prognostic prediction tools. Each PPI component is assigned an individual score, and these are added to derive the overall score. The final PPI score classifies patients into 1 of the 3 groups, those with survival predicted to be shorter than 3 weeks (PPI $\geq$ 6), shorter than 6 weeks (PPI $\geq$ 4), or longer than 6 weeks (PPI $<$ 4).

Previous studies[14] were performed prospectively and did not clarify the usefulness of the PPI in the home care setting. The aims of this study were thus to prospectively determine the sensitivity and specificity of the PPI in the home care setting and to evaluate the association of each PPI component with 3 and 6 weeks' prognostic prediction.

Methods

Our study population included all patients with advanced cancer who received home visiting services regularly from Yamato Clinic between April 2010 and June 2012 and who died at home or in the hospital. Yamato Clinic provides ambulatory care and home visiting services for community residents, with 3 doctors (including 1 researcher: JH) specialized in family medicine and palliative care. The 3 doctors (including 1 researcher: JH) had trained to assess the PPI components and used the PPI in their usual practice. We recorded patients' background information and prospectively assessed the components of the PPI at the first home visit, PPS score, oral intake, and the presence or absence of dyspnea at rest, edema, and delirium. One researcher (JH) calculated the PPI score and actual survival time when each patient died. Subsequently, we calculated overall sensitivity, specificity, and area under the curve (AUC) of the PPI. Survival predictions were defined as mentioned earlier, less than 3 weeks for PPI $\geq$ 6 and less than 6 weeks for PPI $\geq$ 4. In addition, we conducted univariable analyses to assess significant differences between 3- and 6-week survival and each PPI component.

To determine the association of each PPI component with 3 and 6 weeks' prognostic prediction, we used Student t test for continuous variables and Pearson chi-square test or Fisher exact test for categorical variables. All analyses were conducted using SPSS-J, ver.21.0, IBM (Tokyo, Japan).

This study was not confirmed by the institutional review board, but our study was performed according to the ethical guidelines for Epidemiological Research by the Ministry of Health, Labour and Welfare of Japan, and written informed consent was not necessary.

This study was conducted in conformity with the Declaration of Helsinki and was carried out with special regard for the protection of individual data.

Table 1. Patient Background (n = 66).

	All patients (n = 66), n (%)
Gender	
Male	48 (72.7)
Female	18 (27.3)
Mean age (year ± SD)	75.6 ± 11.3
Range, years	41–94
Age distribution	
35-49	3 (4.5)
50-59	1 (1.5)
60-69	12 (18.2)
70-79	28 (42.4)
80-89	15 (22.7)
90+	7 (10.6)
Primary cancer site	
Lung	17 (25.8)
Stomach/esophagus	12 (18.2)
Colon/rectum/anus	10 (15.2)
Kidney/bladder	6 (9.1)
Liver/biliary system	6 (9.1)
Pancreas	4 (6.1)
Prostate	3 (4.5)
Brain	3 (4.5)
Breast	1 (1.5)
Blood	1 (1.5)
Others	3 (4.5)

Abbreviation: SD, standard deviation.

Table 2. The PPI Scores and 3-Week Survival.

	<3 weeks' survival	≥3 weeks' survival	Total
PPI ≥ 6	12[a]	6	18
PPI < 6	8	40	48
Total	20	46	66

Abbreviation: PPI, Palliative Prognostic Index.

[a] Number of patients surviving <3 weeks with PPI scores >6.

Table 3. The PPI Scores and 6-Week Survival.

	<6 weeks' survival	≥6 weeks' survival	Total
PPI ≥ 4	24[a]	9	33
PPI < 4	10	23	33
Total	34	32	66

Abbreviation: PPI, Palliative Prognostic Index.

[a] Number of patients surviving <6 weeks with PPI scores >4.

Table 4. Accuracy of PPI for Patients With Advanced Cancer in Home Care Settings.

	<3 weeks, %	<6 weeks, %
Sensitivity	60.0	70.6
Specificity	87.0	71.9
Positive predictive value	66.7	72.7
Negative predictive value	83.3	69.7
Area under the curve	74	67

Abbreviation: PPI, Palliative Prognostic Index.

Results

A total of 66 (48 males) patients were included in this study. Table 1 shows the patient background information in detail. The mean patient age was 75.6 years, with 28 (42.4%) patients in their 70s and 15 (22.7%) patients in their 80s. The primary cancer site was lung in 17 (15.8%) patients, stomach/esophagus

Table 5. Univariable Analyses for Patients Surviving <3 Weeks and 6 Weeks (n = 66).

Variable	<3 weeks' survival (n = 20), n (%)	≥3 weeks' survival (n = 46), n (%)	P value	<6 weeks' survival (n = 34), n (%)	≥6 weeks' survival (n = 32), n (%)	P value
Mean age (year ± SD)	73.1 ± 10.7	76.6 ± 11.5	.25[a]	72.4 ± 10.4	78.9 ± 11.4	.019[a]
Sex						
Male	15 (75.0)	33 (71.7)	.785[b]	26 (76.5)	22 (68.8)	.482[b]
Female	5 (25.0)	13 (28.3)		8 (23.5)	10 (31.3)	
Palliative Performance Scale version 2 (PPSv2)[8]						
10-20	3 (15.0)	0	.01[c]	3 (8.8)	0	.001[c]
30-50	16 (80.0)	36 (78.3)		30 (88.2)	22 (68.8)	
60+	1 (5.0)	10 (21.7)		1 (2.9)	10 (31.3)	
Oral intake						
Severely reduced	8 (40.0)	1 (2.2)	<.01[c]	8 (23.5)	1 (3.1)	.006[c]
Moderately reduced	12 (60.0)	31 (67.4)		23 (67.6)	20 (62.5)	
Normal	0	14 (30.4)		3 (8.8)	11 (34.4)	
Edema						
Present	11 (55.0)	16 (34.8)	.125[b]	17 (50.0)	10 (31.3)	.122[b]
Absent	9 (45.0)	30 (65.2)		17 (50.0)	22 (68.8)	
Dyspnea at rest						
Present	8 (40.0)	3 (6.5)	.002[b]	9 (26.5)	2 (6.3)	.028[b]
Absent	12 (60.0)	43 (93.5)		25 (73.5)	30 (93.8)	
Delirium						
Present	8 (40.0)	4 (8.7)	.005[c]	11 (32.4)	1 (3.1)	.002[b]
Absent	12 (60.0)	42 (91.3)		23 (67.6)	31 (96.9)	

Abbreviation: SD, standard deviation.

[a] Student *t* test.

[b] Pearson chi-square test.

[c] Fisher exact test.

in 12 (18.2%) patients, and colon/rectum/anus in 10 (15.2%) patients.

The mean survival time after the first home visit was 72.9 days. Survival time was shorter than 3 weeks in 20 (30.3%) patients and shorter than 6 weeks in 34 (51.5%) patients. Table 2 shows PPI scores and 3-week survival, and Table 3 shows PPI scores and 6-week survival. In all, 18 (27.3%) patients had PPI scores ≥6, while 33 (50%) had PPI scores ≥4. In all, 12 patients with PPI scores ≥6 survived for less than 3 weeks, while 24 patients with PPI scores ≥4 survived for less than 6 weeks.

Table 4 shows the accuracy of the PPI for patients with advanced cancer in the home care setting. Three-week survival was predicted with a sensitivity of 60% (95% confidence interval [CI], 39%-78%), a specificity of 86.9% (95% CI, 74%-94%), a positive predictive value of 66.7%, and a negative predictive value of 83.3%; the AUC was 74% (95% CI, 59%-88%). Six-week survival was predicted with a sensitivity of 70.6% (95% CI, 54%-83%), a specificity of 71.9% (95% CI, 55%-84%), a positive predictive value of 72.7%, and a negative predictive value of 69.7%; the AUC was 67% (95% CI, 54%-81%).

Table 5 shows the association of each PPI component with 3 and 6 weeks' prognostic prediction. We conducted univariable analyses concerning PPI components for patients who survived less than 3 weeks and less than 6 weeks. These analyses found that PPS, oral intake, dyspnea at rest, and delirium were statistically significant for patients who survived less than 3 weeks and less than 6 weeks.

Discussion

This study demonstrated 3 important findings. First, the sensitivity of the PPI for patients with advanced cancer in the home care setting was lower than for patients with advanced cancer in palliative care units. Morita et al[13] reported that the sensitivity of the PPI for patients with advanced cancer in the hospice setting who survived less than 3 weeks and less than 6 weeks was 83% and 79%, respectively. This finding is same as that of our previous retrospective study.[15] Maltoni et al[16] also reported a prospective comparison between several prognostic scores, including the PPI, in the hospice setting. They found that the sensitivity and specificity of PPI scores ≥5 in patients who survived for less than 3 weeks in the hospice setting were 73.7% and 67.1%, respectively. To the best of our knowledge, however, our study is the first to prospectively reveal the usefulness of the PPI for patients with advanced cancer in the home care setting while also pointing out the limitations of the utility of the PPI in this population and setting.

One possible reason for the discrepancy in PPI sensitivity between patients with advanced cancer in the hospice setting and those in the home care setting is the differential prevalence of PPS ≤20 and delirium, which are the most heavily weighted scores in the PPI scoring system. In our study, the prevalence of

PPS ≤20 in the home care setting was 4.5%, whereas Morita et al[13] and Maltoni et al[16] reported prevalence of 23% and 41.3%, respectively, in the hospice setting. This discrepancy suggests the possibility that home visiting services tend to be started at early stages for patients with advanced cancer, because whilethe median duration of survival was 40 days in our study, Morita et al[13] reported 27 days and Maltoni et al[16] reported 22 days in the hospice setting. Regarding the prevalence of delirium, our study revealed a prevalence of 18.2% in the home care setting, whereas Morita et al[13] and Maltoni et al[16] reported prevalence of 38% and 28.2%, respectively, in the hospice setting. This discrepancy may have 2 causes. First, we may have underdiagnosed delirium because we did not use routinely a specific assessment tool for its screening. Second, patients who have delirium may tend not to transfer from hospital to home care, because management of delirium is commonly difficult in the home care setting. The prevalence of other symptoms in our study, namely, oral intake, edema, and dyspnea at rest, also differed compared to the hospice setting. In our study, the prevalence of severely reduced oral intake, edema, and dyspnea at rest were 13.6%, 40.9%, and 16.7%, respectively, although Morita et al[13] reported prevalence of 38%, 35.4%, and 18% and Maltoni et al[16] reported prevalence of 27.7%, 33%, and 24.4%, respectively. These discrepancies may suggest that patient background differs intrinsically between the home care setting and the hospice setting. Therefore, the low sensitivity of the PPI means that this instrument may not be suitable for detecting poor prognosis in patients with relatively good performance status, especially in the home care setting. In addition to the results mentioned earlier, we found that the specificity of PPI for patients with advanced cancer in the home care setting was nearly 90% in our study for 3-week survival, the same as in our previous study.[15] These results support our previous suggestion that the PPI might not be useful as a screening tool for poor prognosis in the home care setting because of its low sensitivity but might be useful with PPI scores <6, predicting survival longer than 3 weeks.

The second important finding of this study was that PPS, oral intake, dyspnea at rest, and delirium had statistically significant associations with survival durations of less than 3 weeks and less than 6 weeks for patients with advanced cancer in the home care setting, while edema showed no significant correlation. This finding is in accordance with the European Association for Palliative Care recommendations regarding prognostic factors.[2] It is possible that no association was detected between edema and survival due to insufficient power resulting from the small sample size of this study. We must reevaluate this question using a larger sample size from this patient population before forming a definitive conclusion, because a previous study[11] showed that edema was significantly related to patient survival in the hospital setting.

The last important finding of this study was that all 14 patients with normal oral intake survived longer than 3 weeks. One possible reason may be that the nutritional status of the current study, patients with normal intake, was maintained better than that of patients in previous studies using inpatient settings. In the home care setting, patients can eat their favorite foods whenever they want, making it more likely that they can maintain a normal oral intake which may lead to prolonged survival. A corollary to this is that there may be several disadvantages to using oral intake as a factor in predicting prognosis in the inpatient setting; for example, patients may not be served meals they like, and they may not express their meal preferences as easily as in the home care setting. Therefore, we may mistakenly judge that patients in the inpatient setting may have decreased oral intake when in another setting they would in fact have normal oral intake.

This study has 3 limitations. First, our report may not be representative of patients with advanced cancer in the home care setting, because it was carried out only in 1 institution. Second, the population of this study was relatively small. These limitations restrict the generalizability of our results. Third, as we have already described, we may have underdiagnosed delirium because we did not screen using a standardized specific assessment tool such as Confusion Assessment Method.[17] This may affect the accuracy of the PPI in the current study. To overcome these limitations, we should carry out a large multicenter study for patients with advanced cancer using standard symptom assessment tools in the home care setting.

In conclusion, this study showed that the PPI had a lower sensitivity for patients with advanced cancer in the home care setting than for those in palliative care units, although the specificity of the PPI for patients with advanced cancer in the home care setting was nearly 90% for 3-week survival. Further research is needed to develop more accurate prognostic prediction tools for use in the home care setting.

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Declaration of Conflicting Interests

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Original Article

Troubles and Hardships Faced by Psychologists in Cancer Care

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Objective: The aim of this study was to identify problems experienced by psychologists involved in cancer and palliative care and consider an education system for psychologists.
Methods: We conducted a questionnaire survey of psychologists involved in cancer care and palliative care. At the 403 facilities, 419 psychologists who received the questionnaire were asked to fill it out anonymously. A total of 294 people (61 male, 233 female, average age ± SD = 36.3 ± 9.4) responded about troubles and hardships actually faced by psychologists working in cancer care. We performed qualitative content analysis of free responses.
Results: We obtained the following five categories: 'Hospital system', 'Psychologist role and specialization (ambiguity of the role expected of psychologists and problems arising because psychologists are not nationally licensed)', 'Collaboration with other medical professionals (problems with the method of requesting psychologist cooperation and problems of consultation and liaison work within the hospital)', 'Specialized support provided by psychologists (difficulty of interaction with patients and their families, inadequate provision of psychological support in cancer care, problems related to death care and lack of psychiatric knowledge)', 'Stress faced by psychologists (psychologist's isolation and anxiety, psychologist's internal conflicts, psychologist burnout and helplessness and psychologist self-improvement)'.
Conclusions: Psychologists must acquire at least a minimal level of medical knowledge and understanding of cancer treatment. Furthermore, they require training through specific case studies in order to facilitate collaboration with other medical professionals and concrete training in aspects of psychological support that are specifically tailored to cancer treatment through case studies.

Key words: psychologist – cancer care – trouble – hardship – education

INTRODUCTION

The Basic Plan for Cancer Control Measures of 2009 emphasizes the alleviation of physical symptoms and provision of support for psychological problems from the early stages of treatment. In addition, providing appropriate support, including emotional care, to both cancer patients and their families is also highly valued. Thus, in the future, psychologists, along with psycho-oncologists are expected to increasingly contribute to cancer care and palliative care. Iwamitsu et al. (1) conducted focus group interviews of physicians and nurses about the roles of psychologists in palliative medicine; in particular, the roles demanded by the palliative care team were a major focus. They found that psychologists are expected to communicate with other medical professionals based on their broad knowledge of cancer treatment and utilize their expertise in psychology to provide psychological support to patients and family members, as well as other medical professionals. Unfortunately, the number of psychologists who can actually perform these functions is limited, and this is becoming a challenge for psychologists in cancer care, in Japan.

Meanwhile, following specific recommendations by the National Council for Hospice and Specialist Palliative Care Services (2) to include a psychologist as a member of the hospital palliative care team, psychologist involvement is slowly increasing in Western countries (3). In many Western countries, particularly in the UK, the role of psychologists has developed as one of assessment, therapy and consulting, within their relatively new post in the hospice setting (4). Consequently, having a psychologist as part of the multidisciplinary team has enhanced the psychological component of palliative care within the hospice setting. This is not surprising, given that psychologists in the UK must complete academic and professional training (5). Psychologists in countries such as Sweden, Australia, Korea and China are certified by the national government, while psychologists with Ph.D. degrees and intern training experience in the USA are certified by each state (6,7). However, Japanese psychologists are not certified by the national government, and they receive only 2 years of post-baccalaureate education, which is much shorter than that required in other countries. They undergo a multidisciplinary, cross-sectional certification process first pioneered primarily in the field of education. For this reason, psychologists working not just in cancer treatment, but across multiple fields of medical treatment, are in a precarious position. Among them are many psychologists working in the field of mental health, where the demands are high. Physicians have indicated problems with awareness, expertise and educational background of psychologists, including the lack of knowledge of medical science and treatment (8–10).

Quite a few psychologists working in cancer care are unsure about their own roles. Furthermore, many psychologists involved in cancer care have not fully mastered the knowledge and skills of the field. According to Kodama et al. (11), ~70% of psychologists in cancer care are unsatisfied with limited training opportunities in/out of their hospitals, and ~80% are not supervised by faculty of certified graduate schools on clinical psychology. The education system for cancer care psychologists remains inadequate, and thus psychologists working in these circumstances are thought to face numerous difficulties. In June 2012, the Japanese Ministry of Health, Welfare and Labour emphasized the importance of education for psychologists in cancer and palliative care with the basic plan to promote cancer control programs. However, a few studies have examined psychologist troubles and hardships in the cancer care setting, and little qualitative and systematic studies exist on education programs for cancer care psychologists.

Given the above, we conducted a questionnaire survey of psychologists involved in cancer care and palliative care. We analyzed specific responses about troubles and hardships actually faced by psychologists working in cancer care, with the aim to identify problems experienced by psychologists involved in cancer and palliative care and consider an education system for psychologists.

PARTICIPANTS AND METHODS

PARTICIPANTS

Subjects were cancer care psychologists at a total of 1185 facilities as of June 2009 (the time the research was conducted). These included 315 cancer center hospitals and 834 other designated clinical teaching hospitals and university hospitals. Because it is not possible to identify the above psychologists specifically, we used a double-envelope system. Briefly, we sent one copy of the questionnaire form for facility representatives, a request for participation in the study, and an explanation of the study to representatives of the 1185 facilities. We also mailed five copies of the questionnaire form to psychologists involved in cancer care, a request for participation in the study, and an explanation of the study to psychologists.

First, we asked the institution representatives to note (on the questionnaire form for facility representatives) the affiliation and number of psychologists working at the facility, and the number and area of affiliation of psychologists to whom the psychologist questionnaire was actually distributed. Of the total of 1185 facilities, 403 facilities responded (response rate: 34%). Among the 403 facilities, 136 employed no psychologists, and 267 employed psychologists, of which 326 were full-time and 164 were part-time psychologists, for a total of 490 psychologists.

Furthermore, at these 267 facilities, 419 psychologists thought to be involved in cancer care were actually given the questionnaire. Psychologists who received the questionnaire were asked to fill it out anonymously and return it. The study was explained in writing to representatives and psychologists involved in cancer care, and replies were regarded as consent to participate. Of the 419 given the questionnaire, 401 psychologists replied (response rate: 95.7%). We analyzed the data received from these 401 psychologists (89 male, 310 female, 2 unspecified; average age 37.2 ± 9.5).

This study was approved by the ethics committee of the Kitasato University School of Medicine.

QUESTIONNAIRE

The questionnaire targeting psychologists involved in cancer care was designed according to a literature review and exchanges of opinion with psychologists with 5 or more years of experience in cancer care, professionals with experience in psycho-oncology and researchers. The questionnaire was divided into five main areas:

(i) Basic attributes: included questions about sex, age, educational background, years of clinical experience, current workplace, whether or not workplace has psychologists or psychiatrists, clinical psychology qualifications, annual income, etc.
(ii) Knowledge and skills related to the field of cancer care: subjects were asked to rate on a scale of 1–4, the degree of necessity for psychologists for 28 items.
(iii) Work duties related to cancer: subjects were asked to rate on a scale of 1–4, the degree that 22 items were demanded in the workplace.
(iv) Working conditions related to cancer care at present workplace: subjects were asked what percentage of their work duties in the past year were related to cancer care, the total number of cases, the subjects of care and breakdown of the types of work.
(v) Problems confronting psychologists working in cancer care: subjects were asked to write freely about troubles or hardships they experienced while working in cancer care.

We analyzed troubles and hardships experienced by psychologists working in cancer care based on their responses to questionnaire areas 1 ('basic attributes') and 5 ('problems confronting psychologists working in cancer care').

PROCEDURES

Participants were asked to fill out the questionnaire voluntarily following the written explanation. The returned questionnaire within 2 weeks was regarded as consent.

OVERVIEW OF ANALYSIS

In order to investigate the potential differences in basic attributes between those who filled out the free response section about troubles or hardships actually experienced while working in cancer care (hereafter, 'free response group') and those who did not (hereafter, 'no-response group'), we divided respondents into two groups, calculated the average ± SD of age and years of clinical experience for each group, and performed a t-test. Next, to examine whether the existence of free responses were affected by sex (male or female), form of employment (part- or full-time), existence of a palliative team (yes or no) and participation in the palliative team (yes or no), the χ^2 test was performed for each of these factors.

We performed qualitative content analysis of free responses about troubles or hardships actually experienced while working in cancer care by referencing methods used by Mayring (12). First, two of the five analysts each extracted the key expressions and content from the responses of 192 psychologists. Next, names (code names) were attached to expressions and content, and similar contents were coded. Based on this, similar codes were aggregated and categorized, and category names were given. Finally, two analysts and one researcher in psychology and two psychologists checked and discussed the codes and categories repeatedly until an agreement was reached, and content validity was examined.

RESULTS

BASIC ATTRIBUTES IN PARTICIPANTS

On the question of troubles or hardships actually experienced while working in cancer care, there were 107 people in the no-response group (28 male, 77 female, average age ± SD: 39.4 ± 9.5) and 294 people in the response group (61 male, 233 female, average age ± SD: 36.3 ± 9.4). Average number of years of clinical experience ± SD was 13.1 ± 10.1 in the no-response group and 10.2 ± 8.8 in the free response group. An average number of years of medical experience ± SD were 11.2 ± 9.6 in the no-response group and 9.1 ± 8.5 in the free response group. An average number of years in cancer care ± SD was 3.4 ± 4.3 in the no-response group and 3.1 ± 3.3 in the free response group. The t-test found no difference between the two groups with regard to these attributes. The χ^2 test was performed for sex as well between free response (no-response group and free response group) and sex (male, female), but no bias in incidence was found. The χ^2 test performed for free response (no-response group and free response group) and form of employment (part-time, full-time) found that there were 75 full-time psychologists and 30 part-time psychologists in the no-response group, and 213 full-time psychologists and 74 part-time psychologists in the free response group, but no bias between them in the incidence. In the no-response group, 76 psychologists had a palliative team and 27 did not. In the free response group, 265 psychologists had a palliative team and 25 did not. The χ^2 test results to examine the presence of responses (no-response group, free response group) and presence of a palliative team (no team group, team group) revealed a bias in the incidence. In the free response group, the incidence of workplaces with palliative care teams was high at roughly 90%, while the no-response group showed a low incidence of workplaces with palliative care teams, at slightly >70% ($P < 0.05$). Similarly, for participation in the palliative care team, the no-response group had 46 people who had not participated in a palliative care team, while 57 had. On the other hand, in the free response group, 77 people had not participated in a palliative care team, while 211 had. The χ^2 test performed for responses (no-response group, free response group) and palliative team participation (no participation group, participation group) revealed a bias in the incidence. While participation in a palliative care team was >70% in the free response group, that in the no-response group palliative care team was <50% ($P < 0.05$).

TROUBLES AND HARDSHIPS

The following five categories were obtained in qualitative analysis of the free responses: 'Hospital system',

Table 1. Hospital system

Subcategory	Examination
Problems related to the hospital organization	The hospital organization is not large enough, lack of manpower
	Poor hospital management
	Lack of recognition of team medicine
	No full-time psychiatrist
	No appropriate department to which psychologists can belong
Psychologist working arrangements	Psychologists cannot work properly due to the part-time status
	Work limitations because only one psychologist works there
	Preoccupation with work duties other than cancer care
	Lack of economic independence

Table 2. Psychologist role and specialization

Subcategory	Examination
Ambiguity of the role expected of psychologists	Other medical professionals do not understand the psychologist's specialty
	Other medical professionals have different expectations for the roles played by psychologists
	Other medical professionals expect psychologists to play the same role of psychiatrists
	Other medical professionals have excessive expectations of psychologists
Problems arising because psychologists are not nationally licensed	Work performed by psychologists is limited because it is not covered by the medical insurance system
	Inconsistent treatment of psychologists
Lack of clarity regarding psychologist specialization	Other medical professionals do not understand psychologist specialization in cancer treatment
	Psychologists do not know how to make other medical professionals understand their specialization
	Psychologist's work overlaps with nurses' work duties in some cases
	Difficulty of having psychologist's activities and results evaluated by other medical professionals

'Psychologist role and specialization', 'Collaboration with other medical professionals', 'Specialized support provided by psychologists' and 'Stress faced by psychologists'.

In the 'Hospital system' category, the following two subcategories were extracted: (i) hospital or organization problems and (ii) problems with working arrangements (Table 1).

In the second category 'Psychologist role and specialization', three subcategories were extracted: (i) ambiguity of the role expected of psychologists, (ii) problems arising because psychologists are not nationally licensed and (iii) lack of clarity regarding psychologist specialization (Table 2).

In the third category 'Collaboration with other medical professionals', four subcategories were extracted: (i) problems with the method of requesting psychologist cooperation, (ii) problems related to the palliative care team, (iii) problems of consultation and liaison work within the hospital and (iv) problems of communication between medical staffs (Table 3).

In the fourth category 'Specialized support provided by psychologists', five subcategories were extracted: (i) difficulty of interaction with patients and their families, (ii) inadequate provision of psychological support in cancer care, (iii) problems related to death care, (iv) lack of medical knowledge and (v) lack of psychiatric knowledge (Table 4).

In the last category 'Stress faced by psychologists', four subcategories were extracted: (i) psychologist isolation and anxiety, (ii) psychologist internal conflicts, (iii) psychologist burnout and helplessness and (iv) psychologist self-improvement (Table 5).

DISCUSSION

We extracted the following five categories from qualitative analysis of the difficulties faced by psychologists: 'Hospital system', 'Psychologist role and specialization', 'Collaboration with other medical professionals', 'Specialized support provided by psychologists' and 'Stress faced by psychologists'. We will discuss each of these categories and examine an educational program for psychologists aimed at addressing these issues.

First, the 'Hospital system' category includes subcategories encompassing difficulties associated with 'problems related to the hospital organization' (e.g. lack of manpower and a full-time psychiatrist position), and 'psychologist working arrangements' (e.g. psychologists cannot work properly due to the part-time status). In the 'Psychologist role and specialization' category, subcategories include the 'ambiguity of the role expected of psychologists', as other medical professionals do not understand or have different expectations for the roles played by psychologists; 'problems arising because psychologist are not nationally licensed', leading to the inconsistent manner in which psychologists are treated and 'the lack of clarity regarding psychologist specialization' because other medical professionals do not understand psychologist specialization in cancer treatment, or psychologists do not know how to make other medical professionals understand their specialization. In examining the causes of these problems, the lack of certification by the

Table 3. Collaboration with other medical professionals

Subcategory	Examination
Problems with the method of requesting psychologist cooperation	Few requests for psychologists
	Other medical professionals turn to psychologists only after the patient's physical symptoms and psychological condition worsen
Problems related to the palliative care team	Insufficient communication within the palliative care team
	The palliative care team is not active enough
	Inability to function as a psychologist within the palliative care team
	Inability to cooperate smoothly with nurses
Problems of consultation and liaison work within the hospital	A lack of adequate communication with professionals of other medical professionals
	Trouble relating to other ward staff
	Professionals of other job types do not fully understand the psychologist's position and role
	I cannot smoothly provide information to patients due to inadequate skills of the psychologist
	Insufficient relations to psychiatrist
Communication problems between other medical professionals	Lack of communication between medical practitioners other than psychologist

Table 4. Specialized support provided by psychologists

Subcategory	Examination
Difficulty of interaction with patients and their families	Difficulty of handling patient/family aggression and dissatisfaction
	Struggles with resistance by patient/family toward interviews
	Difficulty interacting with patients suffering from severe physical pain
Inadequate provision of psychological support in cancer care	Difficulties in deciding how and when to provide this care
	Difficulties in setting the objectives and goals of psychological intervention
	Little knowledge about psychological changes in cancer patients
Problems related to death care	Mental shock towards patient death, inadequate death care
Lack of medical knowledge	Do not know how to enter information on medical charts
	Do not understand medical terminology
	Do not understand cancer treatment
Lack of psychiatric knowledge	Insufficient knowledge about drug therapy
	Insufficient knowledge about psychiatric symptoms
	I cannot perform assessment of psychiatric symptoms

national government has previously been identified as a contributing factor, alongside other weaknesses in the psychology education system (13). Due to the lack of state certification, psychologists participating in medical treatment are not fully covered by the medical insurance remuneration system (14). Consequently, psychologists working in the medical field are often left in a precarious position. It is likely that this lack of national certification also adds to the difficulty of other medical professionals understanding the area in which psychologists specialize. In fact, psychologists in countries such as Sweden, Australia, Korea and China are certified by the national government, while psychologists with Ph.D. degrees and intern training experience in the USA are certified by each state (6,7). Although these issues cannot be resolved immediately in Japan, we propose that a gradual resolution can be reached by clarifying the role psychologists play in medical treatment, particularly in cancer treatment. Furthermore, it was found that psychologists do not adequately understand their own area of specialization. In the present study, the average number of years (± SD) of clinical experience and medical experience in the free response group was 10.2 (± 8.8) and 9.1 (± 8.5), respectively, but the average number of years in cancer care was shorter, with 3.1 (± 3.3). Holland (15) reported that psychologists, traditionally trained to play a central role in the treatment of physically healthy individuals with psychological problems, faced the lack of a well-defined role in cancer care due to the absence of psychologically oriented peers, and a sense that 'one is an outsider working in someone else's specialty'. We think that psychologists who have less experience in cancer care confront similar situations in Japan. The 2012 Basic Plan for Cancer Control Measures states that psychooncologists and psychologists in cancer care should systematically receive education to provide psychological support for cancer patients and their families; however, no education system for psychologists in cancer care has yet been established in Japan. Furthermore, few studies have investigated the role of psychologists in hospices in Japan. Thus, the role and specialization of psychologist in cancer care is still unclear in Japan. In these scenarios, psychologists cannot expect other medical professionals to fully understand their field. This point also relates to the category of 'Psychologist's role and specialization' and 'Specialized support provided by psychologists', suggesting that specialized support provided by psychologists should be more firmly defined.

The 'Collaboration with other medical professionals' category includes four subcategories. The first subcategory concerns the 'problems with the method of requesting psychologist cooperation'. These problems arise because other medical

Table 5: Stress faced by psychologists

Subcategory	Examination
Psychologist's isolation and anxiety	An absence of people with whom the psychologist can consult at the workplace
	Discharging tasks alone put great strain on psychologists
	Insufficient support from professionals of other medical professionals
	Lack of complete confidence in duties performed as psychologist, no evidence for psychological treatment
Psychologist's internal conflicts	I cannot follow-up on patients who change hospitals or are discharged
	Struggle with aggression or dissatisfaction from patients
	I am unable to meet the demands of other medical professionals
Psychologist burnout and helplessness	I feel powerless and unrecognized by other medical professionals
	I feel powerless due to the inability to do anything for suffering patients
Psychologist self-improvement	Demand for study and training groups to be held in rural areas
	Demand for lectures tailored to participant's level (i.e. beginner or advanced)
	Demand to explore case studies in the cancer field
	Demand for a supervisor in cancer care and a place for psychologists to share information
	Demand for more reference materials about the role of psychologists in cancer care

professionals turn to psychologists only after the patient's physical symptoms and psychological condition worsen. The second subcategory includes 'problems related to the palliative care team' (e.g. problems due to insufficient communication within the palliative care team), and the third, the 'problems of consultation and liaison work within the hospital', which result from a lack of adequate communication with other medical professionals. The fourth category encompasses the 'problems of communication between other medical professionals', including the lack of communication between non-psychologist medical professionals. When considering communication problems in the medical treatment, the first issue is that psychologists must know a common language if communication is to be possible (16). Furthermore, psychologists' lack of medical knowledge has previously been identified by many physicians as contributing to problems in communication (9,10). An understanding of the content of other medical professionals' conversations and what they record in medical charts is necessary for communication between medical professionals in the medical field. In other words, psychologists should understand the specialization of other medical professionals, just as other medical professionals should understand the specialization of psychologists. Efforts to communicate with one another will lead to active and appropriate referrals to psychologists. Belar et al. (17) proposed that psychologists in the USA need to collaborate with other medical professionals in hospitals and must be knowledgeable regarding formal and informal medical cultures, norms, mores and practices in health-care settings. Similarly, we feel it necessary for psychologists in cancer care to gain the support of other medical professionals in order to acquire these skills and knowledge. To this end, psychologists should attend and actively participate in case conferences with other medical professionals. Other medical professionals should support their joining. There are also adverse effects that occur when psychologists insist on staying within the unique framework of psychology. For example, other medical professionals on palliative care teams have reported a problem in information sharing among psychologists working in cancer treatment, as they tend to keep information and cases to themselves (1). This may foster an image of psychologists as a secretive or solitary worker.

Matusno (18) has proposed the following five explanations for why psychologists cannot function effectively in the field of medical treatment, particularly in team-based medicine: (i) their lack of clinical experience in hospitals; (ii) their lack of basic medical education; (iii) their lack of being viewed as providers of therapy in the context of medical treatment; (iv) their lack of experience in team-based treatment and (v) their lack of knowledge on psychological techniques necessary in hospitals. The subcategories of problems listed under 'Collaboration with other medical professionals' are also linked to the points raised by Matusno (18). For these reasons, psychologists must acquire at least a minimal level of medical knowledge and understanding of cancer treatment. Furthermore, they require training through specific case studies in order to facilitate collaboration with other medical professionals.

In the 'Specialized support provided by psychologists' category, subcategories included the following: 'difficulty of interaction with patients and their families', which relates to how psychologists deal with emotions of aggression and dissatisfaction in patients and family members, as well as how they interact with patients suffering from severe physical pain; 'inadequate provision of psychological support in cancer care' (e.g. difficulties in setting the objectives and goals of psychological intervention, deciding how and when to provide this care); 'problems related to death care'; 'the lack of medical knowledge' and 'the lack of psychiatric knowledge'. The last two subcategories are related to the previously cited problems in collaboration with other medical professionals, but these issues are also fundamental in the specialized support that psychologists provide. Acquiring basic knowledge on medicine, cancer treatment and psychiatry is a necessary precondition for psychologists working in cancer treatment and is the major foundation of education programs for psychologists in cancer medicine (1).

On the other hand, the 'difficulty of interaction with patients and family', 'inadequate provision of psychological