

Peer Review File

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Reviewer A

In background, strong evidence should be added. For example, in the sentence “because most people die in hospitals” numbers or percentage of hospital death should be presented, and resource or citation should be added to make the data stronger.

Reply 1:

We have modified our text, as advised. (See pages 2, lines 59-66 in the Background section of the Introduction.) Note that we have added seven new references. Four of these references were published within about a year, i.e., in 2023 or 2024.

Changes in the text:

Hospital-based specialized palliative care teams (HSPC) were developed for patients with palliative care needs and their families with a focus on relieving suffering and improving the quality of life (QoL) (1). Despite the decline in hospital deaths throughout Japan after 2019, when COVID-19 expanded, it is important to consider the needs for adequate HSPC given the high rates of hospital deaths among those aged 65 years and older, which can reach as high as 67.8% (2). Global estimates show that the most rapid increases in palliative care needs will occur among low-income countries, among people over age 70 years, and among people with dementia (3). Moreover, HSPC has been shown to provide modest gains in patient outcomes (4), such as symptom burden (5), health-related QoL (HRQoL) (6), satisfaction with care (7), and death at the patient’s preferred location (8), compared with usual care. Decision support and advance care planning are also noted among the needs from HSPC (1,9).

In background, more literature reviewed should be added. As this study has 3 objectives: 1) to compare the prevalence of symptom between patients with and without cancer and to explore changes in symptom intensity after palliative care consultation in patients with noncancer disease, 2) to determine factors related to ethics support, and 3) to compare the intensity of each request between a certified nurse specialist in gerontological nursing and a certified nurse in palliative care in the team. More information and rationality are needed to back up the need to study objective # 2 (to determine factors related to ethics support).

Reply 2:

We have modified our text, as advised. (See pages 3, lines 67-84 in the Rationale and knowledge gap of the Introduction.) Note that we have added eight new references. Seven of these references were published within about one year, i.e., in 2023 or 2024.

Changes in the text:

Globally, few studies have focused on the impact of HSPC for patients with advanced noncancer illnesses cared for within general hospital wards and the intensive care unit (10-13). Despite palliative care being noted as relevant and important for patients with dementia and chronic advanced respiratory illnesses, involvements of HSPC remains low (14-16). Although nearly 70% of deaths in Japan and South Korea occur in hospitals, only <30% of deaths in the Netherlands and Norway transpire in hospitals, suggesting large differences between countries (17). Despite the decline in hospital deaths throughout Japan after 2019, the rate of hospital deaths among those aged 65 years and older has

remained quite high at 67.8% (2). Very few studies on optimal HSPC have been conducted in this different health care settings, including differences in accessibility to palliative care and differences in mortality rates between countries.

An indicator for assessing the activities of HSPC for patients with noncancer diseases is the Support Team Assessment Schedule (STAS) (18-21), a previous version of the Integrated Palliative Care Outcome Scale (IPOS) (22-23). Most palliative care studies conducted using the STAS as an indicator have been conducted on patients with cancer, and only a few reports have been conducted on patients with noncancer diseases (24). Both the STAS and IPOS can be used to assess symptom management, the patient's and family's decision-making capacity, and the presence of a patient advocate. Although the STAS is a tool used by others to conduct an assessment, the IPOS is a tool for self-assessment but can also be used by others, such as when patients lack decision-making capacity.

Integrating palliative care into the health care system is an ethical imperative (3). In fact, the palliative care model has been reported to reduce the selection of aggressive treatment within 30 days prior to death among patients with renal failure, suggesting that such a model possesses an ethics support function (25). Japanese policymakers have hoped to create a model for ethics consultation that can aid in medical decision-making for hospitalized patients without relatives (26). However, medical professionals in the field have faced several problems, such as how to make a request and what kind of content to include in an ethics consultation (27). Studies in other countries have revealed that some hospital palliative care teams provide ethics support for treatment selection and discontinuation (28). The Japanese Ministry of Health, Labor and Welfare and the Japan Geriatrics Society have stated the importance of ethics support in decision support, especially in cases requiring complex decision-making (29,30). There are no Japanese papers on the ethics support implemented by HSPC for patients with noncancer diseases.

There is an ongoing debate as to which area of professionally educated nurses should be included in the HSPC (1). For instance, in the paper by Bajwah et al., studies that include certified experts in palliative care and those that are unclear about training of health care providers in palliative care are discussed separately (1). Moreover, evidence shows that better palliative care is provided to elderly heart failure patients with high palliative care needs when certified nurse specialists in both gerontology and chronic heart failure are involved (31). Estimates through 2060 indicate that low-income countries, the elderly, and patients with dementia will have the fastest growing burden of health-related suffering and the greatest need for integrating palliative care into their health care systems (3). Considering the association between palliative care utilization and cognitive dysfunction (32), the role of nurses in assessing the palliative care needs of persons with dementia has been discussed (33), with studies also looking into the integration of palliative and geriatric care (7). These discussions emphasize the importance of discussing the expertise of multiple professions in HSPC, especially that of nurses.

In Japan, although HSPC are active, they still focus mainly on patients with cancer. The percentage of noncancer diseases in the HSPC registry of the Japanese Society of Palliative Medicine was 5.3% (n = 104,331) (34). Compared to the rest of the world, Japan has developed a model of palliative care that is hospital- and cancer patient-centered. In recent years, the setting of palliative care has expanded from hospitals to homes and elderly care facilities, and the target diseases of palliative care have expanded from cancer to heart failure. However, the role and membership of the HSPC as an optimal model of care has still been the subject of debate.

Operational definitions regarding ethics support and intensity of each request should be added.

Reply 3:

We have modified our text, as advised. (See pages 4, lines 119-123 in the Definition section of the Methods.)

We also took the reviewer's advice and changed from "intensity of each request" to "percentage of each request" throughout our paper.

Changes in the text:

Definition of HSPC

We operationally defined the HSPC as a multidisciplinary team that consults with and advises health care providers on palliative care for hospitalized patients and their families, with reference to Bajwah et al (1). In this study, we did not include outpatient services or outreach services among the services performed by the HSPC.

Definition of HSPC, **ethics support, and request**

We operationally defined "HSPC" as a multidisciplinary team that consults with and advises health care providers on palliative care for hospitalized patients and their families (1). In this study, we did not include outpatient services or outreach services among the services performed by the HSPC.

"Ethics support" was operationally defined as helping patients and their families make complex decisions, whereas "request" was operationally defined as an order placed by patients and their families to the HSPC through their attending physicians or ward nurses in the electronic medical record.

The following nine "requests" were set by default in the electronic medical records: 1) physical pain, 2) psychological pain, 3) family care, 4) social pain, 5) ethics support, 6) spiritual pain, 7) nutritional support, 8) medications, and 9) rehabilitation. Patients and their families could select any of them through their attending physicians or ward nurses.

The manuscript should be edited, English written should be re-checked.

Reply 4:

We have re-edited this manuscript with the advice of reviewers. We also rechecked the English language expressions with the assistance of an English editing specialist.

Changes in the text:

Would you please take a look at this entire manuscript, especially the text with the background highlighted in yellow.

In discussion, for each part of the results, more literature review is needed to discuss it more clearly.

Reply 5:

We have rewritten lines 263-315, as advised. (See pages 7, lines 263-315 in the Paragraph 2-6 of the Discussion.) Note that we have added three new references. All of these references were published within about one year, i.e., in 2023 or 2024.

Changes in the text:

Comparison with similar research on symptom management

The first crucial finding of this study was that patients with noncancer diseases also experienced suffering. Rojas-Concha et al. also showed that the prevalence of reported symptoms did not significantly differ between noncancer patients receiving specialized palliative care and cancer patients (40). Although all similar reports indicate that the distressing symptoms experienced by noncancer patients are substantial (41,42), the types of distressing symptoms vary from one study to another (43). In addition, very few studies have used the STAS for assessment, and the only reports in Japan with

large enough sample sizes have been on patients with cancer (44). Conversely, our study noted that patients with noncancer diseases suffer from pain, dyspnea, sputum accumulation, and anorexia, which occur in >10% of the cases. These results were consistent with those reported by Suhair et al. (45). Despite this discussion of palliative care needs for patients with noncancer diseases, the use of specialized palliative care remains limited worldwide (46). Considering the low access to palliative care, we propose the development of an international consensus on referral criteria for older adults with noncancer to ensure access to HSPC (47). The problem of low access to HSPC is similarly prevalent in Japan, with estimates showing that noncancer diseases account for only 5.3% (n = 104,331) of the HSPC registry of the Japanese Society of Palliative Medicine (34). This finding highlights the need for an approach that ensures HSPC access among patients with noncancer diseases in Japan. The current study, in which 47.3% of all requests were about patients with noncancer diseases, will certainly have a significant impact on the future activities of the HSPC in Japan.

Comparison with similar research on ethics support

The second crucial finding of this study was the identification of the needs of ethics support in HSPC, particularly for patients with noncancer diseases and dementia. Previous studies have reported that palliative care specialists implement ethics support; however, there are few reports of HSPC that implement ethics support worldwide (28), and none in Japan. There has also been talk of the importance of education in ethics support in palliative care specialists (48) or HSPC (49). By including noncancer diseases, including dementia, in the target population of HSPC, we have an opportunity for practical education in ethics support. To date, Japanese papers have continued to point out the need for ethics support, especially in medical decision-making for people without relatives, and the problem of access to ethics support models; however, no studies have released findings on ethics support provided by HSPC (26, 27). Our study added to the findings that people with noncancer diseases, particularly those with dementia, those with impaired decision-making capacity, and those lacking advocates, had the needs for ethics support according to the results presented in Table 5. We believe that HSPC not only has ethics support needs but also its educational needs.

Comparison with similar research on certified nurse specialists in gerontological nursing

The third, particularly interesting, finding of this study was that different expertise of the nurses were related to the content of consultations. Our study added to the findings regarding the expertise of nurses in an HSPC. The nurse, as an intermediary, has the role of facilitating decision support within the team (50). However, although nurses are key members of interdisciplinary geriatric consultation teams, their role is not always clear (51). In addition, nurses are confident in their ability to manage symptoms of patients with noncancer diseases, but not necessarily in their ability to manage the human aspects of these patients, and thereby, they require education (52). Thus, a certified nurse specialist in gerontological nursing as key members of the HSPC might be expected to facilitate decision support within the HSPC, serve as ethics support in one area of decision support, and facilitate practical education on ethics support in palliative care for patients with noncancer diseases.

Certified nurses in palliative care have been considered as the standard for nurses as HSPC members in Japan (35). In recent years, palliative care for heart failure has been recognized in Japan, with additional reimbursement; however, care provided by certified nurses in chronic heart failure nursing differs from that provided by certified nurses in palliative care to patients and their families, and these nurses do not collaborate with each other (53). Certified nurses in chronic heart failure nursing might be more desirable to be included in the HSPC. Currently in Japan, palliative care for dementia is not recognized as a system, with no additional reimbursement. Certified nurse specialists in gerontological nursing might be more suitable to be included in the HSPC, because, as our research has shown, a certified nurse specialist in gerontological nursing and a certified nurse in palliative care might have different

needs for patient and family care. **The integration of palliative and geriatric care has been reported to contribute to patient satisfaction, with one such model having been demonstrated one herein (7).**

Additionally, it was interesting to note that the logistic regression analysis showed that the patient's STAS score of 9 and the family's STAS score of 8 influenced the request for ethics support. A STAS score of 9 means that patient lacks decision-making capacity. A STAS score of 8 means that no family member advocates on behalf of the patient's wishes. To the best of our knowledge, this finding has not been reported before. Moreover, we added new findings. The Japanese Ministry of Health, Labour, and Welfare's guidelines **(30)** on the decision-making process in end-of-life care state that, in such cases, the medical care team should support the decision-making process, focusing on the patients' prior wishes, estimated wishes, or best interest.

This study reported 11 limitations. Please reconsider, more limitations reflect more weak points of the research design.

Reply 6:

We have modified, as advised. (See pages 8, lines 330-369 in the Limitations of the Discussion.)

Changes in the text:

Limitations

There are **four** limitations of this study. First, our study utilized **a retrospective design**. Second, in our study, **one patient had multiple diagnoses**. Third, the STAS is an evaluation by others. The IPOS **(22,23)**, including self-administered evaluation by the patient, is used worldwide as a successor to the STAS. However, when we implemented the STAS in our electronic health record in 2011, the IPOS had not been tested for reliability and validity in Japanese. **Fourth**, our center is a national center for dementia and geriatric care; thus, our findings are not necessarily generalizable.

Reviewer B

I think this is a significant study and provides really helpful data to inform practice, policy and future research. However, there are a number of areas that need to be strengthened to enable this to be ready for publication. Also, some sentences need a review for English grammar. I have made a number of comments and suggestions below for your consideration. All the best as you progress this work.

Reply 1:

We have modified our text, English grammar, as advised. (See all pages all lines)

Changes in the text:

We have, in turn, responded to your comments and suggestions below.

Abstract – overall I needed clarity on what is meant by 'ethics support' and wonder if this should be framed as the needs of teams (as it reads at the moment) or the needs of patients and families (which seems more appropriate I think?). Some specific comments are included below.

Reply 2:

We have modified our text, as advised. (See pages 1-2, lines 15-16, 42-43 in the Abstract.)

Changes in the text:

ethics support

ethics support, especially during complex decision-making.

the needs of the teams

the needs of patients with noncancer diseases and their families from the TEAM.

We have, in turn, responded to your other comments and suggestions below.

Background: I feel the first sentence needs refining and wonder if you are referring to the model of care for patients with noncancer disease is unclear? Is it the needs of the teams that you are wanting to note, or the needs of pts / families?

Reply 3:

We have modified our text, as advised. (See pages 1, lines 16 in the Abstract.)

Changes in the text:

the needs of the teams

the needs of patients with noncancer diseases and their families from the TEAM

Methods: I am not sure what you mean by: ‘who had requested the team from their healthcare providers for 10 years since 2011’ – is this referring to patients who had been referred to specialist palliative care?

Reply 4:

We have modified our text, as advised. (See pages 1, lines 21-31 in the Methods of the Abstract.)

Changes in the text:

who had requested the team

who had been referred to our TEAM.

Hospital-based specialized palliative care teams were changed to the shorter-term TEAM to reduce the word count.

The Methods section was rewritten, not partially revised, as suggested by the reviewers.

Methods: We utilized a retrospective cohort study to analyze 761 patients (360 with noncancer and 401 with cancer) referred to our TEAM at the National Center for Geriatrics and Gerontology using 10-year data (since 2011) available in an electronic medical record database. 1) Symptom scores of the Support Team Assessment Schedule were compared between noncancer and cancer groups and between initial and 1-week assessments for noncancer patients. 2) Ethics support was compared between noncancer (including dementia) and cancer. The presence or absence of ethics support requests, which was set as the objective variable, was examined using logistic regression analysis. 3) The percentage of request contents selected from nine items defaulted on the electronic medical record when a geriatric care nurse was present in our TEAM were compared to those when a palliative care nurse was present in our TEAM.

I wonder if where you state ‘regarding symptom scores ...’ you are actually talking about the key data variables being examined?

Reply 5:

We have modified our text, as advised. (See pages 1, lines 25-26 in the Methods of the Abstract.)

Changes in the text:

regarding symptom scores, ethics support, and the expertise of the team nurses. Symptom scores were compared between

Symptom scores **of the Support Team Assessment Schedule** were compared between **The Methods section was rewritten**, not partially revised, as suggested by the reviewers.

I am not clear about what you mean by 'ethics' support – could you clarify this upfront? Are you referring to complex decision making?

Reply 6:

6-1) We have modified our text, as advised. (See pages 1, lines 27 in the Methods of the Abstract.)

6-2) We have modified our text, as advised. (See pages 1, lines 15-16 in the Background of the Abstract.)

Changes in the text:

6-1) Ethics supports was also compared between

Ethics supports were compared between

In the above text change, we did not add an explanation of "ethics support" and what "ethics support" means.

Instead, the following text changes were made in the Background of the Abstract.

6-2) for symptom management and ethics support, but the needs of

for symptom management and ethics support, **especially during complex decision-making**, but the needs of

You not patients with dementia and without dementia – did this also account for patients with cognitive impairments relating to delirium and or advanced disease (brain cancer etc)?

Reply 7:

Yes, I account for these patients.

We have revised the Methods section of the main text, not the Abstract, as suggested by the reviewers to keep within the word limit of the Abstract.

We have modified our text, as advised. (See pages 5, lines 167-168 in the Measurements of the Methods.)

Changes in the text:

and between the dementia and nondementia groups,

and between the dementia and nondementia groups, **excluding patients with cognitive impairments related to delirium and or advanced disease (brain cancer, etc.) in the diagnosis of dementia.**

I am unclear about the measurement of expertise of the nurses – how did you measure this?

Reply 8:

No, we do not measure this. We determined this based on the qualifications the nurses have.

We revised the Methods section of the main text, not the Abstract, as suggested by the reviewers to keep within the word limit of the abstract.

We have modified our text, as advised. (See pages 5, lines 168-169 in the Measurements of the Methods.)

Changes in the text:

3) differences in the content of the consultations according to the expertise of the HSPC's nurses.

3) differences in the **percentage of request contents from patients and their families made to HSPC through their attending physicians and ward nurses when a certified nurse specialist in gerontological nursing was present in HSPC and when a certified nurse in palliative care was present in HSPC. Certified nurse specialists in gerontological nursing and palliative care were certified by the Japanese Nursing Association.**

The section was rewritten, not partially revised, as suggested by the reviewers.

I am not sure what 'percentage of each request' means?

Reply 9:

The denominator and numerator of 'percentage of each request' are as follows.

The denominator is the total number of requests made to a certified nurse.

The numerator is the number of requests made to a certified nurse for each of the nine defaults.

We have modified our text, as advised. (See pages 1, lines 28-30 in the Methods of the Abstract.)

Changes in the text:

Moreover, we compared the percentage of **each request** between a certified nurse specialist in gerontological nursing and a certified nurse in palliative care on the team.

3) The percentage of request contents selected from nine items defaulted on the electronic medical record when a geriatric care nurse was present in our TEAM were compared to those when a palliative care nurse was present in our TEAM.

The Methods section was rewritten, not partially revised, as suggested by the reviewers.

I think this section would benefit from a rewrite and be really explicit about what was done, what was included / excluded (why) and how measurements were determined. I should be able to replicate or have a very clear idea about what was completed in the study and unfortunately I am quite unclear (apologies).

Reply 10:

We have modified our text, as advised. (See pages 1, lines 21-31 in the Methods of the Abstract.)

Changes in the text:

The Methods section **was rewritten, not partially revised**, as suggested by the reviewers.

what was done

Symptom scores of the Support Team Assessment Schedule were compare ~~

Ethics supports, (especially during complex decision-making), were compared ~~

The percentage of the request contents selected from nine items defaulted on the electronic medical record ~~were compared ~~

what was included / excluded (why)

the dementia and nondementia groups, excluding patients with cognitive impairments related to delirium and or advanced disease (brain cancer, etc.) in the diagnosis of dementia.

In our hospitals, it is common to rule out delirium, psychiatric disorders with dementia-like signs, hypothyroidism, vitamin B1 deficiency, and drug-induced effects.

how measurements

We determined this based on the qualifications the nurses have.

We did not measure whether a nurse was a geriatric care nurse or a palliative care nurse.

Methods: We utilized a retrospective cohort study to analyze 761 patients (360 with noncancer and 401 with cancer) referred to our TEAM at the National Center for Geriatrics and Gerontology using 10-year data (since 2011) available in an electronic medical record database. 1) Symptom scores of the Support Team Assessment Schedule were compared between noncancer and cancer groups and between initial and 1-week assessments for noncancer patients. 2) Ethics support was compared between noncancer (including dementia) and cancer. The presence or absence of ethics support requests, which was set as the objective variable, was examined using logistic regression analysis. 3) The percentage of request contents selected from nine items defaulted on the electronic medical record when a geriatric care nurse was present in our TEAM were compared to those when a palliative care nurse was present in our TEAM.

Results:- This read well to me – well done and very interesting. The only small point I would make is where you have noted noncancer and dementia (as dementia is noncancer) – so this could be reworded to be more accurate? Perhaps: with noncancer diseases (including those with dementia).

Reply 11:

We have modified our text, as advised. (See pages 1, lines 36 in the Results of the Abstract.)

Changes in the text:

Patients with noncancer diseases

Patients with noncancer diseases including dementia.

Conclusions:- Small typo - symptom management (not symptoms)

Reply 12:

We have modified our text, as advised. (See pages 2, lines 43 in the Conclusions of the Abstract.)

Changes in the text:

symptom~~s~~ management

symptom management

I think the wording for this could be tighter with a focus on the fact your data showed patients with noncancer diseases had a high need for specialist palliative care input in relation to symptom management, ‘ethics support’ (not exactly sure of what you mean here) and input from gerontology specialists

Reply 13:

We have modified our text, as advised. (See pages 2, lines 42-46 in the Conclusions of the Abstract.)

Changes in the text:

The Conclusions section was rewritten, not partially revised, as suggested by the reviewers.

We tightened our wording. We focused on the facts that our data showed. Patients with noncancer diseases had a high need for advice from hospital-based specialized palliative care teams. The high need relates to 1) symptom management, 2) ethics support, especially during complex decision-making, and 3) advice from geriatric nurses. We have rewritten the text of the Conclusions section, as follows.

Conclusions: The needs of patients with noncancer diseases and families from the TEAM in Japan included 1) symptom management for intractable conditions, such as sputum accumulation; 2) ethics

support for patients with noncancer diseases, including dementia, with impaired decision-making capacity, and without advocates; and 3) advice on ethics issues from a geriatric care nurse.

Keywords – these make sense for me.

Reply 14:

Your comments have made us more confident in our choice of keywords. (See pages 2, lines 48-49 in the key words.)

Changes in the text:

No change.

Key findings – once you finalise updates as per above, these will need refining in accordance with this. That is – is it the needs of teams or the needs of patients? I really think you are meaning the needs of this population (pts with noncancer diagnoses) and the related impact this has on models of service for specialist palliative care. I think tightening this throughout the paper would work well and ties in nicely with the listed implications from your study outcomes.

Reply 15:

15-1) We have modified our text, as advised. (See pages 2, lines 53 in the Key Findings of the Highlight Box.)

15-2) We have modified our text, as advised about the service model. (See pages 2, lines 53 in the “What is the implication, and what should change now?” of the Highlight Box.)

Changes in the text:

15-1) Three key findings regarding the needs of hospital-based specialists palliative care teams for patients with noncancer diseases in Japan.

Symptoms that are more frequent than cancer and less amenable.

Targets with a high need for ethics support.

Need of ethics support for certified nurse specialists in gerontological nursing on that team

Three needs of patients with noncancer diseases and families from hospital-based specialized palliative care teams (TEAM hereinafter) in Japan

Symptom management that are more frequent than cancer and difficult-to-improve such as sputum accumulation.

Ethics support for patients with noncancer diseases, including dementia with impaired decision-making capacity without an advocate.

Advice on ethics issues from a certified nurse specialist in gerontological nursing (geriatric care nurse below)

15-2) Three new findings of hospital-based specialized palliative care teams for patients with noncancer diseases imply that we need to rethink the new role of such teams and composition of their members. Hospital-based specialized palliative care teams should focus on symptom management for difficult-to-improve conditions and include certified nurse specialists in gerontological nursing as new members or work closely with them to provide ethics support.

Findings from the study on needs of patients with noncancer diseases from the TEAM imply that we need to rethink of the new role of such teams and composition of their members. The TEAM should focus on symptom management for difficult-to-improve conditions, provide ethics support (especially in cases requiring complex decision making), and include geriatric care nurses as new members or work

closely with them to provide ethics support. **A new service model that adds these three roles to the existing TEAM should be developed.**

Introduction: Line 61 – I think you should note ‘patients with palliative care needs and their families with a focus on relieving suffering and improving QoL. (then you don’t need of affected individuals).

Reply 16:

We have modified our text, as advised. (See pages 3, lines 60-62 in the background of the Introduction.)

Changes in the text:

Hospital-based specialized palliative care teams (HSPC) were developed to meet the needs of patients and their families, relieve suffering, and improve the quality of life (QoL) of the affected individuals (1).

Hospital-based specialized palliative care teams (HSPC) were developed **for patients with palliative care needs and their families with a focus on relieving suffering and improving the quality of life (QoL)** (1).

Line 62 – instead of ‘most people’, it would be good to note exact statistics here from published papers in relation to place of death and distinguish between high income countries and others?

Reply 17:

We have modified our text, as advised. (See pages 3, lines 62-63 in the Background of the Introduction.)

Changes in the text:

Because most people die in the hospital, it is important to consider the needs for adequate HSPC.

Despite the decline in hospital deaths throughout Japan after 2019, when COVID-19 expanded, it is important to consider the needs for adequate HSPC given the high rates of hospital deaths among those aged 65 years and older, which can reach as high as 67.8% (2). Global estimates show that the most rapid increases in palliative care needs will occur among low-income countries, among people over age 70 years, and among people with dementia (3).

The sentence from line 63 ‘moreover’ needs referencing

Reply 18:

We have modified our text, as advised. (See pages 3, lines 63-65 in the background of the Introduction.)

Changes in the text:

Moreover, HSPC has been shown to provide modest gains in patient outcomes, such as symptom burden, health-related QoL (HRQoL), satisfaction with care, and death at the patient’s preferred location, compared with usual care.

Moreover, HSPC has been shown to provide modest gains in patient outcomes (4), such as symptom burden (5), health-related QoL (HRQoL) (6), satisfaction with care (7), and death at the patient’s preferred location (8), compared with usual care.

Line 68 – not sure what you mean by ‘and scattered’? This line needs editing – such as ‘globally few studies have focused on the impact of HSPC for patients with advanced noncancer illnesses cared for within general hospital wards and the intensive care unit (ref).’ Despite palliative care being noted as relevant and important for patients with dementia and chronic advanced respiratory illnesses, involvements of HSPC remains low (ref).

Reply 19:

We have modified our text, as advised. (See pages 3, lines 68-71 in the Rationale and knowledge gap of the Introduction.)

Changes in the text:

Globally, few and scattered studies have been conducted that discuss palliative care involving HSPC for noncancer diseases, such as chronic diseases, diseases requiring intensive care, and heart failure, such studies are scarce in Japan (3-6). Palliative care for dementia (7) and noncancer respiratory diseases (8) is considered necessary; however, the use of HSPC is low (9).

Globally, few studies have focused on the impact of HSPC for patients with advanced noncancer illnesses cared for within general hospital wards and the intensive care unit (10-13). Despite palliative care being noted as relevant and important for patients with dementia and chronic advanced respiratory illnesses, involvements of HSPC remains low (14-16).

You could add some statistics about overall hospital death ratings, the statistics for this in relation to Japan and then note the low number of Japanese studies investigating optimal care in this way?

Reply 20:

We added the following text to line 71 (See pages 3, lines 71 in the rationale and knowledge gap of the Introduction.)

Changes in the text:

Although nearly 70% of deaths in Japan and South Korea occur in hospitals, only <30% of deaths in the Netherlands and Norway transpire in hospitals, suggesting large differences between countries (17). Despite the decline in hospital deaths throughout Japan after 2019, the rate of hospital deaths among those aged 65 years and older has remained quite high at 67.8% (2). Very few studies on optimal HSPC have been conducted in this different health care settings, including differences in accessibility to palliative care and differences in mortality rates between countries.

Could you expand on what the STAS is and measures? Does this measure processes of care or outcomes? How does it relate to the IPOS?

Reply 21:

We added the following text to line 76 (See pages 3, lines 76 in the Rationale and knowledge gap of the Introduction.)

Changes in the text:

Both the STAS and IPOS can be used to assess symptom management, the patient's and family's decision-making capacity, and the presence of a patient advocate. Although the STAS is a tool used by others to conduct an assessment, the IPOS is a tool for self-assessment but can also be used by others, such as when patients lack decision-making capacity.

As stated above, you need to define 'ethics support' for international readers. I suspect you are meaning support for difficult decisions at the end of life?

Reply 22:

We have modified our text, as advised. (See pages 3, lines 78 in the Rationale and knowledge gap of the Introduction.)

Changes in the text:

the importance of ethics support in decision support

the importance of ethics support in decision support, especially in cases requiring complex decision-making

It would be helpful to elaborate on the ‘ongoing debate’ about which nurses should be in HSPC as I haven’t really heard this before? Is this unique to nursing of all professionals? I think this is an important point and agree with you – but you just need to substantiate this more strongly.

Reply 23:

We have added the following text to line 81 (See pages 3, lines 81 in the Rationale and knowledge gap of the Introduction.)

Changes in the text:

For instance, in the paper by Bajwah et al., studies that include certified experts in palliative care and those that are unclear about training of health care providers in palliative care are discussed separately (1). Moreover, evidence shows that better palliative care is provided to elderly heart failure patients with high palliative care needs when certified nurse specialists in both gerontology and chronic heart failure are involved (31). Estimates through 2060 indicate that low-income countries, the elderly, and patients with dementia will have the fastest growing burden of health-related suffering and the greatest need for integrating palliative care into their health care systems (3). Considering the association between palliative care utilization and cognitive dysfunction (32), the role of nurses in assessing the palliative care needs of persons with dementia has been discussed (33), with studies also looking into the integration of palliative and geriatric care (7). These discussions emphasize the importance of discussing the expertise of multiple professions in HSPC, especially that of nurses.

I think your information about the setting is important – but think this should sit with the information about setting within your methods section. Your background should be providing a comprehensive overview of key issues to do with care provision, the evidence gaps and therefore rationale for your study. I think you could broadly state the variance of HSPC models of care across the world and in Japan but then note the unique characteristics of your site within the methods. You have some good information setting up the rationale for your study but I feel this could be strengthened.

Reply 24:

We have moved line 85-101, which is the unique characteristics of our site, to the Methods section, as advised (See pages 3, lines 85-101 in the Rationale and knowledge gap of the Introduction.).

We added the following text to line 84 (See pages 3, lines 84 in the Rationale and knowledge gap of the Introduction.)

I have strengthened our description of the rationale for our study in accordance with this or another comment by the reviewer.

Changes in the text:

Compared to the rest of the world, Japan has developed a model of palliative care that is hospital- and cancer patient-centered. In recent years, the setting of palliative care has expanded from hospitals to homes and elderly care facilities, and the target diseases of palliative care have expanded from cancer to heart failure. However, the role and membership of the HSPC as an optimal model of care has still been the subject of debate.

Objective – the first sentence doesn't quite make sense for me. I am also not sure what you mean by comparing the intensity of requests between nurses?

Reply 25:

We have modified our text, as advised. (See pages 3-4, lines 106-114 in the Objective of the Introduction.)

Changes in the text:

We hypothesized that in Japan, the patients with noncancer diseases and their healthcare providers would have following different needs compared to those with cancer for HSPC: 1) for relief from suffering, 2) for ethics support, and 3) depending on the expertise of the team nurse.

The objectives of this study include: 1) to compare the prevalence of symptom between patients with and without cancer and to explore changes in symptom intensity after palliative care consultation in patients with noncancer disease, 2) to determine factors related to ethics support, and 3) to compare the intensity of each request between a certified nurse specialist in gerontological nursing and a certified nurse in palliative care in the team. We aimed to achieve these three objectives to identify the needs of HSPC teams for patients with noncancer diseases in Japan.

We hypothesized that in Japan, patients with noncancer diseases would have the following different needs compared to those with cancer from HSPC: needs related to 1) symptom management; 2) ethics support, especially for cases requiring complex decision-making; and 3) advice from a certified nurse specialist in gerontological nursing.

The objectives of this study are: 1) to compare the prevalence of symptom between patients with and without cancer and to explore changes in symptom intensity after HSPC consultation in patients with noncancer disease, 2) to determine factors related to ethics support, especially in cases requiring complex decision-making, and 3) to compare the percentage of request contents made to HSPC from patients and their families through their attending physicians and ward nurses when a certified nurse specialist in gerontological nursing was present in HSPC and when a certified nurse in palliative care was present in HSPC. We aimed to achieve these three objectives to identify the needs of patients with noncancer diseases and families from HSPC in Japan.

You note this is an observational study – but in the abstract state this is a analytical retrospective cohort study – could you please clarify and ensure reporting is in line with the ky guidance for your study type.

Reply 26:

We have modified our text, as advised. (See pages 4, lines 115-116 in the Objective of the Introduction.)

Changes in the text:

This manuscript is written following checklist of items that should be included in reports of observational studies, STROBE Statement.

This manuscript is written following checklist of items in the STROBE Statement.

In our study, 1) no intervention was used. 2) A two-group comparison was performed. 3) STAS scores, availability of ethics support, and percentage of requests were established as outcomes. The time relationship between these outcomes and factors was "heterochronic" rather than "simultaneous. 4) Observations were made retrospectively. Thus, we considered our study design to be a retrospective cohort study within an observational study.

Methods Definition – just add the reference at the end of the sentence – no need to state 'with reference to'

Reply 27:

We have modified our text, as advised. (See pages 4, lines 121-122 in the Definition of the Methods.)

Changes in the text:

We operationally defined the HSPC as a multidisciplinary team that consults with and advises health care providers on palliative care for hospitalized patients and their families, with reference to Bajwah et al (1).

We operationally defined "HSPC " as a multidisciplinary team that consults with and advises health care providers on palliative care for hospitalized patients and their families (1).

Participants – here I would add information about the setting this study was conducted in.

Reply 28:

We have moved line 85-111 to line 140, which is the unique characteristics of our site, as advised (See pages 4, lines 140 in the Participants of the Methods.).

Changes in the text:

HSPC at the National Center for Geriatrics and Gerontology is a unique example of a long-term active HSPC in Japan, where noncancer diseases account for about 40%–50% of the target patients. The National Center for Geriatrics and Gerontology encompasses a clinical research mission and 25 clinical departments, including geriatrics, neurology, psychiatry, respiratory medicine, cardiology, gastroenterology, hematology, gastroenterology surgery, neurosurgery, and orthopedics, as well as an attached Center for Comprehensive Care and Research on Memory Disorders, and Center for Frailty and Locomotive Syndrome. Hence, the HSPC being considered in this study is a team operating in the unique environment of the National Center for Geriatrics and Gerontology. The center's HSPC primarily comprises the following five occupations: a.) physicians skilled in alleviating physical symptoms, b.) nurses with expertise and certification in the field of palliative care and geriatric care, c.) pharmacists skilled in palliative care, d.) medical social workers, and e.) registered dietitians. However, the standard palliative care team in Japan does not include nurses with expertise and certification in the field of geriatric care (35). Within 10 years, since 2011, a certified nurse in palliative care was affiliated with HSPC for the first 3.5 years and was replaced with a certified nurse specialist in gerontological nursing for the second 6.5 years because of retirement. The certified nurse specialist in gerontological nursing and the certified nurse in palliative care completed a master's degree program and 600 h of training, respectively, before being certified by the Japanese Nursing Association.

I am not sure what you mean by 'first time' (is this meaning when a consult is first made to the team?)

Reply 29:

We added the following text to line 143 (See pages 4, lines 143 in the Participants of the Methods.).

Changes in the text:

The first measurements were taken on the day the HSPC first visited the patient and discussed care with the attending physician and ward nurses.

Did your team complete the STAS score from the information within the notes or STAS scores are document already?

Reply 30:

We have modified our text, as advised. (See pages 4, lines 141 in the Participants of the Methods.).

Changes in the text:

Data was extracted from the electronic medical record database in 2022.

Data including STAS scores were extracted in the form of comma separated values (CSV) files from the electronic medical record database in 2022.

Please elaborate on the reasoning for the timing of the second measurement (rather than just stating previous studies – explain rationale and reference the studies to support your claim)

Reply 31:

We have modified our text, as advised. (See pages 4, lines 143-144 in the Participants of the Methods.)

Changes in the text:

The timing of the second measurement was based on previous studies (15).

The timing of the second measurement seemed appropriate at 7 days after the first measurement based on previous studies (36). However, in actual clinical practice, accurately measuring 7-day intervals was difficult due to the patient's general condition and examination schedule. Therefore, measurement results at intervals of 7 ± 3 days were extracted as CSV files.

I think you could strengthen your inclusion / exclusion paragraph – for example, why did the change of team nurses in 2014 indicate a time period for extraction from 2011 – 2020?

Reply 32:

We have modified our text, as advised. (See pages 4, lines 148-152 in the Participants of the Methods.)

Changes in the text:

The 10-year data extraction period was determined by considering the following periodic changes in the healthcare environment: 1) change of team nurses in 2014; 2) start of the model project for training advance care planning facilitators in 2016 by the Ministry of Health, Labor and Welfare; 3) publication of clinical ethics guidelines on end-of-life care in 2018 by the Ministry of Health, Labor and Welfare.

The 10-year data extraction period was determined for the following reasons 1) This study was initiated 10 years after the HSPC began its activities; 2) Japanese people tend to consider 10 years as the milestone of a project; 3) The nurses affiliated with HSPC were replaced in 2014 from a certified nurse in palliative care to a certified nurse specialist in gerontological nursing. We were motivated, at the start of this study, to identify the impact of differences in nurses' expertise.

Also – if a targeting new project commenced in 2016 – could this confound later results? How do you account for this? I think it may be stronger to note specifically your inclusion and exclusion from a patient perspective (Eg – adult patient, referred to HSPC within 2011-2022, availability of STAS scores etc) and then note there were key external factors that occurred within the data collection period (noting this will not be unusual in any clinical environment over a 10yr period).

Reply 33:

Same as Reply 32.

We decided to remove the description of the 2016 model project and the 2018 ethics guidelines, following the reviewer's comments. We reconsidered that it would be better to describe internal factors involving the patient, family and HSPC rather than external factors.

Changes in the text:

Same as Reply 32.

Measurement- I am not sure why you didn't investigate the differences in symptom intensity for cancer patients at the 1 week follow up? Can you provide a rationale for this for readers?

Reply 34:

We added the following text to line 169 (See pages 5, lines 169 in the Measurements of the Methods.)

Changes in the text:

Differences between the initial and 1-week follow-up evaluation in patients with cancer were not analyzed in detail given our focus on noncancer diseases.

How did you measure differences in the content of the consultations – was this through a content analysis?

Reply 35:

No, we have not done a content analysis.

We added the following text to line 169 (See pages 5, lines 169 in the Measurements of the Methods.)

Changes in the text:

Request contents were selected from the nine items set by default and extracted as a CSV file from the electronic medical records available in the database.

Results- I found it hard to understand what line 219 and 220 were connected to – is this in relation to the paragraph above? I am not sure this sentence as a stand alone works – just needs a little more explanation.

Reply 36:

We have removed lines 219-220 (See pages lines 219-220 in the Results.)

We have performed a sensitivity analysis to give confidence in the results of our data analysis. The results of the sensitivity analysis showed similar results whether the data were analyzed as categorical or continuous variables. We described this in lines 219-220. However, in response to the reviewer's comments, we reconsidered that it was not necessary to include the sensitivity analysis.

Changes in the text:

The following text has been removed.

Comparisons of STAS symptom scores were similar, although sensitivity analyses were performed as categorical and continuous variables.

I feel the reader needs additional detail about STAS scores (perhaps in the methods section where you talk about measurement) – it doesn't make sense to someone who is not familiar with the measure to be reading about scores of 8 and 9 etc – it would help readers to make this very clear I think.

Reply 37:

We have modified our text, as advised. (See pages 4, lines 157 in the Measurements of the Methods.)

Changes in the text:

The STAS was developed by Higginson et al (16) and its reliability and validity were confirmed by Carson et al (17) whereas Miyashita et al. confirmed its reliability and validity in the Japanese population. The STAS Basic version includes four domains: physical symptoms, psychological symptoms, patient/family perception of illness, and communication among stakeholders (18). Twenty-two symptoms are rated on a 5-point scale, from 0 to 4, in the STAS Symptom version (19).

The STAS was developed by Higginson et al (18) and its reliability and validity were confirmed by Carson et al (19) whereas Miyashita et al. confirmed its reliability and validity in the Japanese population (20,21). The STAS Basic version includes four domains: physical symptoms, psychological symptoms, patient/family perception of illness, and communication among stakeholders (20). A patient STAS score of 9 denotes an incapacity for decision-making. A family STAS score of 9 denotes an incapacity for decision-making. A family STAS score of 8 denotes the lack of a family member that can advocate for the patient's wishes.

The STAS symptom version includes 22 symptoms. Twenty-two symptoms are rated on a 5-point scale, from 0 to 4, in the STAS Symptom version (21). A STAS score of ≥ 2 denotes symptoms that require immediate treatment, whereas a STAS score of < 2 denotes symptoms that do not necessarily require immediate treatment.

Discussion- Paragraph 1 needs to be edited for English language and also just to strengthen your message. You cover a lot of key points but it is not easy to read

Reply 38:

We have rewritten lines 252-262, as advised. (See pages 6, lines 252-262 in the Paragraph 1 of the Discussion.)

Changes in the text:

To the best of our knowledge, the present study is the first to clarify the following points. The needs of HSPC for patients with noncancer diseases in Japan include 1) symptoms management that are more frequent, such as dyspnea, sputum accumulation than cancer, and less amenable, such as sputum accumulation and anorexia; 2) targets with a high need for ethics support such as patients with dementia, impaired decision-making capacity, and lack of advocates; and 3) ethics support by certified nurse specialists in gerontological nursing on that team. Thus, patients with any disease might seek the intervention of an HSPC team; HSPC might be helpful in symptom management for common symptoms that are difficult to improve, such as sputum accumulation and anorexia; and HSPC including certified nurse specialists in gerontological nursing might be helpful in providing ethics support, especially for patients with dementia and without an advocate.

Explanations of Key findings

To the best of our knowledge, the present study is the first to clarify the needs of patients and families from HSPC teams for patients with noncancer diseases in Japan. The needs include 1) symptoms management that are more frequent, such as dyspnea, sputum accumulation than cancer, and less amenable, such as sputum accumulation and anorexia; 2) ethics support for patients with noncancer diseases, including those with dementia, those with impaired decision-making capacity, and those lacking advocates; and 3) advice on ethics issues from a certified nurse specialist in gerontological nursing.

Paragraph 2 – I think you need to state more strongly recent evidence that notes the fact noncancer diagnoses have equal symptomatic distress and there has been ongoing advocacy to ensure their access to HSPC.

Reply 39:

We have rewritten lines 263-278, as advised. (See pages 7, lines 263-278 in the Paragraph 2 of the Discussion.)

Changes in the text:

The first crucial finding of this study was that patients with noncancer diseases also experienced suffering and that HSPC involvement may or may not alleviate their suffering, depending on the type of symptoms. As reported previously, patients with noncancer diseases, similar to that observed for patients with cancer, experienced a variety of distressing symptoms (23,24). Previous reports have noted urinary and defecation distress (25). Conversely, our study noted pain, dyspnea, sputum, and anorexia as suffering in patients with noncancer diseases, occurring >10% of cases. These results were consistent with those reported by Suhair et al (26). Of these, dyspnea and sputum were more common than in patients with cancer. A report from Japan using the same measure as ours, the STAS, focused on anxiety and dyspnea in patients admitted to the palliative care unit mainly for those with cancer (27), and we had the same results. Our study added to findings for noncancer diseases in this measure. After 1 week of HSPC involvement, STAS scores significantly decreased, except for the sputum. In anorexia, STAS scores significantly decreased, but >10% of patients were still suffering from anorexia after 1 week of treatment. Our study added to the presence of sputum-induced distress in noncancer patients, who were difficult to ameliorate with treatment. Many HSPC members were aware of the presence of sputum-induced distress in their experience. However, our evidence revealed by the large sample size and data obtained over a long period of time is valuable.

Comparison with similar research on symptom management

The first crucial finding of this study was that patients with noncancer diseases also experienced suffering. Rojas-Concha et al. also showed that the prevalence of reported symptoms did not significantly differ between noncancer patients receiving specialized palliative care and cancer patients (40). Although all similar reports indicate that the distressing symptoms experienced by noncancer patients are substantial (41,42), the types of distressing symptoms vary from one study to another (43). In addition, very few studies have used the STAS for assessment, and the only reports in Japan with large enough sample sizes have been on patients with cancer (44). Conversely, our study noted that patients with noncancer diseases suffer from pain, dyspnea, sputum accumulation, and anorexia, which occur in >10% of the cases. These results were consistent with those reported by Suhair et al. (45). Despite this discussion of palliative care needs for patients with noncancer diseases, the use of specialized palliative care remains limited worldwide (46). Considering the low access to palliative care, we propose the development of an international consensus on referral criteria for older adults with noncancer to ensure access to HSPC (47). The problem of low access to HSPC is similarly prevalent in Japan, with estimates showing that noncancer diseases account for only 5.3% (n = 104,331) of the HSPC registry of the Japanese Society of Palliative Medicine (34). This finding highlights the need for an approach that ensures HSPC access among patients with noncancer diseases in Japan. The current study, in which 47.3% of all requests were about patients with noncancer diseases, will certainly have a significant impact on the future activities of the HSPC in Japan.

Then note what data from your study is confirmatory and unique.

Reply 40:

Included in Reply 39.

Changes in the text:

Included in the text changes made in Reply 39.

Then restate the fact your registry data showed access is Japan for people with noncancer is low.

Reply 41:

Included in Reply 39.

Changes in the text:

Included in the text changes made in Reply 39.

Again – this paragraph needs close editing for English language

Reply 42:

Included in Reply 39.

We edited this paragraph (paragraph 2) with the help of an English editing specialist. We also edited the entire paper in the same way.

Changes in the text:

Included in the text changes made in Reply 39.

I think the lack of definition of ‘ethics support’ as listed in your limitations is important. In the absence of a published definition, I think you need to define up front what your team understood this meant and therefore how it was measured.

Reply 43:

We added the following text to line 123 (See pages 4, lines 123 in the Definition of the Methods.)

Changes in the text:

“Ethics support” was operationally defined as helping patients and their families make complex decisions, whereas “request” was operationally defined as an order placed by patients and their families to the HSPC through their attending physicians or ward nurses in the electronic medical record.

I think you should also add the strengths of your study (not just the long list of limitations). Your limitations needs editing for English to be easier to read.

Reply 44:

44-1) We have rewritten lines 316-329, as advised. (See pages 7-8, lines 316-329 in the Paragraph 7-8 of the Discussion.)

We have written this paragraph focusing on the strengths of our study.

44-2) We have modified our text, as advised. (See pages 8, lines 330-369 in the Limitations of the Discussion.)

We have received from you a suggestion to edit the English language of our paper. At the same time, we received suggestions from two other reviewers to reduce the number of limitations. They also suggested that we list only four limitations: retrospective study design, one center study, use of STAS, and multiple diagnoses in one patient. This corresponds to the first, second, third, and tenth of the eleven limitations we listed. We therefore decided to edit the English text, deleting the other seven restrictions.

Changes in the text:**44-2) Strengths and Future research**

The strength of our study lies in our identification of the needs of patients and families suffering from noncancer diseases, including dementia, from HSPC in Japanese hospitals, where hospital deaths still remain high and the scope of in-hospital palliative care has yet to expand to noncancer diseases. HSPC, including certified nurse specialists in gerontological nurses, should provide ethics support for people with noncancer diseases requiring complex decision-making, including those with dementia, those with reduced decision-making capacity, and those without an advocate while addressing intractable distress,

such as sputum accumulation and anorexia. Research on palliative care for dementia remains insufficient in Japan and perhaps worldwide. For instance, no current HSPC intervention studies have been available for people with end-stage dementia, and although a certain impact may be observed, such as reduced selection of certain medical procedures during hospitalization, the effectiveness of HSPC has not necessarily been demonstrated (54,55). Our research may have a certain impact on this status quo.

44-29) **Limitations**

There are **four** limitations of this study. First, our study utilized **a retrospective design**. Second, in our study, **one patient had multiple diagnoses**. Third, the STAS is an evaluation by others. The IPOS (22,23), including self-administered evaluation by the patient, is used worldwide as a successor to the STAS. However, when we implemented the STAS in our electronic health record in 2011, the IPOS had not been tested for reliability and validity in Japanese. **Fourth**, our center is a national center for dementia and geriatric care; thus, our findings are not necessarily generalizable.

Conclusion- Sentence 1 needs editing for English to be easier to read

I would pull out the implications for practice, policy and research and note these at the end of your discussion. Then I would suggest crafting a strong conclusion paragraph with the important outcomes from your study

Reply 45:

45-1) We have rewritten lines 372-376, as advised. (See pages 8-9, lines 372-376 in the Paragraph 1 of the Conclusion.)

45-2) We have moved line 377-382 to line 329-330, as advised (See pages 8, lines 329-330 in the Discussion.).

Changes in the text:

45-1) The needs of HSPC for patients with noncancer diseases in Japan include 1) symptoms management that are more frequent, such as dyspnea, sputum accumulation than cancer, and less amenable, such as sputum accumulation and anorexia; 2) targets with a high need for ethics support such as patients with dementia, impaired decision-making capacity, and lack of advocates; and 3) ethics support by certified nurse specialists in gerontological nursing on that team.

The needs of patients with noncancer diseases and their families from HSPC in Japan included 1) symptom management for intractable conditions, such as sputum accumulation; 2) ethics support for patients with noncancer diseases, including those with dementia, those with impaired decision-making capacity, and those without advocates; and 3) advice on ethics issues from certified nurse specialists in gerontological nursing.

45-2) We did not change the text. We moved the text from the Conclusions section to the Discussion section.

This is a great study – all the best as you continue to take this work forward.

Reply 46:

We continue to take this work forward.

Changes in the text:

Not applicable

Reviewer C

The authors aimed to explore the need for hospital-based specialized palliative care (HSPC) for noncancer patients, including symptom management, ethics support, and certified nurses. The authors conducted a 10-year retrospective study using data from one hospital. They examined the characteristics of patients, symptoms, and reasons for HSPC consultation. Of 761 patients, 360 (47.3%) were noncancer. Symptoms between patients with and without cancers differed, yet the HSPC team was able to manage and improve symptoms in the noncancer group. The need for ethics support in the noncancer group and patients with dementia was higher than in their counterparts. Certified nurse specialists in gerontology reported higher ethics support requests than certified nurses in palliative care. Patients with impaired decision-making capacity or without advocates requested ethics support more often than their counterparts. The authors did well in terms of research questions, valid research methodology, presentation of findings, and discussion. Though the findings may be specific to Japan's context, those providing palliative care in a hospital may consider applying them in their practice or raise research questions regarding palliative care for noncancer patients.

Below are my comments to improve this manuscript:

Reply 1:

Thank you for summarizing our research.

Changes in the text:

Not applicable

Introduction 1. Add references confirming that more Japanese people died at hospitals than at home.

Reply 2:

We have modified our text, as advised. (See pages 3, lines 62-63 in the Background of the Introduction.)

Changes in the text:

Because most people die in the hospital, it is important to consider the needs for adequate HSPC.

Despite the decline in hospital deaths throughout Japan after 2019, when COVID-19 expanded, it is important to consider the needs for adequate HSPC given the high rates of hospital deaths among those aged 65 years and older, which can reach as high as 67.8% (2). Global estimates show that the most rapid increases in palliative care needs will occur among low-income countries, among people over age 70 years, and among people with dementia (3).

Methods What is ethics support? Who requested it? Certified nurses?

Reply 3:

We have added the following text to line 123 (See pages 4, lines 123 in the Definition of the Methods.)

Changes in the text:

“Ethics support” was operationally defined as helping patients and their families make complex decisions, whereas “request” was operationally defined as an order placed by patients and their families to the HSPC through their attending physicians or ward nurses in the electronic medical record.

The following nine “requests” were set by defaulted in the electronic medical records: 1) physical pain, 2) psychological pain, 3) family care, 4) social pain, 5) ethics support, 6) spiritual pain, 7) nutritional support, 8) medications, and 9) rehabilitation. Patients and their families could select any of them through their attending physicians or ward nurses.

The number of patients with dementia seems to be discrepant. The figure on Page 5 does not align with the data presented in Table 1. This inconsistency needs to be addressed.

Reply 4:

I'm sorry, for the number of patients with dementia, 126 was correct and 125 was incorrect.

We have modified our text, as advised. (See pages 5, lines 205-206 in the Results.)

Changes in the text and Table:

In addition, there were 125 (16.4%) and 636 (83.6%) patients with and without dementia, respectively.

In addition, there were 126 (16.6%) and 635 (83.4%) patients with and without dementia, respectively.

We have also changed Table 3 in relation to this.

Implemented

157 to 156 (non-dementia), 76 to 77 (dementia)

Chi-Squared 70.8 to 72.00

Effect size 0.303 to 0.308

Page 4, Line 155: Add in-text citations about the reliability of the Japanese version of STAS.

Reply 5:

We have modified our text, as advised. (See pages 4, lines 155 in the Measurements of the Methods.)

Changes in the text and Table:

whereas Miyashita et al. confirmed its reliability and validity in the Japanese population.

whereas Miyashita et al. confirmed its reliability and validity in the Japanese population (20,21).

Page 5, Lines 163-169: The authors stated four differences, while only three are in the paragraph.

Reply 6:

We have modified our text, as advised. (See pages 5, lines 163-169 in the Measurements of the Methods.)

The notations 1), 2), and 3) correspond to the objectives. Since 1) includes two "differences", we have listed four. We also considered using the notation 1-1), 1-2), 2), and 3). Finally, we have modified our text, as advised.

Changes in the text:

We used these extracted data for the following analyses. For univariate analyses, we investigated the following **four** differences: 1) differences in symptom intensity between patients with noncancer diseases and those with cancer at the evaluation 1 week after the initial visit, and differences in symptom intensity between the initial and one-week follow-up evaluation in patients with noncancer diseases, 2) differences in the frequency of implementing ethics support between the noncancer and cancer groups and between the dementia and nondementia groups, 3) differences in the content of the consultations according to the expertise of the HSPC's nurses.

We used these extracted data for the following analyses.

For univariate analyses, we investigated **the following differences**: 1) differences in the prevalence of symptom between patients with noncancer diseases and those with cancer at the evaluation 1 week after the initial visit, and differences in symptom intensity between the initial and one-week follow-up evaluation in patients with noncancer diseases; 2) differences in the frequency of implementing ethics support between the noncancer (including dementia) and cancer groups and between the dementia and nondementia groups, excluding patients with cognitive impairments related to delirium and or advanced disease (brain cancer, etc.) in the diagnosis of dementia; 3) differences in the percentage of request contents from patients and their families made to HSPC through their attending physicians and ward nurses when a certified nurse specialist in gerontological nursing was present in HSPC and when a certified nurse in palliative care was present in HSPC. Certified nurse specialists in gerontological nursing and palliative care were certified by the Japanese Nursing Association.

Page 6, Lines 236-237: Is it cancer or noncancer related to the presence or absence of ethics support requests in a univariate analysis?

Reply 7:

We have modified our text, as advised. (See pages 6, lines 236-237 in the Results.)

Changes in the text:

We also referred to the results of univariate analysis in this study and strongly inferred that noncancer disease, **cancer**,

We also referred to the results of univariate analysis in this study and strongly inferred that **noncancer disease**,

This part should be extensively revised because it is difficult to follow.

Reply 8:

We have rewritten, as advised. (See pages 4-5, lines 119-123, 141-144, 153-158, 163-172 in the Methods.)

Changes in the text:

Definition of HSPC, **ethics support, and request**

We operationally defined **“HSPC”** as a multidisciplinary team that consults with and advises health care providers on palliative care for hospitalized patients and their families **(1)**. In this study, we did not include outpatient services or outreach services among the services performed by the HSPC.

“Ethics support” was operationally defined as helping patients and their families make complex decisions, whereas **“request”** was operationally defined as an order placed by patients and their families to the HSPC through their attending physicians or ward nurses in the electronic medical record.

The following nine “requests” were set by defaulted in the electronic medical records: 1) physical pain, 2) psychological pain, 3) family care, 4) social pain, 5) ethics support, 6) spiritual pain, 7) nutritional support, 8) medications, and 9) rehabilitation. Patients and their families could select any of them through their attending physicians or ward nurses.

Data, **including STAS scores, were** extracted **in the form of comma separated values (CSV) files** from the electronic medical record database in 2022. The cohort included 761 patients, 360 patients with noncancer diseases 401 with cancer. STAS scores were measured at the first time and at the second time, about one week after the first time (7 ± 3 days after the **first measurement**). **The first measurements were taken on the day the HSPC first visited the patient and discussed care with the attending physician and ward nurses.** The timing of the second measurement **seemed appropriate at 7 days after the first**

measurement based on previous studies (36). However, in actual clinical practice, accurately measuring 7-day intervals was difficult due to the patient's general condition and examination schedule. Therefore, measurement results at intervals of 7 ± 3 days were extracted as CSV files.

The STAS was developed by Higginson et al (18) and its reliability and validity were confirmed by Carson et al (19) whereas Miyashita et al. confirmed its reliability and validity in the Japanese population (20,21). The STAS Basic version includes four domains: physical symptoms, psychological symptoms, patient/family perception of illness, and communication among stakeholders (20). A patient STAS score of 9 denotes an incapacity for decision-making. A family STAS score of 9 denotes an incapacity for decision-making. A family STAS score of 8 denotes the lack of a family member that can advocate for the patient's wishes.

The STAS symptom version includes 22 symptoms. Twenty-two symptoms are rated on a 5-point scale, from 0 to 4, in the STAS Symptom version (21). A STAS score of ≥ 2 denotes symptoms that require immediate treatment, whereas a STAS score of < 2 denotes symptoms that do not necessarily require immediate treatment.

We used these extracted data for the following analyses.

For univariate analyses, we investigated the following differences: 1) differences in the prevalence of symptom between patients with noncancer diseases and those with cancer at the evaluation 1 week after the initial visit, and differences in symptom intensity between the initial and one-week follow-up evaluation in patients with noncancer diseases; 2) differences in the frequency of implementing ethics support between the noncancer (including dementia) and cancer groups and between the dementia and nondementia groups, excluding patients with cognitive impairments related to delirium and or advanced disease (brain cancer, etc.) in the diagnosis of dementia; 3) differences in the percentage of request contents from patients and their families made to HSPC through their attending physicians and ward nurses when a certified nurse specialist in gerontological nursing was present in HSPC and when a certified nurse in palliative care was present in HSPC. Certified nurse specialists in gerontological nursing and palliative care were certified by the Japanese Nursing Association.

Differences between the initial and 1-week follow-up evaluation in patients with cancer were not analyzed in detail given our focus on noncancer diseases. Request contents were selected from the nine items set by default and extracted as a CSV file from the electronic medical records available in the database.

For the multivariate analysis, we conducted a logistic regression analysis, with the presence or absence of requests for ethics support as the objective variable. Based on the literature by Chen et al. (37), we focused on the presence or absence of the following explanatory variables for ethics support: dementia, decision-making capacity, and an advocate.

Some important information, such as the interpretation of the STAS score, needed to be included.

Reply 9:

We have modified our text, as advised. (See pages 4, lines 153-158 in the Measurements of the Methods.)

Changes in the text:

The STAS was developed by Higginson et al (18) and its reliability and validity were confirmed by Carson et al (19) whereas Miyashita et al. confirmed its reliability and validity in the Japanese population (20,21). The STAS Basic version includes four domains: physical symptoms, psychological symptoms, patient/family perception of illness, and communication among stakeholders (20). A patient STAS score of 9 denotes an incapacity for decision-making. A family STAS score of 9 denotes an

incapacity for decision-making. A family STAS score of 8 denotes the lack of a family member that can advocate for the patient's wishes.

The STAS symptom version includes 22 symptoms. Twenty-two symptoms are rated on a 5-point scale, from 0 to 4, in the STAS Symptom version (21). A STAS score of ≥ 2 denotes symptoms that require immediate treatment, whereas a STAS score of < 2 denotes symptoms that do not necessarily require immediate treatment.

Some information should be in a different subheading. For example, information between Lines 163-178 should be in the data analysis subheading.

Reply 10:

We added the following text to line 163, 173, 176. (See pages 5, lines 163-178 in the Measurements of the Methods.)

Changes in the text:

Analysis for main group

Analysis for subgroups

Analysis to reduce bias

Results The authors should use % instead of ratios in Tables 2-1 and 2-2 and can present only numbers and percentages of those with > 2 STAS.

Reply 11:

We have modified, as advised. (See pages 14-17, Tables 2-1 and 2-2.)

Changes in the tables:

We have used % instead of ratios in Tables 2-1 and 2-2 and have presented only numbers and percentages of those with > 2 STAS.

The authors can put the prevalence of symptoms in order from the most to the least common symptoms in Tables 2-1 and 2-2.

Reply 12:

We have modified, as advised. (See pages 14-17, Tables 2-1 and 2-2.)

Changes in the tables:

We have put the prevalence of symptoms in order from the most to the least common symptoms in Tables 2-1 and 2-2.

I would appreciate further clarification on the discrepancy in the number of patients between one week later and the initial consultation. Could you explain why these numbers differ, considering the authors' aim to assess symptom improvement one week after the consultation?

Reply 13:

We have added the following text to the footnotes for Tables 2-1 and 2-2. (See pages 14-17, Tables 2-1 and 2-2)

Changes in the tables:

Note that in the STAS symptom version, an item called “not evaluable” was added to the scores 0, 1, 2, 3, and 4. Variations in the value of N in each symptom score were attributed to this “not evaluable” item.

Defining the patients as improved, not improved, or improved, same, and worse could provide a clearer understanding of how well the team managed patients' symptoms.

Reply 14:

We agree with you. It would have been better if we could have implemented your suggestion. But for us it was difficult.

Instead, we have added the following text to line 158. (See pages 4, lines 158 in the Measurements of the Methods.)

We considered that a decrease in the percentage of STAS score ≥ 2 could be inferred as "improved".

Changes in the text:

A STAS score ≥ 2 denotes symptoms that require immediate treatment. STAS score <2 denotes symptoms that do not necessarily require immediate treatment.

The authors should add percentages in Table 4.

Reply 15:

We have added percentages in Table 4. (See pages 19, Table 4.)

Changes in the tables:

Please see pages 19, Table 4.

The authors should say noncancer instead of "cancer or noncancer" and expertise in gerontological nursing instead of "expertise of nurses."

Reply 16:

We have modified, as advised. (See pages 20, Tables 5.)

Changes in the tables:

Cancer or noncancer

Noncancer

Expertise of nurses

Expertise in gerontological nursing

Discussion How did the authors claim the need for ethics support was high in patients with impaired decision-making capacity and a lack of advocacy? Is there any finding supporting this claim?

Reply 17:

We have modified, as advised. (See pages 7, lines 285-286 in the Paragraph 3 of the Discussion.)

Changes in the tables:

Our study added to the findings that the HSPC, which targeted people with noncancer diseases, particularly dementia, had the needs for ethics support.

Our study added to the findings that **people** with noncancer diseases, particularly those with dementia, those **with impaired decision-making capacity, and those lacking advocates**, had the needs for ethics support **according to the results presented in Table 5**.

The authors may reduce the number of limitations to three or four, for example, limitations from retrospective study design, one center study, use of STAS, and multiple diagnoses in one patient.

Reply 18:

We have modified, as advised. (See pages 8, lines 330-369 in the limitations of the Discussion.)

Changes in the text:

There are **four** limitations of this study. First, our study utilized **a retrospective design**. Second, in our study, **one patient had multiple diagnoses**. Third, the STAS is an evaluation by others. The IPOS (22,23), including self-administered evaluation by the patient, is used worldwide as a successor to the STAS. However, when we implemented the STAS in our electronic health record in 2011, the IPOS had not been tested for reliability and validity in Japanese. **Fourth**, our center is a national center for dementia and geriatric care; thus, our findings are not necessarily generalizable.