

Multiple evaluation of a hospital-based palliative care consultation team in a university hospital: Activities, patient outcome, and referring staff's view

TOMOYO SASAHARA, R.N., PH.D.,¹ MITSUNORI MIYASHITA, R.N., PH.D.,²
MEGUMI UMEDA, R.N., M.S.,³ HITOMI HIGUCHI, M.D., PH.D.,⁴ JUNKO SHINODA, M.D., PH.D.,⁴
MASAKO KAWA, R.N., PH.D.,⁵ AND KEIKO KAZUMA, R.N., PH.D.²

¹Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan

²Department of Adult Nursing/Palliative Care Nursing, School of Health Sciences and Nursing, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

³Office Umeda, Tokyo, Japan

⁴Center for Palliative Care, Showa University Hospital, Tokyo, Japan

⁵Palliative Care Support Group, Tokyo, Japan

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ABSTRACT

Objective: Although the number of hospital-based palliative care consultation teams (PCCTs) is rapidly increasing in Japan, there is limited information available concerning the activities and usefulness of PCCT in the country. The aim of this study is to clarify the activities, patient outcome, and referring staff's view of an established PCCT in Japan.

Method: This was a prospective study to follow patients referred to a PCCT for 28 days over a 1-year period. Patients were assessed by the Support Team Assessment Schedule–Japanese version (STAS-J) and EORTC QLQ C-30 at the time of referral and on days 7, 14, and 28. A staff survey was implemented using a questionnaire after each observation period.

Results: Of 180 patients referred, 53 patients were eligible for the study. Although the median of the number of the reasons for referral was 1, the PCCT provided several kinds of support: pain management, 94%; emotional support for the patient, 49%; and emotional support for the family, 36%. On day 7 after referral, of the items of STAS-J and the EORTC QLQ C-30 subscales, only insomnia improved significant whereas “other physical symptoms” and constipation were significantly exacerbated. In the staff survey, of the 98 respondents, more than 90% considered the effect of the PCCT as “excellent” or “good” and were satisfied with the support provided.

Significance of results: This study showed that the PCCT performed comprehensive assessments on referred patients and provided extra support. No patient's QOL 1 week after referral was improved with the exception of insomnia. Referring staff highly evaluated the activities of the PCCT. In the evaluation of PCCTs, further research about the variation of clinical activities of PCCTs, their applicability, and benefit is needed.

KEYWORDS: Palliative care, Palliative care consultation team, Consultation, Evaluation, University hospital

INTRODUCTION

Specialized palliative care consultation teams (PCCTs) play an important role in acute care hospi-

tals in terms of enabling the adoption of palliative care early in disease trajectories, as is stated in the WHO definition of the term (Sepulveda et al., 2002). In many Western countries, palliative care consultation services were established in the 1990s (Palliative Care Australia, 1999; Pan et al., 2001; Kuin et al., 2004; National Council for Palliative Care, 2007), and their usefulness has been investigated by systematic

Address correspondence and reprint requests to: Tomoyo Sasahara, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Ten-nodai, Tsukuba, 305-8575 Japan.
E-mail: tsasahara@md.tsukuba.ac.jp

review (Higginson et al., 2002), randomized controlled trials (Hanks et al., 2002; Rabow et al., 2004), comparative study of different consultation types (Schrijnemaekers et al., 2003), before-and-after studies of intervention by PCCTs (Ellershaw et al., 1995; Abrahm et al., 1996; Jack et al., 2003, 2004), descriptive studies of PCCT recommendations (Manfredi et al., 2000; Homsy et al., 2002; Kuin et al., 2004), examinations of newly identified problems by PCCTs (Braitheh et al., 2007; Vernooij-Dassen et al., 2007), satisfaction surveys of referring staff (Carter et al., 2002; Virik & Glare, 2002), and cost-effectiveness analyses (Axelsson & Christensen, 1998; Hanson et al., 2008).

In Japan, the number of hospitals with a PCCT has drastically increased to 351 over the past few years because the government cancer policy has strongly supported the dissemination of specialized palliative care. However, there is limited information available concerning the activities and usefulness of PCCTs in Japan. Morita et al. (2005b) implemented a prospective study of 111 referred patients and collected data regarding the reasons for referral, patients' characteristics, symptom severity at the time of referral, improvement of symptoms during the first week, and types of therapeutic interventions performed after PCCT consultation. Yoshimoto et al. (2005) conducted a prospective study of 149 referred patients and reported that pain and dyspnea were improved after PCCT consultation. Nevertheless, these results were obtained at a general hospital, and data concerning PCCT activities were not collected.

In exploring the usefulness of PCCTs, the referring staff's views are also important (Fischberg & Meier, 2004). PCCTs can only take action to help patients and families upon receiving a referral from ward staff. Thus, to ensure consistent referrals, it is important to investigate how referring staff view the usefulness of PCCTs and whether they are satisfied with their activities and patient outcomes.

Showa University Hospital is a 1,100-bed acute care hospital without a palliative care unit (PCU). A PCCT based at this hospital has been playing a pioneering role in Japan. In 1992, three physicians developed the PCCT to provide direct care for terminally ill patients, and, in 1999, a certified nurse specialist in oncology joined the PCCT, and the team's focus changed to consultation. The full-time members of the PCCT are a palliative care physician and a nurse. The physician was trained as a pain clinician and has worked in the PCCT for two and a half years (in Japan, there is no certification system for palliative medicine). The nurse has officially qualified as a "certified nurse specialist in oncology" and has 10 years of clinical experience. In addition, the

PCCT has a psychiatrist as a part-time member, available in the same hospital. (These three types of professionals are required for coverage by the National Medical Insurance.) After referral, the initial assessment of patients is undertaken by the palliative care physician or the nurse, either alone or together, and detailed advice about any identified problems is communicated to the ward staff directly and written in the patient's case notes. A follow-up is then carried out by the palliative care physician and/or the nurse on the basis of the patient's and ward staff's needs. Ward rounds by all PCCT members are undertaken for all referred patients once a week. Multidisciplinary care conferences including pharmacists, a medical social worker, and link-nurses are performed once a week, and all patients are reviewed.

The aims of this study are to clarify the activities, patient outcome, and referring staff's views of an established PCCT in a university hospital in Japan.

METHODS

This was a prospective study to follow the activities of a PCCT and the patients referred to it for 28 days over a 1-year period.

Subjects

The subjects were patients referred to the PCCT between February 2004 and March 2005. As a certain number of patients were expected to decline due to their condition deteriorating (Hanks et al., 2002; Stromgren et al., 2005), we adopted a health professional-assessed tool (STAS-J) to cover a greater number of patients and asked for a self-assessment questionnaire (EORTC QLQ-C30) to be filled out by those patients who were able to do so. Inclusion criteria were (a) presence of a malignant disease and (b) an age of 20 years or older. Exclusion criteria were (a) previous referral to the PCCT, (b) not having been informed of their diagnosis, (c) family refusal, (d) no direct PCCT involvement with the patient, and (e) refusal of the attending physician to allow the patient to participate. In the ward staff evaluation, primary nurses of all patients referred to the PCCT during the study period were asked to fill out a questionnaire.

Measurements

PCCT Activities

Providing support. From the literature (Manfredi et al., 2000; Zhukovsky, 2000; Blackford & Street,

2001; Homsy et al., 2002; Virik & Glare, 2002), 10 categories of support provided by PCCTs were identified: pain management, other physical symptom management, psychiatric symptom management, emotional support for the patient, emotional support for the family, informing the patient, informing the family; transition to home, transition to PCU, and end-of-life care.

The number of visits to patient/ward staff. The number of times the PCCT visited patient/ward staff was recorded on a daily basis.

Patient Outcome

Support Team Assessment Schedule–Japanese version (STAS-J). This is a health professional-assessed tool for palliative care including 9 items: pain, other physical symptoms, patient anxiety, family anxiety, patient insight, family insight, communication between patient and family, communication among staff, and communication between patient and staff. Each item is rated from 0 to 4, and a higher score represents worse symptoms or more serious problems. The reliability and validity of the Japanese version of STAS has been confirmed (Miyashita et al., 2004).

EORTC QLQ-C30 (version 3.0). This is a patient-assessed questionnaire including a total of 30 items and is composed of six functioning scales: physical (5 items), emotional (4 items), role (2 items), cognitive (2 items), and social functioning (2 items), as well as global health status (2 items). This questionnaire also comprises three symptom scales: vomiting (2 items), fatigue (3 items), and pain (2 items), and 6 single items: dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties. The items of global health status are rated from 1 (very poor) to 7 (excellent), and the remaining items are rated 1 (not at all) to 4 (very much). The responses were converted to 0–100 scales according to the scoring manual. Higher mean scores represent better functioning or more severe symptoms. The reliability and validity of the Japanese version of the EORTC QLQ-C30 has been confirmed (Kobayashi et al., 1998).

Patient Characteristics

Demographic data regarding the patient's age, sex, primary cancer site, presence or absence of metastasis, specialty of referring physician, ECOG PS, whether or not the patient was receiving anticancer treatment, patient outcome when the observation period ended, reason(s) for referral, date of admission, and date of death were collected.

Referring Staff's View

We asked primary nurses of the referred patients three *ad hoc* items by questionnaire: (a) How did the PCCT affect the referred patient, (b) to what extent are you satisfied with the support provided by the PCCT for the referred patient, and (c) do you think that the PCCT needs to be improved? In cases where a need for improvement was indicated, we asked subjects to write their views. Prior to the study, a pilot test was conducted to confirm the face and content validity of the questionnaire, using two ward nurses who had previously referred patients to the PCCT as subjects.

Data Collection

After initial assessment by the PCCT, the researcher (T.S.) was introduced to the patient by a member of the PCCT and obtained written informed consent. PCCT members checked all provided support when the observational period had finished, which was either at the time of the patient's death, the patient's discharge, or 28 days after referral. Data concerning the number of visits to patient/ward staff were collected on a daily basis by the researcher, and STAS-J and EORTC QLQ-C30 were assessed at the time of referral and on days 7, 14, and 28. STAS-J was assessed by the ward nurse charged with the patient on the assessment day. As ward nurses were not familiar with STAS-J, simple instructions were attached to the sheet and the researcher gave directions when needed. EORTC QLQ-C30 was completed by the patient on the assessment day. Patient demographic data were collected through the patient case note or the PCCT chart. A staff questionnaire was given to the primary nurse of the patient referred to the PCCT when the observational period had finished. To reduce response bias, the questionnaire could be returned anonymously to the researcher by mail, and it was clearly stated that no PCCT members would have access to individual responses.

This study was approved by the Institutional Review Board of Showa University Hospital.

Analysis

Activities of the PCCT were analyzed using descriptive statistics. The number of visits to patients/ward staff per day was calculated by dividing the total number of visits to patients/ward staff by the total number of working days during the observation period.

The items of STAS-J were analyzed after collapsing them into dichotomous variables: "none/a little" (0, 1) and "over moderate" (2–4). To investigate the change in referred patients, each item of the

STAS-J and the subscale of the EORTC QLQ C-30 was compared between the initial assessment and day 7; data were obtained for 45 patients for STAS-J and 22 patients for EORTC QLQ C-30. Data for days 14 and 28 were not used because too many patients had withdrawn by that time.

In the analysis of staff evaluation, we used descriptive statistics as well as determining the differences in patient background and PCCT activities between respondent cases and nonrespondent cases. Written comments were categorized based on the similarity of content.

Statistical tests were performed by Fisher's exact test, *T* test (nonpaired, paired), the Wilcoxon rank-sum test, and the McNemar test where appropriate. *P* values < .05 were considered to be significant with a two-tailed statistical test. All statistical analyses were performed using the statistical package SAS (version 9.1; SAS Institute Inc., Cary, NC, USA).

RESULTS

Of 180 patients referred to the PCCT during the study period, 53 patients were eligible. The main

reasons for ineligibility were previous referral (44%), too ill/confused (24%), and no family consent (12%) (Fig. 1).

As a result of the comparison between eligible and ineligible patients, there was no significant difference in patient background, the number of types of support provided by PCCT, and the number of PCCT visits to the patient/ward staff (data not shown).

Patient Characteristics

Table 1 shows the characteristics of the patients who participated in the study. Just over half of the patients were female (51%) and the mean age was 64 years old. Over half of the patients were referred by gastrointestinal surgery, 11% were referred by gastroenterological medicine, and 9% were referred by both gynecology and urology. Fifty-eight percent of patients scored under 2 in the ECOG PS, and about half of patients had anticancer treatment at the time of referral.

The main reasons for referral were pain management (85%), transition to home (15%), and transition to PCU (13%; Fig. 2).

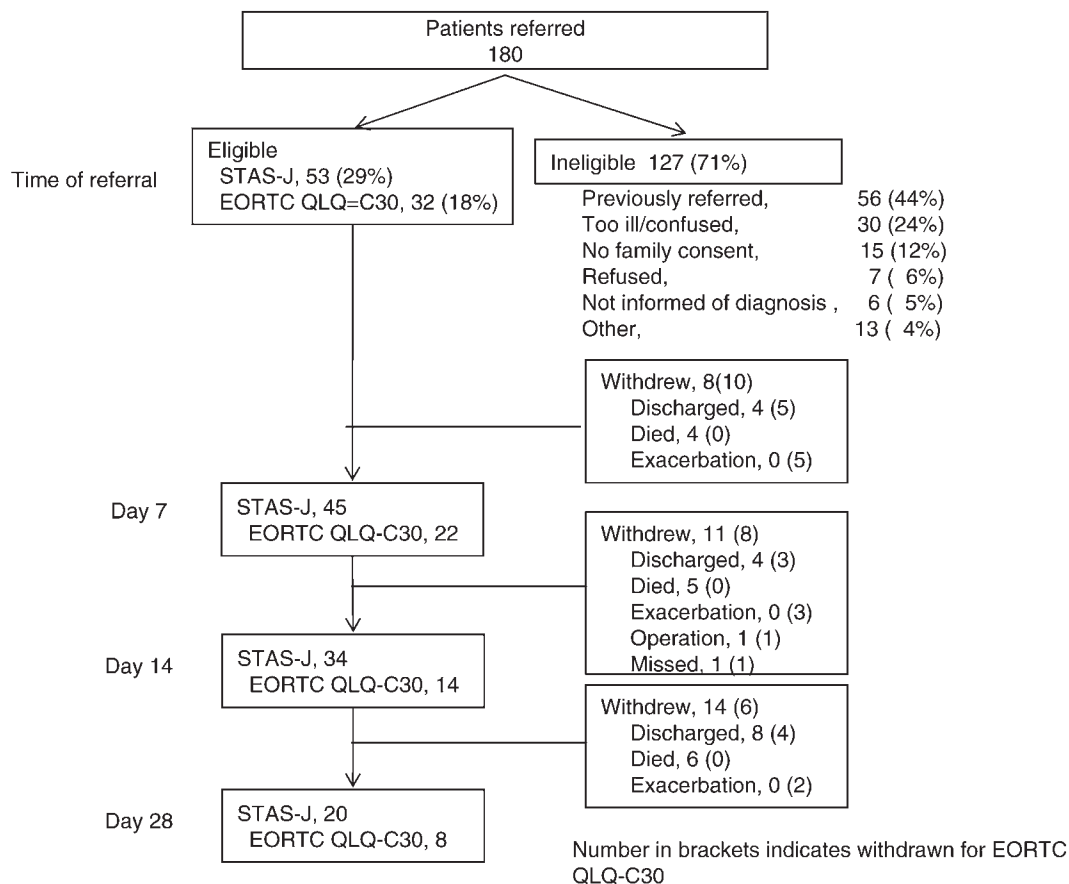


Fig. 1. Participants and flow during the study period.

Table 1. Characteristics of patients (N = 53)

	n	%
Sex		
Female	27	51
Age (mean \pm SD)	64.3 \pm 13.0	
Speciality of referring physicians		
Gastroenteral surgery	29	55
Gastroenteral medicine	6	11
Gynecology	5	9
Urology	5	9
Ear, nose, throat	3	6
Hematology	3	6
Others	2	4
Primary site		
Stomach, esophagus	12	23
Colon, rectum	8	15
Pancreas	5	9
Breast	5	9
Lung	3	6
Bile duct	3	6
Head & neck	3	6
Ovary, uterus	3	6
Kidney, urinary organs	3	6
Hematology	2	4
Liver	1	2
Others	5	9
Metastasis/recurrence	48	91
ECOG PS		
1	16	31
2	14	27
3	13	25
4	8	16
Receiving chemotherapy	24	45
Receiving radiation	8	15
Patient outcome when the observation period ended ^a		
During admission	22	42
Discharge	15	28
Death	14	26
Transferred elsewhere	2	4
Days from admission to PCCT referral (mean \pm SD/median)	19 \pm 26/8	
Days from PCCT referral to death ^b (mean \pm SD/median)	61 \pm 56/44	

PCCT: Palliative Care Consultation Team.

^aObservation period means from time of the referral to day 28, discharge, or death.

^bData from 35 patients who were confirmed dead during the research period (from February 2004 to March 2005).

PCCT Activities

Figure 2 shows the support that the PCCT provided after referral. The median number of referral reasons was 1 (range 1–3); in contrast, the median number of types of support was 3 (range 1–7). The main types of support offered were pain management, 94%; emotional support for patient, 49%; and emotional support for family, 36%. The mean number of visits to the patient or ward staff was 0.8 (*SD* = 0.3) per day or 0.7 (*SD* = 0.2) per day, respectively.

Change in Patient Outcome

Table 2 shows the change in STAS-J items at day 7. “Other physical symptoms” were significantly exacerbated ($p < .01$). No significant differences were observed in any of the other items.

Table 3 shows the change in EORTC QLQ C-30 subscales at day 7. Only insomnia improved significantly ($p < .01$). On the other hand, constipation was significantly exacerbated ($p < .05$). There were no significant differences in any functional scales.

Referring Staff Evaluation

Of 180 questionnaires distributed, 98 questionnaires were returned (54%). Responses were obtained from 68 nurses. The 68 nurses had a median clinical experience of 4 years, and most of them were female (97%).

The results showed that the number of responses was significantly greater when the patients were referred from physicians in the surgical department ($p < .02$), when the observational period ended during admission ($p < .001$), when the PCCT provided support over 1 week ($p < .001$), when a greater amount of kinds of support was provided by the PCCT ($p < .03$), and when “informing the family” was provided more by the PCCT ($p < .02$).

Of 98 respondents, more than 90% considered the effect of the PCCT on the referred patients as “excellent” or “good,” and were also satisfied with the support provided by the PCCT (Table 4). Twelve percent of respondents thought that the PCCT needed improvements. The respondent comments included “increasing the time for support,” “enhancing cooperation with ward staff,” “providing more information to patients and ward staff,” “constant involvement in the case,” “educating ward staff about the methods of psychosocial support,” and “defining who explains the cost of the PCCT.”

DISCUSSION

This study evaluated an established PCCT at a university hospital using a multifaceted approach.

It was found that the PCCT provided more support than requested from referring staff and that the provision of psychosocial support was exceptional. These results are consistent with previous studies (Kuin et al., 2004; Braiteh et al., 2007). This is probably due to the PCCT not only addressing the reason for referral but also undertaking comprehensive assessments of referred patients, and the assessment of psychosocial problems is difficult for general staff (McDonald et al., 1999). In other words, the PCCT is aware of the problems that ward staff overlook

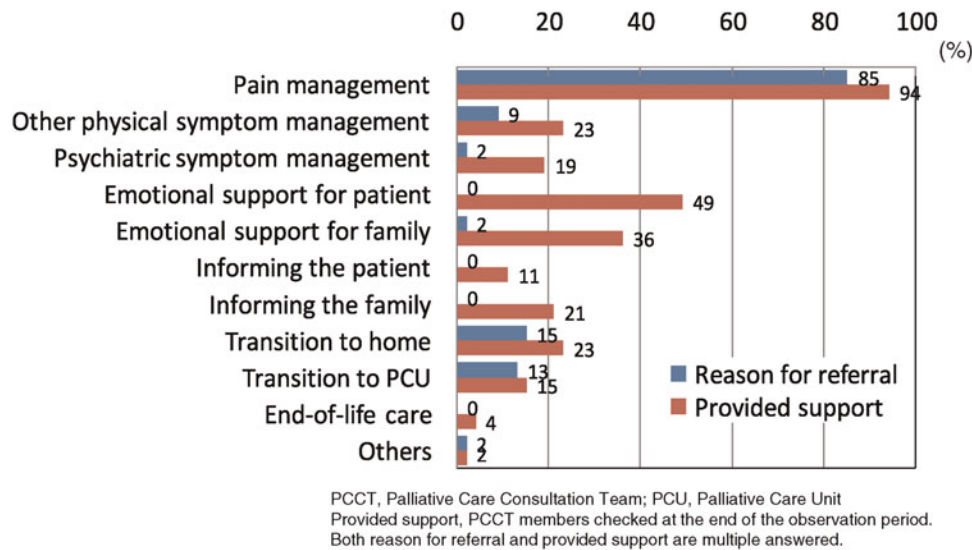


Fig. 2. (Color online) Reasons for referral and support provided by PCCT (N = 53).

and is thus able to provide extra support for patients and families.

Pain, which is the main reason for referral, was not improved during the first week. This result is not consistent with previous studies (Morita et al., 2005b; Yoshimoto et al., 2005). A possible cause of this inconsistency is differences in clinical activities among PCCTs. The PCCT of the present study took an educational approach (Sasahara et al., 2008) and, unlike PCCTs of previous studies, did not prescribe medications. Therefore, pain might not have been relieved sufficiently early. To confirm this hypothesis, a study with a longer observational period and a large number of patients is needed. In addition, the variation of clinical activities of PCCTs, their applicability (hospital type and degree of team maturation), and benefit should be discussed. It was shown that insomnia was significantly improved after 1 week, which means that the intervention for insomnia by the PCCT was adequate and the ward staff implemented the PCCT recommendation rapidly. Constipation was exacerbated during the first week. We assume this was caused by opioid medication being initiated or increased following a suggestion by the PCCT and that this was a temporary phenomenon. As with the results for pain, a study with a longer observation period is needed to confirm whether or not our assumption is correct.

The support by the PCCT was highly evaluated and satisfied the primary nurses. Some comments for improving the activities of the PCCT were noted. The PCCT should bear in mind those comments, but we do not think that the PCCT should necessarily accept and implement the changes requested by the ward nurses, because the PCCT itself has a

significant educational role for staff (Dunlop & Hockley, 1998). If the PCCT provides support merely as the ward staff requires, this would deskill their competence in palliative care (Jack et al., 2002).

This study also provided information about the backgrounds of patients referred to the PCCT. More than half of referred patients scored under 2 in

Table 2. Change of “over moderate” in STAS-J during first week (N = 45)

	Time of referral		Day 7		p value
	n	%	n	%	
Pain	35	78	29	64	.083
Other physical symptoms	17	38	32	71	<.01**
Patient anxiety	22	50	26	58	.491
Family anxiety	9	35	18	56	.059
Patient insight	24	65	22	56	1.000
Family insight	4	16	3	10	.564
Communication between patient and family	5	18	6	17	1.000
Communication among clinical staff	2	5	2	5	.564
Communication between patient/family and clinical staff	13	33	10	24	.564

STAS-J: Support Team Assessment Schedule–Japanese version. STAS-J was assessed by ward nurses who were charged with patient on the assessment day. Scores range from 0 to 4, with a higher score representing worse symptoms or more serious problems, and collapsed into “none/a little” (0, 1), and “over moderate” (2–4). The number in the table is the frequency of “over moderate.” McNemar Test was used.

** $p < .01$.

Table 3. Change in EORTC QLQ-C30 during first week (N = 22)

	Time of referral		Day 7		p value ^a
	Median	Range	Median	Range	
Symptom scales					
Pain	58.3	0–100	58.3	0–100	.88
Fatigue	50.0	0–100	44.4	0–100	.33
Appetite loss	66.7	0–100	66.7	0–100	.25
Insomnia	33.3	0–100	16.7	0–100	.01*
Dyspnea	33.3	0–100	0.0	0–100	.40
Constipation	33.3	0–100	50.0	0–100	.05*
Nausea and vomiting	8.3	0–100	16.7	0–100	.72
Diarrhea	0.0	0–66.7	0.0	0–66.7	.50
Financial difficulties	33.3	0–100	33.3	0–100	.46
Functional scales					
Physical	40.0	0–93.3	40.0	0–86.7	.22
Role	33.3	0–100	33.3	0–100	1.00
Emotional	66.7	11.1–100	66.7	0–100	.79
Cognitive	75.0	0–100	66.7	0–100	.97
Social	66.7	0–100	66.7	0–100	.87
Global health and status	41.7	0–100	33.3	0–75.0	.07

Scores range from 0 to 100, with a higher score representing a higher level of functioning or more severe symptoms.

^aWilcoxon rank-sum test was used.

* $p < .05$.

performance status, and nearly half of referred patients were receiving anticancer treatment. These results show that patients are referred to PCCTs early in the disease process (Morita et al., 2005a). Moreover, when we compare patients from the present study with those admitted to PCU in Japan

(Tada et al., 2004), the current patients presented more severe levels of pain, fatigue, dyspnea, nausea and vomiting, and constipation. This indicates that one of the main roles of PCCTs is symptom management (Morita et al., 2005a).

Our study has several limitations. First, we were only able to evaluate some of the patients referred to the PCCT. Although we confirmed that there was no major background difference between participants and nonparticipants, this result might have other selection biases. Second, we evaluated the PCCT according to aspects of the PCCT's activities, patient's quality of life (QOL), and the referring staff's view. However, other important aspects of the PCCT, such as the transfer of care and education of ward staff, should also be evaluated. Third, the respondents to the staff evaluation might have had a more positive attitude toward the PCCT because the evaluations obtained concerned patients in which the PCCT had a deeper involvement.

In conclusion, we evaluated an established PCCT working in a university hospital using multiple aspects. The PCCT performed comprehensive assessments and provided extra support for referred patients. No patient's QOL was improved, with the exception of insomnia at 1 week after referral to the PCCT. Ward staff highly evaluated the activities of the PCCT. In the evaluation of PCCTs, further research about the variation of clinical activities of PCCTs, their applicability, and benefit is needed.

Table 4. Ward nurses evaluation of PCCT support (N = 98)

	n	%
How did the PCCT affected the referred patient? ^a		
Excellent	36	37
Good	59	60
No change	3	3
To what extent are you satisfied with the support provided by the PCCT for the referred patient? ^b		
Very satisfied	27	28
Satisfied	54	55
Somewhat satisfied	15	15
Somewhat dissatisfied	2	2
Do you think the PCCT needs to be improved?		
Yes	12	12
No	84	86
Not answered	2	2

PCCT: Palliative Care Consultation Team.

^aRated by four-response categories: excellent, good, no change, and worse.

^bRated by six categories from "very satisfied" to "very dissatisfied."

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