -0.35, p = 0.04), FACIT-Sp and pain (r = -0.41, p = 0.02), and growth and appreciation (r = 0.45, p = 0.009).

Discussion

The decrease in the HADS scores after the intervention shows that mindfulness-based cyclic meditation affects anxiety and depression for Japanese cancer patients. This result is consistent with those of Tacon et al.^{18,19} using the State-Trait Anxiety inventory and Garland et al.¹⁰ using the Profile of Mood of States. Therefore, MBSR may be effective for anxiety or depression in Japanese patients as an individual and short-term therapy. Matchim and Armer²⁰ suggested that more research is needed to test the instruments in MBSR and establish their validity and reliability in oncology patients. Thus, the present study provides a new finding that MBSR may affect anxiety and depression in Japanese patients based on the HADS score. The increase in FACIT-Sp scores after MBSR was not significant, with a change from 32.1 to 33.0 compared to the increase in FACIT-Sp score in Garland et al.¹⁰ from 28.43 to 32.1. These results suggest that ceiling effects may prevent a significant change in spiritual well-being.

Regarding the association among variables, the relationship of FACIT-Sp with HADS (r = -0.78) shows that

TABLE 2. CORRELATION COEFFICIENTS AMONG VARIABLES

	HADS	Anxiety	Depression	FACIT-Sp	Growth	Appreciation	Pain	Symptom
HADS	1							
Anxiety	—	1						
Depression	—	0.61 ^a	1					
FACIT-Sp	-0.78 ^a	-0.75 ^a	-0.64 ^a	1				
Growth	0.27	0.25	0.23	-0.35 ^b	1			
Appreciation	0.22	0.21	0.19	-0.1	0.45 ^c	1		
Pain	0.30	0.35 ^b	0.16	-0.41 ^b	0.05	-0.1	1	
Symptom	0.32	0.35 ^b	0.20	-0.27	0.06	-0.3	0.30	1

^ap < 0.00.

^bp < 0.05.

^cp < 0.01.

HADS, Hospital Anxiety and Depression Scale; FACIT = Sp, Functional Assessment of Chronic Illness Therapy = Spiritual.

spirituality is correlated with anxiety and depression. This result is also in accord with Garland et al.,¹⁰ in which increased spirituality was related to decreased stress and reduced mood disturbance after MBSR. FACIT-Sp and growth showed a significant negative association, which is opposite to the results of Garland et al.,¹⁰ in which a benefit finding was elicited or posttrauma growth was related to spirituality. Our results suggest that patients with high spirituality such as meaning or moderate feelings do not always experience growth. This negative association may have been influenced by other variables such as pain,⁵ and self-reporting or a daily diary may be useful to examine the process of psychological change.^{21,22}

Last, we note several limitations of the study, including that a control group was not established and the number of participants was small. However, the results provide a useful indication that MBSR may be effective for anxiety and depression in Japanese cancer patients, and that spiritual well-being is related to anxiety, depression, and growth. A further study including a control group may help to establish these findings more clearly.

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Author Disclosure Statement

No competing financial interests exist.


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The palliative care knowledge test: reliability and validity of an instrument to measure palliative care knowledge among health professionals

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Abstract

Development of palliative care educational programmes continues in Japan. An instrument to evaluate a wider range of palliative care knowledge among general physicians and nurses is needed. However, such an instrument does not currently exist. The aim of this study was to develop an assessment to measure the efficacy of palliative care educational programmes. The questionnaire survey was validated with a group of 940 nurses at two facilities. The response rate was 85 % ($n = 797$). This study used psychometric methods such as item response theory and intraclass correlation coefficients. Ultimately, 20 items in 5 domains including 'philosophy', 'pain', 'dyspnoea', 'psychiatric problems' and 'gastro-intestinal problems' were selected. For these items, the intraclass correlation was 0.88 overall and 0.61–0.82 in each domain; the Kuder-Richardson formula 20 in internal consistency was 0.81. Validity and reliability of the instrument were established. This tool is designed to evaluate a wider range of palliative care knowledge than currently available assessments and can be used for general physicians and nurses. The evaluation of educational programmes and the clarification of actual knowledge acquired are possible using this instrument.

Keywords

educational measurement, evaluation, knowledge, nurse, palliative care, physician

Introduction

Palliative care is an essential part of cancer care.¹ However, lack of knowledge of palliative care among health professionals is one of the most common barriers to quality palliative care. Therefore, education on palliative care for health professionals is needed.^{2–5}

Till date, studies of palliative care educational programmes in foreign countries have shown that knowledge and skills can be improved.^{6–9} The dissemination of palliative care for cancer patients is

promoted as a national policy in Japan.¹⁰ To improve palliative care throughout Japan, a nationwide demonstration project, the Outreach Palliative Care Trial of Integrated Regional Model (OPTIM) study, is ongoing.¹¹ The OPTIM study is an intervention trial targeting four areas across Japan. One of the aims is an improvement of palliative care knowledge and skills among health professionals including general physicians and nurses. Another objective is the development of an educational programme that disseminates

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