

Health Care Providers' Perspectives on Providing End-Of-Life Psychiatric Care Between Cardiovascular and Oncological Hospitals: A Cross-Sectional Questionnaire Survey

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Abstract

Purpose

Psychological distress is a serious problem for patients with heart disease or cancer at the end of life. The aim of this study was to compare the barriers to providing end-of-life psychiatric care in cardiovascular compared to oncological settings.

Methods

In this cross-sectional questionnaire survey conducted in Japan, we mailed questionnaires to physicians and nurses in 347 oncological and 427 cardiovascular hospitals in March 2018 to assess health care providers' perspectives. First, we applied the Palliative Care Difficulties Scale and assessed end-of-life psychiatric care difficulties. Second, we asked about barriers to providing end-of-life psychiatric care in free description.

Results

A total of 224 oncological and 213 cardiovascular hospitals responded to the questionnaires. The mean scores of palliative and end-of-life psychiatric care difficulties showed no significant differences between oncological and cardiovascular hospitals. Eight barriers to providing end-of-life psychiatric care were identified and were based on patients' personal, interfamilial, clinicians' personal, clinician-patient communication, end-of-life care, psychiatric care, systematic or environmental, and disease-specific problems. In addition, health care providers in cardiovascular hospitals were found to have a significantly higher rate of disease-specific issues compared with oncological hospitals.

Conclusion

Both oncological and cardiovascular physicians and nurses have similar difficulties in providing end-of-life psychiatric care. However, health care providers of cardiovascular hospitals particularly experience heart disease-specific problems, such as unpredictability of prognosis or insufficiency of guideline development.

Introduction

Heart failure (HF) is a fatal, severe medical illness that can impose a serious burden on patients and their caregivers. The World Health Organization estimated the worldwide mortality from cardiovascular disease at 15.2 million in 2016 [1], making it the most common cause of death (40%) among middle-aged and older adults [2]. Despite the recent rapid progress in medical treatments, the median survival rate after patients' first hospitalization is low in severe HF (2.1 years) [3]. In addition, HF has inflicted a burden of \$180 million on the global health system [4].

Patients with advanced HF commonly experience psychological symptoms, the most common of which are depression and anxiety, as well as physical symptoms, such as dyspnea, pain, or fatigue [5, 6]. Severe clinical depression is diagnosed in 12 to 33% of all patients with heart disease [7, 8], and in 38 to 42% of those with severe HF featuring New York Heart Association class III-IV symptoms [9]. Among HF patients, 29% exhibit severe clinically significant anxiety symptoms, and 9% have anxiety disorders, including general anxiety disorders [6, 10]. In addition, psychological symptoms have a highly negative impact on the quality of life and are associated with poor treatment adherence, severe physical symptoms, long-term hospitalization, and a reduced survival rate [11]. Therefore, psychological symptoms, such as depression or anxiety, are particularly challenging problems for patients with end-stage HF [12, 13].

Psychiatric interventions are necessary for patients with depressive HF. However, there is inadequate evidence for the efficacy of pharmacological treatments, such as antidepressants, in patients with HF [14, 15], and psychiatric medication increases the risk of death among HF patients [16]. Nevertheless, psychological treatment has received attention among patients with HF in recent years, and cognitive behavioral therapy in particular has been shown to improve psychological symptoms [17, 18]. Relaxation, meditation, and mindfulness-based psychoeducation can also alleviate psychological distress [19, 20]. However, there is limited evidence and guidance on the efficacy of such psychiatric care among patients with terminal HF [21, 22].

In patients with end-stage cancer, psychiatric or psychological treatment can improve psychological distress [23–25]. Workshops or guidelines for oncologists can also enhance their practical skills in end-of-life psychiatric care [26, 27]. A comparison between patients with end-stage HF and those with end-stage cancer could provide useful insights into potential barriers to applying psychiatric care for affected individuals. In addition, no study has examined the barriers in psychiatric management instead of pain management in end-of-life patients using a qualitative bottom-up approach [28]. Moral distress in health care providers decreases their motivation, capacity, and communication, which in turn can have a negative impact on patients' psychological distress [29, 30].

The aims of this study were to identify the barriers to providing psychiatric care for end-of-life patients among health care providers, and to compare such barriers between cardiovascular and oncological hospitals.

Methods

Design and participants

This was a national cross-sectional survey conducted among Japanese health care providers in oncological and cardiovascular hospitals using self-completed questionnaires. We mailed the questionnaires to the chief physicians of respiratory and cardiovascular internal medicine of 347 designated cancer

hospitals and 427 ICD specialized hospitals, asking them to deliver the questionnaires directly to oncological and cardiovascular physicians and nurses in March 2018. Designated cancer hospitals, recommended by the prefectural governments, can provide high-quality cancer treatment guaranteed by the Ministry of Health, Labour and Welfare in Japan. They provide specialized cancer treatments, establish local cooperation systems for cancer treatments, and provide consultation, support, and information for cancer patients. Additionally, ICD specialized hospitals can operate implantation of implantable cardioverter-defibrillators (ICDs).

Ethics

Our study was approved without undergoing assessment by the institutional review board at the Tokyo Medical and Dental University in Japan, as it was an anonymized non-invasive self-completed questionnaire study for health care providers. However, all procedures were in accordance with the ethical standards of the responsible committees on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. All participating physicians and nurses were volunteers and were not provided with any incentive to participate. The anonymized questionnaires were individually returned from each health care provider and not specified by an individual person or facility.

Demographic and clinical characteristics

We collected demographic and clinical information from the self-completed questionnaires. First, we included the following data: sex, age, and medical license of the staff of each health care provider. Second, we included the following data: area (Hokkaido/Tohoku, Kanto/Koshinetsu, Chubu/Hokuriku, Kinki, Chugoku/Shikoku, and Kyushu/Okinawa area), hospital type (national medical center, academic medical center, general hospital except academic medical center, specialized hospital), the number of hospital beds, and the presence of a palliative care unit, palliative care team, liaison psychiatry team, palliative care physicians, psychiatrists, and psychologists at hospitals.

Outcome measures

Difficulty of providing palliative care

The Palliative Care Difficulties Scale, a 15-item self-reported scale, was developed in Japan [31]. It is a 4-point Likert-type scale ranging from 0 to 3 (overall score range: 0–42). The scale contains five factors with three items each: (1) alleviating symptoms, (2) expert support, (3) multidisciplinary communication, (4) communication with patient/family, and (5) community coordination. The reliability and validity of this measure were sufficiently supported in an earlier study [31].

Difficulty of providing end-of-life psychiatric care

We developed the following question for assessing the difficulty of providing end-of-life psychiatric care: “Do you feel challenged to provide psychiatric care for patients at their end of life?”; possible answers were “yes” or “no.”

Barriers to providing end-of-life psychiatric care

To identify barriers to providing end-of-life psychological care, we asked participants who answered “yes” in the above question: “Why do you feel challenged to provide psychological care for patients at their end of life?” and asked to submit written answers in free description.

Qualitative analyses

Content analysis was used to analyze free description data. Content analysis is an objective and systematic procedure used to draw conclusions by creating categories of data from verbatim or unstructured data [32]. We conducted a quantitative content analysis according to previous studies in palliative care settings [33, 34]. Our content analysis procedure was conducted as follows: (1) all text data were divided into thematic units, which are the units of words with one logical meaning; (2) two researchers, a clinical psychologist and a cardiovascular nurse (IK and MS, respectively) extracted all statements from the free descriptions related to the study topic, such as the barriers to providing end-of-life psychiatric care; (3) a clinical psychologist (IK), a cardiovascular nurse (MS), and two psychiatrists in the palliative care team (ME and TT) carefully conceptualized similarities and differences in the content, and defined all categories; and (4) two coders, a student of psychology and a psychiatric clinical nurse, independently determined how each thematic unit that was identified corresponded with any category. The concordance rate and kappa coefficient of the determinations of the categories were used as reliability indicators. The kappa coefficient was calculated using 20% of the data and random sampling was conducted based on the data from a standard set derived from a previous study, with more than 10% or 50 units of data [35, 36].

Statistical analyses

First, we summarized the characteristics of the participants and hospitals using standard descriptive statistics. Second, the mean difference in difficulties in providing palliative care was compared between oncological and cardiovascular hospitals using a *t* test, and the frequency of difficulties in providing end-of-life psychiatric care was compared between oncological and cardiovascular hospitals using a χ^2 test. Third, the frequency of the thematic units that were categorized in the above content analysis was compared between health care providers in oncological and cardiovascular hospitals using a χ^2 test. The significance level was set at 5%. All data were analyzed using IBM SPSS Statistics for Windows, version 24 (IBM Corp., NY, USA).

Results

Demographic and clinical characteristics

Of the 347 oncological and 427 cardiovascular hospitals, 130 oncological physicians (37.5%), 94 oncological nurses (27.1%), 120 cardiovascular physicians (28.1%), and 93 cardiovascular nurses (21.8%) were included in the analysis (Fig. 1). The characteristics of the study participants and hospitals are listed in Table 1. More than 90% of physicians were specialized, such as lung cancer or cardiovascular specialists, and almost half of the nurses were certified in a special field, including cancer nursing or palliative care. The sex ratio (men:women) was 1.4:1. In both cancer and cardiovascular hospitals, more than 90% were general hospitals, almost 60% were large-scale facilities (≥ 500 hospital beds), more than 80% had palliative care teams, and almost 70% had psychiatric or psychological care specialists.

Table 1
Characteristics of participants and hospitals

	Oncological hospitals (<i>n</i> = 224)	Cardiovascular hospitals (<i>n</i> = 213)
Licenses		
Physicians	130 (58.0)	120 (56.3)
- Specialist	122 (54.5)	116 (54.5)
Nurses	94 (42.0)	93 (43.7)
- Certified nurse specialist	3 (1.3)	4 (1.9)
- Certified nurse	48 (21.4)	28 (13.1)
Sex		
Men	123 (55.9)	123 (58.6)
Women	97 (44.1)	87 (41.4)
Age		
21–30 years old	5 (2.2)	5 (2.4)
31–40 years old	43 (19.3)	50 (23.7)
41–50 years old	82 (36.8)	86 (40.8)
51–60 years old	81 (36.3)	66 (31.3)
>61 years old	12 (5.4)	4 (1.9)
Area		
Hokkaido / Tohoku area	32 (15.2)	31 (15.3)
Kanto / Koshinetsu area (except for Tokyo)	69 (32.9)	56 (27.6)
Tokyo	17 (8.1)	16 (7.9)
Chubu / Hokuriku area	12 (5.7)	12 (5.9)
Kinki area	27 (12.9)	33 (16.3)
Chugoku / Shikoku area	33 (15.7)	24 (11.8)
Kyushu / Okinawa area	20 (9.5)	31 (15.3)
Hospital type		
National medical center	1 (0.5)	3 (1.4)
Academic medical center	51 (23.6)	60 (28.7)
General hospital except academic medical center	157 (72.7)	125 (59.8)
Specialized hospital	7 (3.2)	21 (10.0)
Number of hospital beds		
<300	8 (3.7)	23 (10.8)
≥300, <500	81 (37.1)	64 (30.1)
≥500	129 (59.2)	126 (59.2)
Palliative care unit in hospital		
Yes	67 (30.2)	59 (27.7)
No	155 (69.8)	150 (70.4)
Palliative care team in hospital		
Yes	223 (100.0)	185 (87.3)
No	0 (0.0)	22 (10.4)
Liaison psychiatry team in hospital		

	Oncological hospitals (<i>n</i> = 224)	Cardiovascular hospitals (<i>n</i> = 213)
Yes	89 (40.5)	88 (41.7)
No	114 (51.8)	106 (50.2)
Palliative care physicians in hospital		
Yes	166 (75.5)	144 (67.6)
No	53 (24.1)	60 (28.2)
Psychiatrists in hospital		
Yes	177 (79.4)	165 (77.5)
No	44 (19.7)	47 (22.1)
Clinical psychologists in hospital		
Yes	161 (73.2)	140 (65.7)
No	40 (18.2)	59 (27.7)

The difficulty of providing end-of-life palliative and psychiatric care

We found that the Palliative Care Difficulties Scale scores were significantly higher in health care providers among cardiovascular hospitals compared with oncological hospitals for “alleviating symptoms” and “expert support” ($F[423] = 8.63, p = 0.00$ and $F[414] = 18.96, p = 0.00$, respectively), whereas no significant differences were found for any other factor ($F[426] = 3.50, p = 0.06$ for multidisciplinary communication; $F[424] = 2.82, p = 0.09$ for communication with patient/family; $F[423] = 1.11, p = 0.29$ for community coordination) (Fig. 2).

The frequency of difficulties in providing end-of-life psychiatric care according to the χ^2 test and exact probability test is shown in Fig. 3. A total of 135 (62.2%) oncological and 125 (59.8%) cardiovascular health care providers had difficulties in providing end-of-life psychiatric care. There was no significant difference in the frequency of difficulties between oncological and cardiovascular hospitals ($\chi^2[1] = 0.26, p = 0.62$).

The barrier of providing end-of-life psychiatric care using qualitative methods

We extracted 52 attributes from the content analysis, 40 of which were classified by the semantic content into “patients’ personal problems,” “family members’ problems,” “professionals’ personal problems,” “communication problems between professionals and patients,” “problems specific to end-of-life care,” “problems specific to psychiatric care,” “problems of institution or system,” and “problems specific to non-cancer patients” (Table 2). The Kappa coefficient derived by the two independent coders was 0.54 in the random 20% data of this study.

Table 2
Barriers to providing end-of-life psychiatric care

	Total		Oncological hospitals (n = 117)		Cardiovascular hospitals (n = 106)	
	n	(%)	n	(%)	n	(%)
A: Patients' personal problems						
1. Accepting reality and physical condition (A5)	14	(6.3)	8	(6.8)	6	(5.7)
2. Lack of emotion expression (A8)	12	(5.4)	6	(5.1)	6	(5.7)
3. Severe depression or suicide ideation (A7)	5	(2.2)	2	(1.7)	3	(2.8)
4. Problems of cognitive function or comprehension (A4)	8	(3.6)	6	(5.1)	2	(1.9)
5. Depression (A2)	8	(3.6)	4	(3.4)	4	(3.8)
6. Refusal of psychiatric care (A6)	7	(3.1)	4	(3.4)	3	(2.8)
7. Anxiety or embarrassment (A1)	5	(2.2)	5	(4.3)	0	(0.0)
8. Problems specific to young adults (A9)	4	(1.8)	3	(2.6)	1	(0.9)
9. Aggression (A3)	3	(1.3)	2	(1.7)	1	(0.9)
B: Family members' problems						
10. Lack of family support (B2)	13	(5.8)	7	(6.0)	6	(5.7)
11. Accepting reality among family members (B1)	13	(5.8)	8	(6.8)	5	(4.7)
12. Differences in opinions or comprehension among family members (B4)	10	(4.5)	9	(7.7)	1	(0.9)
13. Problems of family relationship (B3)	3	(1.3)	1	(0.9)	2	(1.9)
C: Professionals' personal problems						
14. Problems of time and place (C1)	33	(14.8)	18	(15.4)	15	(14.2)
15. Lack of self-confidence in one's skills in psychiatric care (C2)	20	(9.0)	9	(7.7)	11	(10.4)
16. Problems related to inter-professional team work (C5)	14	(6.3)	8	(6.8)	6	(5.7)
17. Ability differences between health care providers (C4)	9	(4.0)	6	(5.1)	3	(2.8)
18. Psychological burden in health care providers (C3)	3	(1.3)	1	(0.9)	2	(1.9)
D: Communication problems between professionals and patients						
19. Lack of trust between professionals and patients (D2)	7	(3.1)	5	(4.3)	2	(1.9)
20. Differences in opinions or comprehension in professionals vs. patients (D1)	4	(1.8)	3	(2.6)	1	(0.9)
E: Problems specific to end-of-life care						
21. Difficulty of psychological care for patients to whom the "bad news" were not disclosed (E5)	10	(4.5)	5	(4.3)	5	(4.7)
22. Difficulty of psychological care after disclosure about "bad news" (E4)	10	(4.5)	4	(3.4)	6	(5.7)
23. Circumstances cannot meet with the patients' wishes (E7)	6	(2.7)	1	(0.9)	5	(4.7)
24. Problems of acute deterioration (E2)	5	(2.2)	2	(1.7)	3	(2.8)
25. Problems of spiritual pain and acceptance of death (E3)	4	(1.8)	2	(1.7)	2	(1.9)
26. Difficulty of psychological care for patients to whom the "bad news" were disclosed at a late time point (E6)	2	(0.9)	0	(0.0)	2	(1.9)
27. Problems of physical pain (E1)	2	(0.9)	1	(0.9)	1	(0.9)
F: Problems specific to psychiatric care						
28. Necessity of individual care for each patient (F2)	14	(6.3)	7	(6.0)	7	(6.6)
29. Difficulty of psychiatric assessment and intervention (F1)	7	(3.1)	3	(2.6)	4	(3.8)
30. Lack of robust policy or correct answer (F3)	2	(0.9)	1	(0.9)	1	(0.9)
G: Problems of institution or system						
31. Lack of professional team or health care providers (G1)	12	(5.4)	4	(3.4)	8	(7.5)

	Total		Oncological hospitals (n = 117)		Cardiovascular hospitals (n = 106)	
32. Lack of training system for psychiatric care (G3)	7	(3.1)	1	(0.9)	6	(5.7)
33. Short-handed conditions (G2)	6	(2.7)	5	(4.3)	1	(0.9)
34. Difficulty of compatibility with outpatient service (G4)	5	(2.2)	5	(4.3)	0	(0.0)
35. Difficulty of participating in informed consent (G5)	4	(1.8)	3	(2.6)	1	(0.9)
H: Problems specific to non-cancer patients						
36. Difficulty of evaluating prognostic prediction in non-cancer patients (H2)	10	(4.5)	0	(0.0)	10	(9.4)
37. Lack of practice guidelines for non-cancer patients (H1)	4	(1.8)	0	(0.0)	4	(3.8)
38. Lack of understanding about palliative care for non-cancer patients in patients or family members (H3)	3	(1.3)	0	(0.0)	3	(2.8)
39. Lack of experience in palliative care for non-cancer patients in health care providers (H4)	4	(1.8)	1	(0.9)	3	(2.8)
40. Lack of professional team or health care providers who specialize in palliative care for non-cancer patients (H5)	3	(1.3)	0	(0.0)	3	(2.8)

The frequency of barriers to providing psychiatric end-of-life care is shown in Table 3. We found that problems specific to non-cancer patients occurred more frequently in health care providers among cardiovascular than oncological hospitals ($\chi^2 [1] = 22.475, p = 0.00$). There was no significant difference between the frequency of any other barrier between health care providers among oncological and cardiovascular hospitals.

Table 3
Differences in barriers to providing end-of-life psychiatric care between oncological and cardiovascular hospitals

	Total		Oncological hospitals (n = 117)		Cardiovascular hospitals (n = 106)		χ^2	p
	n	(%)	n	(%)	n	(%)		
A: Patients' personal problems	56	(25.1)	33	(28.2)	23	(21.7)	1.25	0.26
B: Family members' problems	38	(17.0)	24	(20.5)	14	(13.2)	2.10	0.15
C: Professionals' personal problems	65	(29.1)	30	(25.6)	35	(33.0)	1.47	0.23
D: Communication problems between professionals and patients	11	(4.9)	8	(6.8)	3	(2.8)	1.91	0.17
E: Problems specific to end-of-life care	34	(15.2)	13	(11.1)	21	(19.8)	3.26	0.07
F: Problems specific to psychiatric care	23	(10.3)	11	(9.4)	12	(11.3)	.22	0.64
G: Problems of institution or system	32	(14.3)	17	(14.5)	15	(14.2)	.01	0.94
H: Problems specific to non-cancer patients	22	(9.9)	1	(0.9)	21	(19.8)	22.48	0.00*

*p < 0.05

Discussion

This is the first study that investigated the barriers to providing end-of-life psychiatric care. Our results yielded two major findings. First, the health care providers included in this study were found to have eight barriers to providing psychiatric care: problems concerning the (1) patients, (2) family members, and (3) professionals, (4) difficulties in the communication amongst professionals, difficulties specific to (5) end-of-life care, (6) psychiatric care, or (7) non-cancer patients, and (8) issues related to the institution or system. Second, cardiovascular health care providers have psychiatric care problems specific to non-cancer patients, such as obtaining professional support, useful guidelines, or training opportunities. This study was useful in exploring solutions for providing sufficient psychiatric care for end-stage HF patients due to the extraction of barriers using a bottom-up qualitative approach.

Our results indicate that there are three challenges in providing psychiatric care to end-of-life patients. First, cardiovascular health care providers find it particularly difficult to improve their knowledge and skills in psychiatric assessment and treatment of psychological as well as cardiac symptoms. In particular, depression, in addition to fatigue or pain, is one of the most common symptoms and imposes a heavy burden on patients with advanced HF [12, 13, 37]. Some clinical practice guidelines on HF emphasize the need for psychiatric care for depressive HF patients as part of symptom management in Western countries [5, 38]. However, even these guidelines have insufficient information about a specific psychiatric assessment and treatment for patients with HF. Participants in this study also described that they had little access to improve their knowledge and skills in psychiatric care. In cancer patients, lack of knowledge and training is a barrier to providing psychiatric care [39], and therefore some Japanese academic societies have held seminars or workshops to

promote psychiatric care knowledge for oncologists or any other health care providers in the last few decades. Taken together, we recommend an expansion of the training system and provision of detailed guidelines as a way to provide access to methods of psychiatric assessment and treatment for patients with advanced HF.

In addition, physical symptom management was also identified as a difficult problem for cardiovascular professionals compared with oncological colleagues in this study. Interventions directed at alleviating physical symptoms related to HF can lead to a reduction in psychological symptoms in palliative care [40]. In the future, we should develop a training system for end-of-life care professionals in parallel with both physical and psychiatric care. □

Second, many health care providers felt that it was difficult to coordinate professional-patient relationships in both cardiovascular and oncological settings. Interventions to enhance communication between professionals and patients can improve the psychological well-being [41]. The professional-patient relationship and communication are also important for the quality and outcome of medical treatment [42, 43]. Particularly in palliative settings, a lack of communication between professionals and patients can lead to the inhibition of critical decisions such as ICD deactivations [44, 45]. Practically, general education and specialized education can improve communication skills among health care providers and facilitate professional-patient communication [46, 47]. Advanced care planning can also encourage effective communication between professionals and patients with HF [48, 49]. Therefore, we conclude that a useful tool or training system for improving communication skills as well as psychiatric care skills among health care providers could enhance end-of-life care in cardiovascular settings.

Third, professionals' personal psychological or physical distress can be a barrier to providing psychiatric care. Professional participants in this study described that many cardiovascular and oncological hospitals do not have sufficient staff and are consequently overwhelmed by the workload, leading to unsatisfactory psychiatric care for palliative patients. Health care providers also feel unable to provide sufficient spiritual psychiatric care for end-of-life patients [29]. Reducing the workload and ensuring adequate time management for health care providers remain critical goals in modern Japanese medical settings.

Limitations

Our study has two major limitations. First, recall bias may have occurred because of the self-reported nature of the questionnaires. However, we conducted a content analysis by two researchers independently and ensured objectivity. Second, selection bias might have occurred because of the implementation of a national study exclusively in Japan. Therefore, future studies investigating the same issues in other countries will be of importance to confirm our findings.

Conclusion

Our study suggests that health care providers in cardiovascular hospitals, in contrast to oncological counterparts, experience problems in obtaining useful guidelines or training opportunities. We should provide continuous educational opportunities for health care providers involved with psychiatric and palliative care for patients with HF. However, our study also indicates that both oncological and cardiovascular health care providers experience difficulties in providing end-of-life psychiatric care, which stem from patients' or health care providers' personal problems, among others. Therefore, we should also develop strategies to overcome not only the understaffing situation in medical services but also a lack of professionals' psychiatric care skills.

Declarations

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Competing Interests

IK is an advisor for personal health care services by Clinical Study Support, Inc. FY received research grants from the Murata Science Foundation. TH is an advisor of a clinical trial by Taisho Pharmaceutical Holdings and a committee member of the Medical Research Ethics Committee of the Nikon Corporation and the Japan Aerospace Exploration Agency. MS, CH, IH, MH, TT, and ME have no competing interests to report.

Availability of data and materials

The datasets analyzed during the current study are available from the corresponding author upon reasonable request.

Code availability

Not applicable

Authors' contributions

IK, MS, and ME conceptualized this study. IK curated the data. IK, MS, and IH conducted the formal analyses. IK and ME acquired the funding. IK conducted the study, designed the study methodology, oversaw the project administration, obtained the study's resources, and operated the software. CH supervised the qualitative analyses. TH and TT supervised the study. IK validated the study results, created the visualizations, and wrote the original draft. MS, CH, IH, FY, MH, TH, TT, and ME reviewed and edited the draft. All authors read and approved the final manuscript.

Ethics approval

Our study was approved without undergoing assessment by the institutional review board at the Tokyo Medical and Dental University in Japan, as it was an anonymized non-invasive self-completed questionnaire study for health care providers. However, all procedures were in accordance with the ethical standards of the responsible committees on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000.

Consent to participate

Not applicable

Consent for publication

Not applicable

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Figures

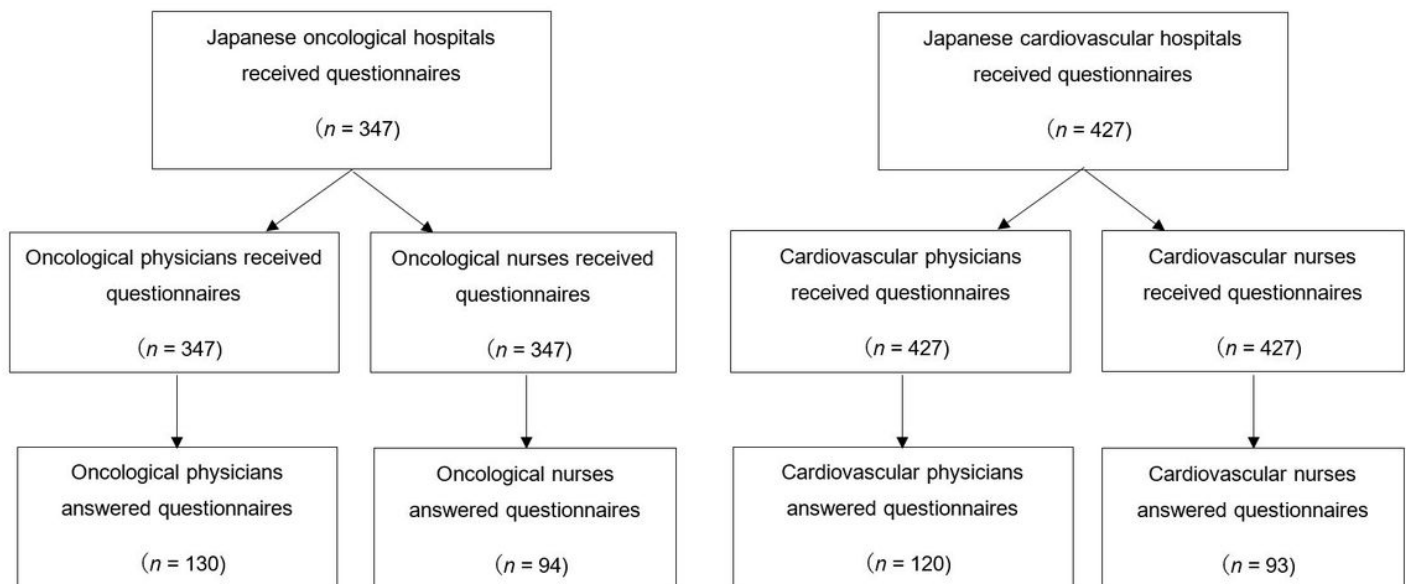


Figure 1

Flow diagram of participants

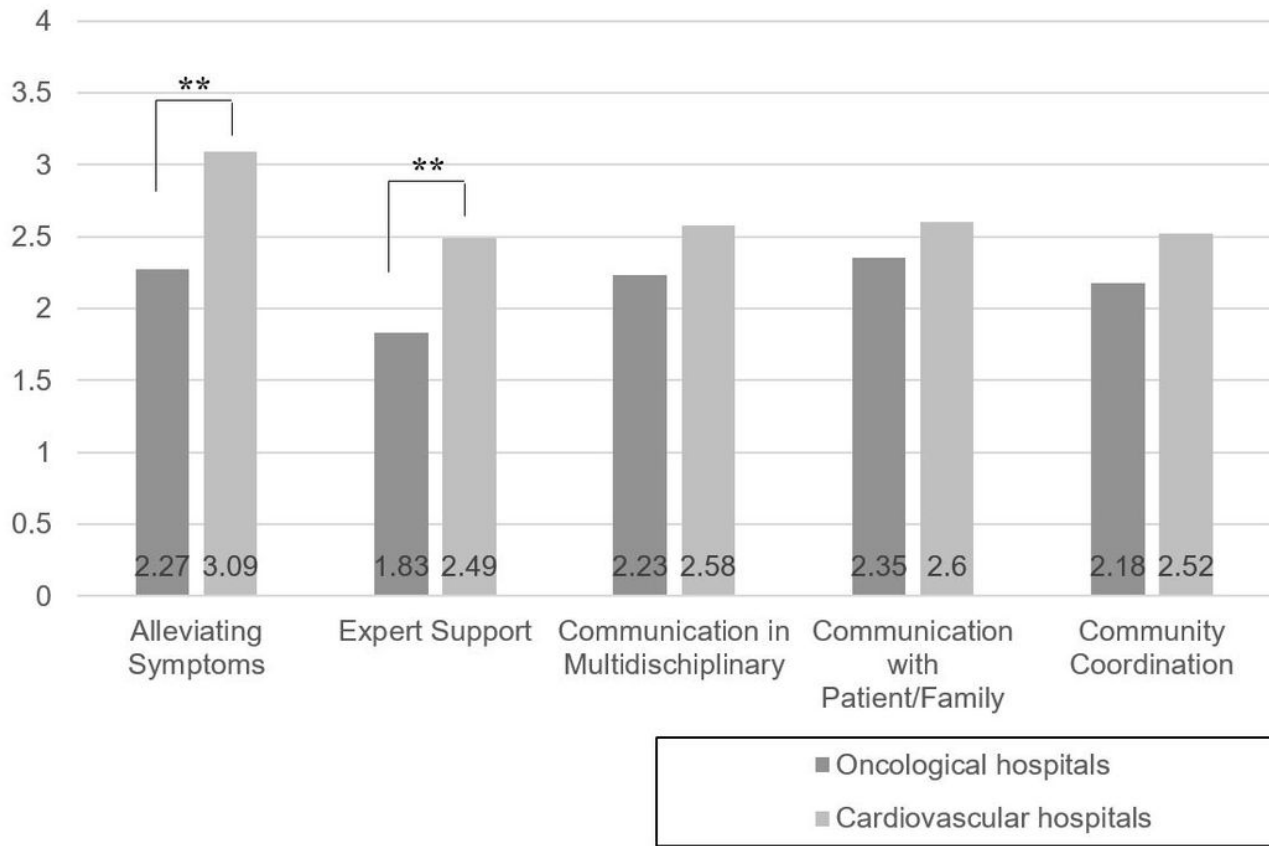


Figure 2

Difficulty of providing palliative care (scores)

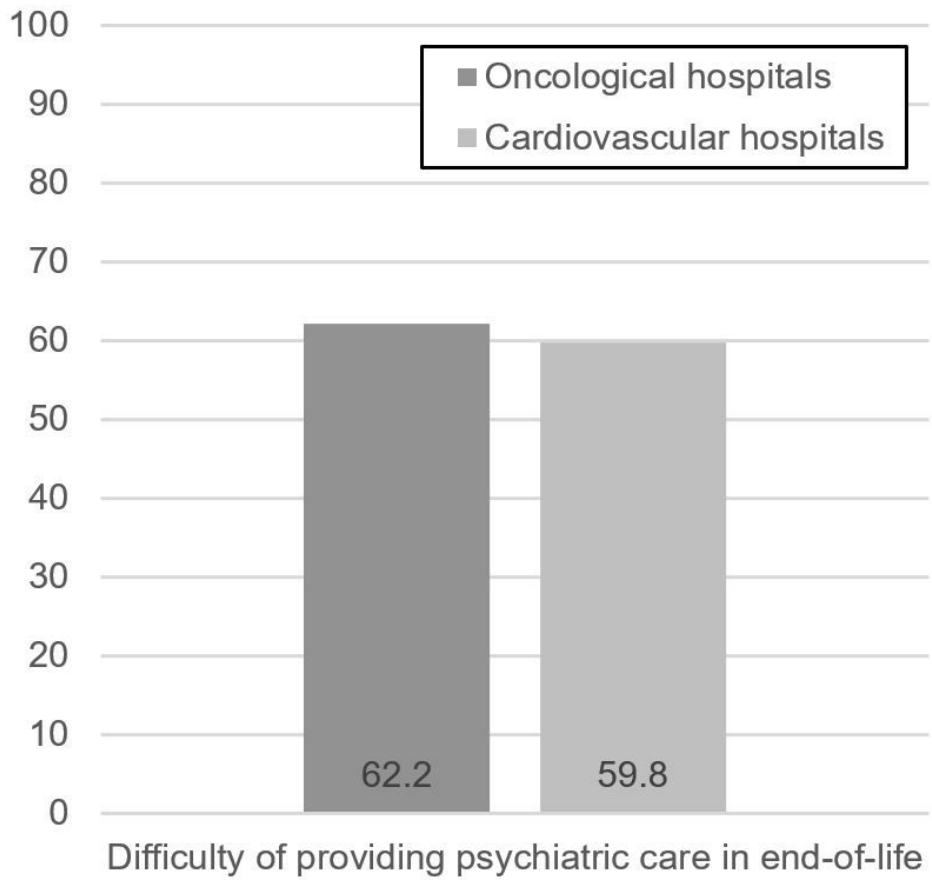


Figure 3

Difficulty of providing end-of-life psychiatric care (%)