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Identified Palliative Care Approach Needs with SPICT in Family Practice

Citation for published version:

Hamano, J, Oishi, A & Kizawa, Y 2018, 'Identified Palliative Care Approach Needs with SPICT in Family Practice: A Preliminary Observational Study', *Journal of palliative medicine*.
<https://doi.org/10.1089/jpm.2017.0491>

Digital Object Identifier (DOI):

[10.1089/jpm.2017.0491](https://doi.org/10.1089/jpm.2017.0491)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Journal of palliative medicine

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JOURNAL OF
Palliative Medicine

Journal of Palliative Medicine: <http://mc.manuscriptcentral.com/palliative>

Identified palliative care approach needs with SPICT™ in family practice: a preliminary observational study

Journal:	<i>Journal of Palliative Medicine</i>
Manuscript ID	JPM-2017-0491.R2
Manuscript Type:	Brief Reports
Keyword:	Geriatric Palliative Care End of Life Issues
Manuscript Keywords (Search Terms):	Identification tool, palliative care approach, SPICT™, family practice

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Manuscripts

Not for Distribution

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6 **Identified palliative care approach needs with SPICT™** in family practice: a preliminary
7
8 observational study
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13 **ABSTRACT**
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17 **Background:** Identifying patients who require palliative care approach is challenging for family
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19 physicians, even though several identification tools have been developed for this purpose.
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23 **Objective:** To explore the prevalence and characteristics of family practice patients who need
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25 palliative care approach as determined using Supportive and Palliative Care Indicators Tool
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27 (SPICT™, April 2015) in Japan.
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31 **Design:** Single-center cross-sectional study.
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34 **Setting/Subjects:** We enrolled all patients aged ≥ 65 years who visited the chief researcher's
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36 outpatient clinic in October 2016.
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40 **Measurements:** We used Japanese version of SPICT™ (SPICT™-J) to identify patients who
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42 need palliative care approach. We assessed patients' backgrounds and whether they had
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44 undergone advance care planning with their family physicians.
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48 **Results:** This study included 87 patients (61 females) with a mean age of 79.0 ± 7.4 years. Eight
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50 patients (9.2%) were identified as needing palliative care approach. The mean ages of patients
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52 who needed this approach were 82.3 ± 8.3 years and main underlying conditions were
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6 heart/vascular disease (37.5%), dementia/frailty (25.0%), and respiratory disease (12.5%). Only
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9 two of eight patients identified as needing palliative care approach had discussed advance care
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12 planning with their family physicians.

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14 **Conclusions:** In family practice, 9.2% of outpatients aged ≥ 65 years were identified as needing
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17 palliative care approach. Family physicians should carefully evaluate whether outpatients need
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20 palliative care approach.
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26 Keywords: Identification tool, palliative care approach, SPICT™, family practice,
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31 Abbreviations

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34 Gold Standards Framework Prognostic Indicator Guidance: PIG

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37 Supportive and Palliative Care Indicators Tool: SPICT™

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40 Palliative Necessities CCOMS-ICO: NECPAL

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43 RADboud indicators for Palliative Care Needs: RADPAC

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46 World Health Organization: WHO
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1 Introduction

2 Palliative care approach focuses on the needs of patients with life-threatening illness as well as
3 those of their families. It emphasises the timely recognition of these needs, which may be
4 physical, psychological, social, or existential in nature.¹⁻³

5
6 Timely identification of patients who need palliative care approach was shown to promote the
7 discussion of advance care planning between patients and their physicians.⁴ Such planning
8 enables providers to clarify treatment preferences and goals of care, improves symptom control
9 and the quality of end-of-life care, reduces distress, allows for less aggressive care, lowers
10 medical costs, and may even lengthen survival.⁵ Thus, it is essential to conduct high-quality
11 end-of-life care,^{6,7} although family physicians have reported difficulties with the prompt
12 identification of patients who need palliative care approach.^{8,9}

13
14 A recent study revealed that a systematic method or tool could facilitate the timely identification
15 of patients who need palliative care approach.¹⁰ Several such tools have been developed for use
16 in the family practice setting, such as the Gold Standards Framework Prognostic Indicator
17 Guidance (PIG),¹¹ Supportive and Palliative Care Indicators Tool (SPICTTM),¹² the Palliative
18 Necessities CCOMS-ICO (NECPAL),⁷ and the RADboud indicators for Palliative Care Needs

1 (RADPAC).¹³

2

3 One recent retrospective study analyzed the predictive value of SPICT™ in terms of 1-year
4 mortality at the single acute geriatric ward in Belgium, and revealed a sensitivity of 0.841 and a
5 specificity of 0.579.¹⁴ This high sensitivity indicates the usefulness of SPICT™ for identifying
6 geriatric patients who will survive for at least 1 year, though the low specificity means it is
7 difficult to assess which patients will die within 1 year. Although one study explored the
8 prevalence and characteristics of patients in acute hospital settings in Scotland who required
9 palliative care approach as determined by SPICT™,¹² this issue has not been well examined in
10 family practice patients in Japan.

11

12 The aim of this preliminary observational study was to explore the prevalence and
13 characteristics of family practice patients in Japan who needed palliative care approach as
14 determined by SPICT™, with the hope that clarifying these issues will improve timely
15 conversation between patients and physicians regarding treatment preferences, goals of care,
16 and other end-of-life issues.

17

18 **Methods**

1 In this single-center cross-sectional study, eligible patients were enrolled consecutively as they
2 visited the chief researcher's office in the Yamato clinic from October 1 to 30, 2016. The
3 Yamato clinic, which employs five physicians who specialize in family practice, provides
4 ambulatory care and home visiting services for community residents. The Yamato clinic is
5 located in a rural area of Japan. It serves approximately 30 outpatients every day, about 80% of
6 whom are aged ≥ 65 years. In Japan, specialized palliative care is provided mainly in hospital
7 wards for cancer patients. Only a limited number of family physicians actively care for patients
8 in each community who are dying from conditions other than cancer. Therefore, the availability
9 of specialized and generalist palliative care services vary among communities.

10
11 We enrolled all patients aged ≥ 65 years who visited the chief researcher's outpatient clinic in
12 October 2016. We used Japanese version of SPICT™, April 2015 (SPICT™-J) to identify
13 patients who needed palliative care approach (Appendix 1: original version of SPICT™, April
14 2015).

16 *Development of SPICT™-J*

17 Japanese version of SPICT™, April 2015 (SPICT™-J) was developed according to a standard
18 international translation and back-translation procedure.¹⁵ The English-language items were

1 initially translated by two native Japanese speakers with experience in community palliative
2 care who were familiar with how words and phrases would be understood by family physicians
3 in Japan. The final version of **SPICT™-J** was developed based on comments from expert panel
4 members.

6 *Data collection*

7 The chief researcher recorded patients' demographic and clinical characteristics, specifically age,
8 sex, main underlying disease, use of care services, level of care needed,¹⁶ and living situation,
9 and subsequently assessed patients with **SPICT™-J**. In addition, the chief researcher reviewed
10 electronic medical records to determine if any of three types of advance care planning had been
11 recorded: 1) advance care planning for medical treatment, 2) durable power of attorney, and 3)
12 advance directives for cardiopulmonary resuscitation.

14 *Statistical analysis*

15 Patients were identified as **SPICT™-J** positive if two or more general indicators were present or
16 one or more clinical indicators were present. We used descriptive statistics as continuous
17 variables and categorical variables. Analyses were conducted with SPSS-J software (version
18 22.0; IBM, Tokyo, Japan).

2 Results

3 A total of 87 patients were included in this study. Patient characteristics are summarized in
4 Table 1. The mean age was 79.0 ± 7.4 years. Hypertension (44.8%) was the most common main
5 underlying disease, followed by dementia/frailty (18.4%) and cancer (9.2%). Eight patients
6 (9.2%) were identified as SPICT™-J positive. The mean ages of SPICT™-J-positive and
7 SPICT™-J-negative patients were 82.3 ± 8.3 years and 78.6 ± 7.3 years, respectively (Table 2).
8 The main underlying diseases in SPICT™-J-positive patients were heart/vascular disease
9 (37.5%) and dementia/frailty (25.0%), while that in SPICT™-J-negative patients was
10 hypertension (48.1%). The prevalence of general indicators for deteriorating health among
11 SPICT™-J-positive patients are shown in Table 3; all patients with heart/vascular disease asked
12 for supportive and palliative care or treatment withdrawal.

14 *Prevalence of general indicators of poor health in SPICT™-J-positive patients*

15 Table 3 shows the prevalence of general indicators of deteriorating health in SPICT™-J-
16 positive patients.

18 *Prevalence of advance care planning in SPICT™-J-positive patients*

1 Two of eight SPICT™-J-positive patients had implemented at least one form of advance care
2 planning. Only one patient had documented advance care planning for both medical treatment
3 and advance directives.

4 5 **Discussion**

6 This is the first study to explore the prevalence and characteristics of patients in family practice
7 who needed palliative care approach as identified by SPICT™-J.

8
9 One of the most important findings of this study is that 9.2% of family practice outpatients aged
10 ≥65 years were SPICT™-J positive, indicating that almost one in every ten patients needs
11 palliative care approach. This result is consistent with a previous population study in which
12 8.0% of patients aged ≥65 years were identified by the NECPAL as having palliative care
13 needs¹⁷. A recent qualitative interview study revealed that palliative care needs in different
14 domains arose during different stages of illness and varied by illness type and duration.¹⁸ Thus,
15 our results indicate that family physicians might not recognize patients' needs for palliative care
16 approach because such needs are not common in outpatients aged ≥65 years. Then,
17 multidisciplinary assessment is likely to be more accurately performed in outpatient clinics,
18 though several studies showed that physicians found the SPICT™ to be convenient and feasible

1 in inpatient settings,^{12,19,20}.

2

3 Another important finding is that only 25% of SPICT™-J-positive patients had implemented at
4 least one form of advance care planning. No previous research has explored the relationship
5 between the use of an identification tool and implementation of advance care planning. One
6 possible reason for fewer SPICT™-J-positive patient had advance care planning in this study is
7 that the chief researcher would initiate advance care planning based on his or her subjective
8 standards, which may not coincide with the timing suggested by SPICT™-J. Thus, our finding
9 that only 12.6% of family practice outpatients aged ≥65 years and two of eight SPICT™-J-
10 positive patients had advance care planning suggests that the use of SPICT™-J might facilitate
11 timely advance care planning in outpatient family practice clinics. Further research is needed to
12 explore this issue.

13

14 It is noteworthy that five of 16 patients with dementia or frailty asked for supportive and
15 palliative care or treatment withdrawal, though all five patients were SPICT™-J negative
16 (Appendix 2). In addition, these five patients were KPS ≥60% and were independent from
17 others for most care needs due to physical or mental health problems. This suggests that
18 SPICT™-J, which identifies the need for a palliative care approach if two or more general

1 indicators or one or more clinical indicators are present, might not have adequate sensitivity in
2 patients with dementia or frailty. Thus, physicians should be aware of the potential need for the
3 palliative care approach in family practice outpatients with these conditions, regardless of
4 performance status and physical care needs.

5 6 *Strengths and limitations*

7 One strength of this study is that it is the first to reveal the prevalence and characteristics of
8 family practice patients who need palliative care approach as identified by SPICT™-J. In
9 addition, this is the first study to validate the use of SPICT™-J in an outpatient setting. The
10 limitations of this study are its single-institution design and small sample size. Therefore,
11 caution is needed when interpreting the results. It is important to study the need for palliative
12 care approach in many different family practice settings to generalize the prevalence and
13 characteristics of patients who need palliative care approach.

14 15 **Conclusion**

16 Among outpatients aged ≥ 65 years in family practice, 9.2% required palliative care. A low
17 proportion had discussed advance care planning with their family physician. Family physicians
18 should carefully evaluate the need for palliative care in the outpatient clinic setting.

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6 Funding: This project received funding from the Japan Hospice/Palliative Care Foundation. The
7
8 funder had no role in the design and conduct of the study; the collection, management, analysis,
9
10 and interpretation of data; the preparation, review, or approval of the manuscript; or the decision
11
12 to submit the manuscript for publication.
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20 Ethical approval: This study was conducted in accordance with the ethical standards of the
21
22 Declaration of Helsinki and the ethical guidelines for epidemiological research issued by the
23
24 Ministry of Health, Labour and Welfare of Japan. The institutional review board of the
25
26 University of Tsukuba approved this study (No.1089).
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34 Author Disclosure Statement: The authors have declared no competing financial interests.
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40 Acknowledgements: The authors thank **Scott Murray** from the University of Edinburgh for
41
42 permitting the use of SPICT™ in this project.
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Table 2. Characteristics of SPICT™-J positive and negative patient (n=87)

	SPICT™-J positive†		SPICT™-J negative	
	n	%	n	%
	Age (mean ± standard deviation)	82.3 ± 8.3		78.6 ± 7.3
Sex				
Male (n=26)	3	37.5	23	29.1
Female (n=61)	5	62.5	56	70.9
Main underlying disease				
Cancer (n=8)	0	0	8	10.1
Dementia/frailty (n=16)	2	25.0	14	17.7
Neurological disease (n=7)	0	0	7	8.9
Heart/vascular disease (n=5)	3	37.5	2	2.5
Respiratory disease (n=3)	1	12.5	2	2.5
Kidney disease (n=1)	0	0	1	1.3
Hypertension (n=39)	1	12.5	38	48.1
Diabetes mellitus (n=1)	1	12.5	0	0
Osteoarthritis (n=1)	0	0	1	1.1
Level of care needed				
No certified care needs	4	50.0	66	83.5
Support need level 2	1	12.5	3	3.8
Care need level 1	1	12.5	4	5.1
Care need level 2	1	12.5	5	6.3
Care need level 3	1	12.5	1	1.3
Living situation				
Living with family (n=83)	8	100	75	94.9
Living alone (n=4)	0	0	4	5.1

†SPICT™ positive: ≥2 general indicators or ≥1 clinical indicators

Table 3. Prevalence of positive general indicators for deteriorating health among SPICT™-J positive patients (n=8)

	Dementia/frailty (n=2) *	Heart/vascular disease (n=3) *	Respiratory disease (n=1) *	Hypertension (n=1) *	Diabetes mellitus (n=1) *
KPS≤50% and reversibility is limited	1	1	0	0	1
Dependent on others for most care needs due to physical or mental health problems	1	0	0	0	0
Two or more unplanned hospital admissions in the past 6 months	0	0	0	0	0
Significant weight loss (5%) over the past 6 months or low body mass index	0	1	0	0	0
Persistent troublesome symptoms despite optimal treatment of underlying condition	0	1	0	1	0
Patient asks for supportive and palliative care or treatment withdrawal	0	3	1	1	1

* Each patient allowed to check multiple answers

Appendix 2. Characteristics of Dementia/frailty patient (n=16)

	SPICT™-J positive† (n=2)		SPICT™-J negative (n=14)		
	n	%	n	%	
Age (mean ± standard deviation)	76.0 ± 8.5		84.7 ± 4.0		
Sex					
	Male (n=5)	2	100	3	21.4
	Female (n=11)	0	0	11	78.6
Level of care needed					
	No certified care needs	1	50.0	7	50.0
	Support need level 2	0	0	2	14.3
	Care need level 1	1	50.0	2	14.3
	Care need level 2	0	0	3	21.4
	Care need level 3	0	0	0	0
Living situation					
	Living with family (n=83)	2	100	13	92.9
	Living alone (n=4)	0	0	1	7.1
SPICT™§ general indicators for deteriorating health					
	KPS*≤50% with limited reversibility	1	50.0	0	0
	Dependent on others for most care needs due to physical or mental health problems	1	50.0	0	0
	Two or more unplanned hospital admissions in the past 6 months	0	0	0	0
	Significant weight loss (5-10%) over the past 3-6 months or low body mass index	0	0	0	0
	Persistent troublesome symptoms despite optimal treatment of underlying condition	0	0	0	0
	Patient asks for supportive and palliative care or treatment withdrawal*	0	0	5	35.7
SPICT™§ clinical indicators of Dementia/Frail					
	Unable to dress, walk, or eat without help	0	0	0	0
	Eating and drinking less or swallowing difficulties	0	0	0	0

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Urinary and faecal incontinence	0	0	0	0
No longer able to communicate using verbal language or little social interaction	2	100	0	0
Femur fracture or multiple falls	0	0	0	0
Recurrent febrile episodes or infections, or aspiration pneumonia	0	0	0	0
Advanced care planning for medical treatment	0	0	2	14.3
Durable power of attorney	1	50.0	5	35.7
Advanced directive	0	0	0	0
Any advanced care planning	1	50.0	5	35.7

*KPS: Karnofsky Performance Status

*Chief researcher measured “patients asks for supportive and palliative care or treatment withdrawal” when patient spontaneous mentioned or part of a discussion between GP and patient.

§SPICT™: Supportive and Palliative Care Indicators Tool

† SPICT™-J positive: ≥2 general indicators or ≥1 clinical indicators

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Appendix 1. Supportive and Palliative Care Indicators Tool (SPICT™),

April 2015

Look for two or more general indicators of deteriorating health

- Performance status is poor or deteriorating (in bed or a chair for $\geq 50\%$ of the day); reversibility is limited
 - Dependent on others for most care needs due to physical or mental health problems
 - Two or more unplanned hospital admissions in the past 6 months
 - Significant weight loss (5–10%) over the past 3–6 months or a low body mass index
 - Persistent, troublesome symptoms despite optimal treatment of underlying condition(s)
 - Patient asks for supportive and palliative care or treatment withdrawal
-

Look for any clinical indicators of one or more advanced conditions

Cancer

- Functional ability deteriorating due to progressive metastatic cancer
- Too frail for oncology treatment or treatment is for symptom control

Dementia/frailty

- Unable to dress, walk, or eat without help
- Eating and drinking less or swallowing difficulties
- Urinary and faecal incontinence
- No longer able to communicate using verbal language or little social interaction
- Femur fracture or multiple falls
- Recurrent febrile episodes or infections, or aspiration pneumonia

Neurological diseases

- Progressive deterioration in physical or cognitive function despite optimal therapy
- Speech problems with increasing difficulty communicating or progressive swallowing difficulties
- Recurrent aspiration pneumonia, breathlessness, or respiratory failure

Heart/vascular disease

- NYHA* Class III/IV heart failure or extensive untreatable coronary artery disease with breathlessness or chest pain at rest or on minimal exertion
- Severe inoperable peripheral vascular disease

Respiratory disease

- Severe chronic lung disease with breathlessness at rest or on minimal exertion between exacerbations
- Needs long-term oxygen therapy

- Has needed ventilation for respiratory failure or ventilation is contraindicated

Kidney disease

- Stage 4 or 5 chronic kidney disease (eGFR#< 30 ml/min) with deteriorating health
- Kidney failure complicating other life-limiting conditions or treatments
- Discontinuation of dialysis

Liver disease

- Advanced cirrhosis with one or more complications in the past year:
 - Diuretic resistant ascites
 - Hepatic encephalopathy
 - Hepatorenal syndrome
 - Bacterial peritonitis
 - Recurrent variceal bleeding
- Liver transplant is contraindicated

* NYHA: New York Heart Association

#eGFR: estimate glomerular filtration rate

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3 Reviewer(s)' Comments to Author:

4 Reviewer: 1

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7 Comments to the Author

8 Thank you for the revised paper. Although there are clear improvements, I feel there are still some issues with this
9 paper. Maybe I ask too much within a limited word count available, but there must be some room to explain the
10 important points (and hold back on the less important details).

11
12
13 •First of all, some language editing is needed for the manuscript.

14 **Reply #1**

15 **Following the reviewer's recommendation, we used the language editing service.**

16
17
18 •The authors included information on sensitivity and specificity, as I requested. Unfortunately, I did not just mean
19 stating the numbers as you did, but also help the reader to understand what those numbers mean. Please, provide
20 some explanation.

21
22
23 **Reply #2**

24 **Following the reviewer's recommendation, we added the explanation regarding the sensitivity and specificity**
25 **of SPICT. (page 4, line 5-7 :This high sensitivity indicates the usefulness of SPICT™ for identifying geriatric**
26 **patients who will survive for at least 1 year, though the low specificity means it is difficult to assess which**
27 **patients will die within 1 year.)**

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31 •Reply 9-1: changing the label from 'nursing care' to 'home care' will not help the reader to understand what kind
32 of services are being offered / provided. Explain or leave out this information. The same goes for the pharmacist.

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34 **Reply #3**

35 **Following the reviewer's recommendation, we annotated "Home care service" and "Home visit service" in**
36 **the footnote of Table1. (#1 Home care services: Formal professional carer provide personal caring at home.**
37 **#2 Home visit pharmacist: Pharmacist provide the instruction on the use of drugs at home.)**

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41 •Reply 9-3: To provide some context for your study, it is important to provide some information as to what kind of
42 (specialized and generalist) palliative care services are provided in rural Japan for the patients in your study. (I
43 mean in the manuscript, not in a personal reaction to the reviewer).

44
45 **Reply #4**

46 **Following the reviewer's recommendation, we added the sentence "In Japan, specialized palliative care is**
47 **provided mainly in hospital wards for cancer patients. Only a limited number of family physicians actively**
48 **care for patients in each community who are dying from conditions other than cancer. Therefore, the**
49 **availability of specialized and generalist palliative care services vary among communities. (p 5, line 6-9.)**

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54 •Reply 9-4: I do understand that you cannot provide details in the methods section. It is helpful that you included
55 the reference. But I would like to suggest that you also include the first two lines of your reply as a footnote to the
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3 table (this does not influence word count, and helps the reader to understand the table without having to look up
4 another paper first).

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6 **Reply #5**

7 **Following the reviewer's recommendation, we annotated the information regarding "Level of care needed"**
8 **in the footnote of Table1.**
9

10
11 •Reply 11: I understand and will be very interested to read that paper.

12
13 **Reply #6**

14 **We are very happy to see your comment. Thanks for your constructive feedback.**
15

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17 •Reply 12 and 15: These newly added sentences are examples of why your paper needs some language editing (I'm
18 no native English speaker, so maybe I'm wrong).

19
20 **Reply #7**

21 **Following the reviewer's recommendation, we used the language editing service.**
22

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24 •Reply 16: This is not an answer to my point regarding comorbidity, frailty and palliative care.

25
26 **Reply #8**

27 **Following the reviewer's recommendation, we added the subanalysis with characteristic of dementia/frailty**
28 **patient in Appendix 2. Then we discussed the needs of palliative care approach with dementia/frailty in**
29 **terms of in discussion section.(page 9, line 14 –page 10, line 4.)**
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3 Reviewer: 2

4 Comments to the Author

5 I would like to thank the authors for resubmitting the article as the topic remains of interest and is quite
6 relevant.
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10 First of all, the resubmitted manuscript may have been edited hastily. There are many reworked section that
11 have become somewhat confused. Examples include, but are not limited to:

12 - As currently worded, the title suggests that SPICT is a palliative care approach rather than an identification tool.

13
14 **Reply #9**

15 **Following the reviewer's recommendation, we corrected the title as "Identified palliative care approach**
16 **needs with SPICT™ in family practice: a preliminary observational study"**
17

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19
20 - Page 4 lines 3-4 (last paragraph of the introduction) is oddly worded and has a few mistakes (e.g. "Belgians"
21 should be "Belgium").
22

23 **Reply #10**

24 **Following the reviewer's recommendation, we corrected the sentence with language editing service. (page 4,**
25 **line 3-5.)**
26

27
28 -Page 6 line 7 (the Statistical Analysis section) names the SPICT as "SPICT, April 2015" whereas previous sections
29 only named it the SPICT.
30

31 **Reply #11**

32 **We spelled out the "SPICT™, April 2015" in the Statistical Analysis section, because SPICT has another**
33 **version which is named "SPICT™, April 2016". Then we renamed "SPICT™, April 2015" as "SPICT™-J"**
34 **in this article. (First renamed in page 5, line 12.)**
35
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37
38 -Page 8 lines 1-3 (second paragraph of the discussion) is oddly worded, and mentions the need for physicians to
39 consider palliative care; however, it cites as a reason the small proportion of outpatient requiring palliative care.
40 The reason seems oddly worded and out of place in the context of the rest of the sentence.
41

42 **Reply #12**

43 **Following the reviewer's recommendation, we corrected the sentence as "Thus, our results indicate that**
44 **family physicians might not recognize patients' needs for palliative care approach because such needs are not**
45 **common in outpatients aged ≥65 years." (page 8, line 14-16) Also, we changed the conclusion as "Family**
46 **physician should carefully evaluate the needs of palliative care approach in outpatient clinic". (Abstract and**
47 **page 10, line 17-18.)**
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52 - At many different places, the authors refer to "Advance Care Planning" as "the light advance care planning" It is
53 strongly recommended that authors review overall flow and clarity of the article post-implementation of changes as
54 the current version can be confusing at times.
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Reply #13

Following the reviewer's recommendation, we reconsider the whole message regarding Advance care planning in this article. We thought SPICT could create timely advance care planning discussion as reviewer mentioned in another comment. Then we rewrote several sentences in Introduction and Discussion. (page 3, line 6-7. page 4, line 14-16. page 9, line 5-8, page 9, line 10-12.)

Second, the result section seems to skip over a lot of interesting results and fails to contextualize the results of Tables 2 and 3. It would be interesting to note some of the results from Table 2 and 3 here. As is, the section only provides information on the study sample, but fails to note the differences between the SPICT positive or SPICT negative patients.

Reply #14

Following the reviewer's recommendation, we added several result; ex. mean age, main underlying disease of SPICT-J positive and negative patients, from Table 2 and 3. (page 7, line 6-12.)

Third, the authors have done a good job of incorporating the reviewer's comments in the discussion; however, I would like to see more of a discussion on the role of SPICT can play in creating Advance Care Planning discussions between patients and their physician in outpatient settings. This to me would be one of the main takeaways of the study.

Reply #15

Following the reviewer's recommendation, we rewrote the sentences in Discussion. (page 9, line 10-12.)

Finally, here are some quick comments:

-Page 5, lines 1 -2 (1st paragraph of methods) I would rather see the percentage of patients that are aged 65+ rather than the percentage of patients aged 20+.

Reply #16

Following the reviewer's recommendation, we corrected as "80% of outpatients are aged ≥ 65 years". (page 5, line 5-6.)

-Page 9 line 1, the authors propose that patients may not want to have certified care needs. I would welcome and explanation as to why patients wouldn't want to be certified.

Reply #17

Because most Japanese people regard certified care needs as symbol of "dead wood". Then, many older patients are reluctant to have certified care needs. But, we deleted this paragraph in terms of other reviewer comment.

-Page 9 lines 10-11. Why is it important to study the link to hypertension and diabetes, specifically? I would assume the important thing here is to contextualize SPICT positive patients in terms of frailty and multimorbidity. The reason to focus on those two conditions is unclear to me.

Reply #18

As reviewer pointed out, we thought Page 9 lines 10-11(Furthermore, it is worth assessing the need for the palliative care approach in patients with hypertension and diabetes mellitus.) was non-contextualized in this article. Then we deleted this sentence.

-Page 9 lines 11-15. The article shouldn't aim to explain "operator" bias, but rather discuss the usage of the tool itself to contextualize ease of implementation in outpatient clinics, should the need be demonstrated. Presumably, the examples of "operator" bias provided here are inapplicable as all SPICT identifications were carried out by the chief researcher. What we are interested in is how easy the tool is to use and how implementation in all outpatient clinics could impact ongoing practice.

Reply #19

Following the reviewer's recommendation, we discussed the usage of the tool itself in discussion section. (page 8, line 16- page 9, line 1.)

-Table 1. I am confused as to what the difference is between Home Visit Nursing and Home Care Services

Reply #20

Following the reviewer's recommendation, we annotated "Home care service" and "Home visit service" in the footnote of Table1.

(#1 Home care services: Formal professional carer provide personal caring at home. #2 Home visit pharmacist: Pharmacist provide the instruction on the use of drugs at home.)

-Table 3 numbers don't add up properly (e.g Hypertension and Diabetes have n= 1 but multiple numbers within their respective columns)

Reply #21

Each patient allowed to check multiple answers. This means that all of 3 Heart/vascular disease patient asks for supportive and palliative care or treatment withdrawal. Similarly, hypertension patient had both persistent troublesome symptoms despite optimal treatment of underlying condition and asked for supportive and palliative care or treatment withdrawal. We added the footnote in Table 3 to explain the multiple answer form.

-Page 11 line 41. Authors acknowledge Scott Mary, but I presume they mean Scott Murray. This should be corrected.

Reply #22

Following the reviewer's recommendation, we corrected as Scott Murray.

Table 1. Patient characteristics (n=87)

	n	%
Age (mean ± standard deviation)	79.0 ± 7.4	
Sex		
Male	26	29.9
Female	61	70.1
Main underlying disease		
Cancer	8	9.2
Dementia/frailty	16	18.4
Neurological disease	7	8
Heart/vascular disease	5	5.7
Respiratory disease	3	3.4
Kidney disease	1	1.1
Liver disease	0	0
Hypertension	39	44.8
Diabetes mellitus	1	1.1
Osteoarthritis	1	1.1
Other	6	6.9
Care services utilised		
Home visit nursing	2	2.3
Home care services ^{#1}	0	0
Home visit pharmacist ^{#2}	0	0
Day care services	12	13.8
Specialised palliative care services	0	0
Level of care needed ^{#3}		
	1	

	No certified care needs	70	80.5
	Support need level 1	0	0
	Support need level 2	4	4.6
	Care need level 1	5	5.7
	Care need level 2	6	6.9
	Care need level 3	2	2.3
	Care need level 4	0	0
	Care need level 5	0	0
Living situation			
	Living with family	83	95.4
	Living alone	4	4.6
SPICT™§ general indicators for deteriorating health			
	KPS*≤50% with limited reversibility	3	3.4
	Dependent on others for most care needs due to physical or mental health problems	1	1.1
	Two or more unplanned hospital admissions in the past 6 months	0	0
	Significant weight loss (5-10%) over the past 3-6 months or low body mass index	1	1.1
	Persistent troublesome symptoms despite optimal treatment of underlying condition	2	2.3
	Patient asks for supportive and palliative care or treatment withdrawal**	21	24.1
	Advanced care planning for medical treatment	6	6.9
	Durable power of attorney	8	9.2
	Advanced directive	1	1.1
	Any advanced care planning	11	12.6
	SPICT™ positive†	8	10.3

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#1 Home care services: Formal professional carer provide personal caring at home.

#2 Home visit pharmacist: Pharmacist provide the instruction on the use of drugs at home.

#3 Level of care needed: The number given for care-need level is higher with greater care needs, such as bed confinement or dementia. Generally, many people with care-need level 5 are bedridden.

*KPS: Karnofsky Performance Status

※Chief researcher measured “patients asks for supportive and palliative care or treatment withdrawal” when patient spontaneous mentioned or part of a discussion between GP and patient.

§SPICT™: Supportive and Palliative Care Indicators Tool

†SPICT™ positive: ≥2 general indicators or ≥1 clinical indicators

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