

Factors contributing to a good death

enough treatment,' 'control over the future,' 'feeling that one's life is worth living,' 'unawareness of death,' 'pride and beauty,' 'natural death,' and 'preparation for death.' The eight optional domains were not important for all Japanese, however, some Japanese emphasized that these domains were significant. We calculated the domain score by summing up attributes. The range of each domain score was from 7 to 21. A high score indicated the achievement of a good death in each domain. The content validity of the GDI was ensured by our previous qualitative and quantitative studies. The GDI has sufficient factor validity and concurrent validity with overall satisfaction. The Cronbach's alpha of the GDI ranged from 0.74 to 0.95. The intraclass correlation coefficients (ICC) for test-retest reliability ranged from 0.44 to 0.72 except for 'not being a burden for others' (ICC = 0.38). The ICC of all 18 domains was 0.52; of the total of the 10 core domains it was 0.59 and of the total of the eight optional domains it was 0.50 [22]. The questionnaire and domains of the GDI are described in the Appendix.

Patient and family demographics

The patients' age, sex, and marital status were extracted from medical chart. We asked the bereaved family member's age, sex, health status during the caregiving period, relationship with the patient, frequency of attending the patient, religiousness, education, and household income during the caregiving period.

Medical variables and medical intervention in the last 48 h

The medical variables extracted from the charts were: place of care (PCU or general ward), type of room (private or not), duration since diagnosis, number of hospital days, short stay at home in the last 30 days, cancer stage, site of cancer, treatment experience, Do-Not-Resuscitate order (present or absent), cardiopulmonary resuscitation, and chemotherapy in the last 14 days. Medical interventions in the last 48 h that were extracted were: use of oxygen, palliative sedation, insertion/placement of tubes, parenteral medication, nonparenteral medication, artificial hydration, intravenous hyperalimentation, vasopressor, antibiotic, blood transfusion, and opioid medication. Palliative sedation was defined as a sedative drug such as midazolam or haloperidol that was administered to the patient with the aim of sedation and was recorded by the physician in the medical chart. The details of medical variables and medical interventions in the last 48 h in this regional cancer center have been described in another paper [24]. At the beginning of the review, 20 randomly selected medical charts were independently abstracted by two researchers

to assure inter-rater reliability. The average accordance rate was 93%.

Analysis

We first described participant characteristics such as patient and family demographics, medical variables, and medical interventions in the last 48 h. Second, we compared the evaluation of a good death between PCUs and general wards using Welch's *t* test. Finally, to explore factors contributing to a good death from the bereaved family member's perspective, we conducted multiple regression analyses. The dependent variables were 18 domains of the GDI. The explanatory variables were patient and family demographics, medical variables, and medical interventions in the last 48 h. Because of the distorted distribution, we did not use the following variables as explanatory variables: cardiopulmonary resuscitation, intravenous hyperalimentation, and blood transfusion. We adopted the backward variable selection method in the multiple regression analyses and we set the significance level to be included in the model as $P < 0.05$. The place of death was included in the model because medical treatment would be different between the two settings. All analyses were performed using the statistical package SAS version 9.1 (SAS Institute, Cary, NC).

Results

There were 388 potential participants. Subjects were excluded for the following reasons: recruitment in another questionnaire survey for bereaved family members ($n = 23$), serious psychological distress as determined by the primary physician ($n = 8$), cause of death was treatment related or due to injury ($n = 4$), no bereaved family members older than 20 ($n = 4$), and other ($n = 5$). Of 344 questionnaires sent to the remaining bereaved family members, 11 were undeliverable and 215 were returned (response rate, 65%). Among these, 23 individuals refused to participate and three responses were excluded due to missing data. In addition, 24 individuals refused the medical chart review. Thus, 165 responses were analyzed (48%).

Participant characteristics

Participant characteristics are shown in Table 1. Patient characteristics were as follows: the mean age \pm standard deviation age was 70 ± 11 , males made up 56% of the total, and 73% of the participants were married. As for bereaved family members, the mean age was 57 ± 13 , and 33% were males. As for medical variables, 74% of the patients were cared for in the PCU, the mean number of hospital days was 41 ± 38 , 21% of the

Table 1. Characteristics of participants (N = 165)

	n	%
<i>Patient demographics</i>		
Age, years (mean ± SD)	70 ± 11	
Sex (male)	92	56
Marital status (married)	121	73
<i>Bereaved family member demographics</i>		
Age, years (mean ± SD)	57 ± 13	
Sex (Male)	54	33
<i>Health Status</i>		
Good	42	25
Moderate	94	57
Fair	23	14
Poor	4	2
Relationship (spouse)	77	47
<i>Frequency of attending patient</i>		
Every day	119	72
4–6 days/week	14	8
1–3 days/week	21	13
Less than 1 day/week	8	5
<i>Religiousness</i>		
None	75	45
Fair	40	24
Moderate	28	17
Much	12	7
<i>Education</i>		
Junior high school	28	17
High school	69	42
College	36	22
University	30	18
<i>Household income (thousand yen)</i>		
–249	24	15
250–499	64	39
500–749	34	21
750–999	19	12
1000–	15	9
<i>Medical variables</i>		
<i>Place of care</i>		
General ward	43	26
Palliative Care Unit	122	74
Type of room (private)	145	88
Duration from diagnosis, m (mean ± SD)	27 ± 33	
Hospital days (mean ± SD)	41 ± 38	
Short stay at home in the last 30 days	14	8
<i>Cancer stage</i>		
Local	4	2
Regional	25	15
Distant metastasis	133	81
<i>Site of cancer</i>		
Lung	35	21
Gastrointestinal	82	50
Other	48	29
<i>Treatment experience (multiple answer)</i>		
Surgery	82	50
Chemotherapy	103	62
Radiotherapy	74	45
Do-Not-Resuscitate order (present)	160	97
Cardiopulmonary resuscitation	1	1
Chemotherapy in the last 14 days	7	4
<i>Medical intervention in the last 48 h</i>		
Oxygen inhalation	143	87
Palliative sedation	32	19
Insertion/placement of tubes	30	18
Parenteral medication	159	96

Table 1. (continued)

	n	%
Nonparenteral medication	78	47
Artificial hydration	140	85
Intravenous hyperalimentation	4	2
Vasopressor	12	7
Antibiotic	58	35
Blood transfusion	3	2
Opioid medication	143	87

Note: Several total percent do not equal 100% due to missing values.

total had lung cancer, and 50% had gastrointestinal cancer. As for medical interventions in the last 48 h, 19% received palliative sedation, 85% artificial hydration, 7% vasopressors, 35% antibiotics, and 87% received opioid medications.

Comparison of an evaluation of a good death between PCU and general wards

We show the comparison of evaluations of a good death between PCUs and general wards in Table 2. For patients whose last place of care was a PCU, participants evaluated that patients were more likely to achieve a good death for the domains 'environmental comfort' ($P < 0.001$), 'physical and psychological comfort' ($P = 0.04$), 'being respected as an individual' ($P = 0.01$), and 'natural death' ($P = 0.02$).

Factors contributing to evaluation of a good death (10 core domains)

We show the results of multiple regression analyses regarding 10 core good death domains in Table 3. 'Environmental comfort' correlated with place of care (PCU, $P < 0.001$), family member's older age ($P < 0.001$), and family member's poor health ($P = 0.03$). 'Life completion' correlated with patient's older age ($P < 0.001$), and family member's relationship (spouse, $P < 0.001$). 'Dying in a favorite place' correlated with patient's older age ($P = 0.003$), family member's relationship (spouse, $P < 0.001$), and family member's education ($P = 0.005$). 'Maintaining hope and pleasure' correlated with patient's older age ($P = 0.04$), early cancer stage ($P = 0.01$), duration since diagnosis ($P = 0.04$), and not receiving vasopressors ($P < 0.001$). 'Physical and psychological comfort' correlated with place of care (PCU, $P = 0.01$), patient's older age ($P = 0.02$), family member's older age ($P < 0.001$), not receiving palliative sedation ($P = 0.03$), and not receiving antibiotic ($P < 0.001$). 'Good relationship with medical staff' correlated with patient's older age ($P = 0.04$), family member's older age ($P = 0.01$), early cancer stage ($P < 0.001$), and receiving opioid medication ($P = 0.003$). 'Not being a burden to others' correlated with patient's older age ($P = 0.005$) and treatment experience (no

Factors contributing to a good death

Table 2. Evaluation of good death in PCU and general wards

	PCU		General wards		P-value
	Mean	SD	Mean	SD	
<i>Ten core domains</i>					
1. Environmental comfort	5.7	1.0	4.7	1.5	<0.001
2. Life completion	4.1	1.7	4.3	1.6	0.60
3. Dying in a favorite place	5.0	1.5	4.5	1.9	0.05
4. Maintaining hope and pleasure	4.1	1.5	3.8	1.7	0.31
5. Independence	3.6	1.8	4.0	1.8	0.10
6. Physical and psychological comfort	5.0	1.5	4.5	1.7	0.04
7. Good relationship with medical staff	5.6	1.0	5.3	1.3	0.07
8. Not being a burden to others	4.0	1.5	3.8	1.3	0.19
9. Good relationship with family	5.1	1.2	4.8	1.2	0.18
10. Being respected as an individual	5.9	0.9	5.4	1.3	0.01
<i>Eight optional domains</i>					
11. Religious and spiritual comfort	2.5	1.6	3.0	1.8	0.12
12. Receiving enough treatment	5.1	1.5	5.0	1.6	0.90
13. Control over the future	4.0	1.7	3.9	1.7	0.76
14. Feeling that one's life is worth living	5.2	1.3	5.2	1.3	0.89
15. Unawareness of death	3.6	1.4	4.0	1.5	0.10
16. Pride and beauty	3.4	1.3	3.5	1.6	0.83
17. Natural death	5.5	1.2	5.0	1.4	0.02
18. Preparation for death	4.8	1.4	4.8	1.3	0.92

Note: Statistical test comparing two places of care was by Welch's *t* test. PCU: Palliative Care Unit.

surgery, $P = 0.01$). 'Good relationship with family' correlated with place of care (PCU, $P = 0.007$), low household income ($P = 0.02$), type of room (private, $P = 0.03$), and not receiving artificial hydration ($P = 0.02$). 'Being respected as an individual' correlated with place of care (PCU, $P = 0.04$), patient's older age ($P = 0.003$), patient's marital status (not married, $P = 0.04$), family member's relationship (spouse, $P = 0.02$), early cancer stage ($P = 0.008$), treatment experience (chemotherapy, $P = 0.004$), type of room (private, $P = 0.03$), not receiving chemotherapy in the last 14 days ($P = 0.002$), and palliative sedation ($P = 0.03$).

Factors contributing to evaluation of a good death (optional domains)

We show the results of multiple regression analyses regarding eight optional good death domains in Table 4. 'Religious and spiritual comfort' correlated with family member's younger age ($P = 0.01$) and family's religiousness ($P < 0.001$). 'Receiving enough treatment' correlated with patient's older age ($P = 0.03$), family member's older age ($P = 0.01$), and opioid medication ($P = 0.009$). 'Feeling that one's life is worth living' correlated with the duration since diagnosis ($P = 0.04$). 'Unawareness of death' correlated with family member's older age ($P = 0.002$), patient's marital status (not married,

Table 3. Factors contributing to a good death (10 core domains)

	β	P-value
1. <i>Environmental comfort</i> ($R^2 = 0.219$)		
Place of care (PCU)	1.05	<0.001
Family member's age	0.03	<0.001
Family member's health	-0.31	0.02
2. <i>Life completion</i> ($R^2 = 0.257$)		
Place of care (PCU)	0.55	0.06
Patient's age	0.08	<0.001
Family relationship (spouse)	1.01	<0.001
3. <i>Dying in a favorite place</i> ($R^2 = 0.307$)		
Place of care (PCU)	0.10	0.76
Patient's age	0.03	0.003
Family relationship (spouse)	0.89	<0.001
Family member's education	-0.36	0.005
4. <i>Maintaining hope and pleasure</i> ($R^2 = 0.168$)		
Place of care (PCU)	0.34	0.32
Patient's age	0.02	0.04
Cancer staging	-0.72	0.01
Duration from diagnosis	0.01	0.04
Vasopressor	-2.21	<0.001
5. <i>Independence</i> ($R^2 = 0.018$)		
Place of care (PCU)	-0.54	0.11
6. <i>Physical and psychological comfort</i> ($R^2 = 0.312$)		
Place of care (PCU)	0.71	0.01
Patient's age	0.02	0.02
Family member's age	0.04	<0.001
Palliative sedation	-0.64	0.03
Antibiotic	-0.85	<0.001
7. <i>Good relationship with medical staff</i> ($R^2 = 0.196$)		
Place of care (PCU)	0.22	0.26
Patient's age	0.02	0.04
Family member's age	0.02	0.01
Cancer staging	-0.69	<0.001
Opioid medication	0.82	0.003
8. <i>Not being a burden to others</i> ($R^2 = 0.115$)		
Place of care (PCU)	0.52	0.06
Patient's age	0.03	0.005
Treatment experience (surgery)	-0.61	0.01
9. <i>Good relationship with family</i> ($R^2 = 0.115$)		
Place of care (PCU)	0.76	0.007
Household income	-0.18	0.02
Type of room (private)	0.87	0.03
Artificial hydration	-0.65	0.02
10. <i>Being respected as an individual</i> ($R^2 = 0.302$)		
Place of care (PCU)	0.48	0.04
Patient's age	0.02	0.003
Patient's marital status (married)	-0.46	0.04
Family relationship (spouse)	0.51	0.02
Cancer staging	-0.48	0.008
Treatment experience (chemotherapy)	0.52	0.004
Type of room (private)	0.73	0.03
Chemotherapy in the last 14 days	-1.31	0.002
Palliative sedation	0.46	0.03

Note: Multiple regression analyses with backward variable selection method ($P < 0.05$). Place of death was included in the model absolutely. PCU: Palliative Care Unit.

$P = 0.006$), family member's sex (female, $P = 0.01$), and not receiving palliative sedation ($P = 0.001$). 'Pride and beauty' correlated with patient's older age ($P < 0.001$), and opioid medication ($P = 0.003$). 'Natural death' was correlated with patient's marital status (not married,

Table 4. Factors contributing to a good death (8 optional domains)

	β	P-value
11. <i>Religious and spiritual comfort</i> ($R^2 = 0.369$)		
Place of care (PCU)	-0.25	0.35
Family member's age	-0.02	0.01
Family member's religiousness	0.99	<0.001
12. <i>Receiving enough treatment</i> ($R^2 = 0.137$)		
Place of care (PCU)	0.03	0.92
Patient's age	0.02	0.03
Family member's age	0.03	0.01
Opioid medication	1.10	0.009
13. <i>Control over the future</i>		
Place of care (PCU)	0.45	0.16
14. <i>Feeling that one's life is worth living</i> ($R^2 = 0.034$)		
Place of care (PCU)	0.06	0.83
Duration from diagnosis	0.01	0.04
15. <i>Unawareness of death</i> ($R^2 = 0.162$)		
Place of care (PCU)	0.31	0.23
Family member's age	0.03	0.002
Patient's marital status (married)	-0.70	0.006
Family member's sex (male)	-0.59	0.01
Palliative sedation	-0.72	0.001
16. <i>Pride and beauty</i> ($R^2 = 0.187$)		
Place of care (PCU)	-0.34	0.18
Patient's age	0.05	<0.001
Opioid medication	1.02	0.003
17. <i>Natural death</i> ($R^2 = 0.143$)		
Place of care (PCU)	0.26	0.27
Patient's marital status (married)	-0.72	0.002
Opioid medication	1.06	0.001
18. <i>Preparation for death</i> ($R^2 = 0.100$)		
Place of care (PCU)	-0.11	0.68
Patient's age	0.02	0.02
Frequency of family attending to patient	-0.32	0.02
Oxygen inhalation	-0.66	0.04
Opioid medication	0.72	0.05

Note: Multiple regression analyses with backward variable selection method ($P < 0.05$). Place of death was included in the model absolutely. PCU: Palliative Care Unit.

$P = 0.002$) and opioid medication ($P = 0.001$). 'Preparation for death' correlated with patient's older age ($P = 0.02$), high frequency of family attending to patient ($P = 0.02$), oxygen use ($P = 0.04$), and opioid medication ($P = 0.05$).

Discussion

This is the first study to explore factors contributing to the evaluation of a good death from the bereaved family member's perspective using reliable measures. We found, first, that death in the PCU was described as a good death for some aspects including 'environmental comfort,' 'physical and psychological comfort,' 'being respected as an individual,' and 'natural death.' These results suggest that Japanese inpatient PCUs provide the dying patient not only environmental comfort but also whole person care. On the other hand, there were no differences for the other good death domains. The preference for place of care

was influenced by the patient's concept of a good death [25]. The referral to a PCU should be according to the patient's preferences and provision of information regarding the merits of the PCU. Second, we investigated many factors contributing to evaluation of a good death including not only patient and family demographics but also some medical variables. We found that patient's and family member's age and other demographic factors correlated with the evaluation of a good death. In addition, we found that life prolongation treatment and aggressive treatment such as chemotherapy in the last 2 weeks were barriers to attainment of a good death.

The patient's and family member's age was correlated with many aspects of a good death. Tsai *et al.* reported that patient age was not associated with a good death by proxy (medical practitioner) good death assessment [26]. This discrepancy may be due to the person doing the rating. Japanese bereaved family members evaluate a good death for older patient age. In other words, these results suggest that death at younger ages tended to be evaluated as a bad death. The older the family member, the more positively the family would look on the patient's death. The patient's marital status (not married) was associated with several good death domains. This might be because the mean age of unmarried patients was higher than married patients (76 vs 67). The reason for the mean age difference would be from including 'widow' in the unmarried population. In addition, several other demographic variables contributed to a good death. We should note that demographic variables influenced the evaluation of a good death from the bereaved family member's perspective, and for the proper evaluation of the intervention for a good death, we ought to adjust for these variables in the analysis.

Life-prolonging treatments such as vasopressors, antibiotics, and artificial hydration were barriers to achieving a good death. According to a nationwide opinion survey, most Japanese do not desire unnecessary life-prolonging treatment [27]. Withholding this type of treatment might contribute to a good death in Japan. Chemotherapy in the last 2 weeks was also a barrier to a good death. In Western countries, aggressive treatment for the dying cancer patient was identified as an indicator of poor quality [28-30]. Our results confirmed these previous studies. Withholding aggressive treatment for the dying patient contributes to a good death.

Opioid medication was positively associated with a good death. In Japan, opioid consumption per capita is significantly lower than in Western countries [31]. Appropriate opioid medication might contribute to a 'good relationship with medical staff' and 'receiving enough treatment' in the good death domains because bereaved family

Factors contributing to a good death

members valued appropriate medical treatment. In addition, opioid use contributed to a good death in the domains of 'pride and beauty,' 'natural death,' and 'preparation for death.' In Japan, although there are misconceptions regarding opioid medications, use of opioids might contribute to a good death from the bereaved family's perspective [32].

Palliative sedation was negatively associated with the evaluation of a good death. Many patients with palliative sedation probably suffered from physical and psychological symptoms. Therefore, the bereaved family members would evaluate this situation as a bad death for these patients. As a result, palliative sedation would be negatively associated with physical and psychological comfort. That is to say, physically and psychologically distressed patients would be more likely to receive palliative sedation. In addition, Morita reported that 25% of bereaved family members were distressed with palliative sedation therapy [33], expressing guilt, helplessness, and physical and emotional exhaustion [34]. The distress of family members might have influenced the rating of a good death. On the other hand, palliative sedation was positively associated with 'being respected as an individual.' This might indicate that the family felt that the palliative sedation was alleviating the patient's symptoms. In Japan, clinical guidelines for palliative sedation therapy have been established [35]. In accordance with these guidelines, it is important to provide sufficient information about palliative sedation to the patient and family and to allow for discussion.

Having a private room was positively correlated with a 'good relationship with family' and 'being respected as an individual.' Staying in a private room enhanced the family relationships and patient's dignity. Cancer staging was correlated with 'maintaining hope and pleasure,' 'good relationship with medical staff,' and 'being respected as an individual.' Communication with advanced-stage cancer patients and their families is a relevant issue in Japan [36].

The limitations of this study are as follows: First, the response rate was 48% of potential participants. We believe, however, this is not a fatal flaw because the objective of this study was to explore factors contributing to evaluation of a good death. Second, this study was conducted at one regional cancer center. Third, although over 80% of deaths occurred on general wards in Japan, only 26% of the deaths in this institution occurred on general wards. Therefore, the results of this study might not be generalizable to other settings. Lastly, R^2 values of multiple regression analyses are generally low. This implies that other potential variables associated with a good death exist. It is necessary to explore these factors in further research.

Conclusions

In conclusion, we found that death in the PCU achieved a good death for some domains including 'environmental comfort,' 'physical and psychological comfort,' 'being respected as an individual,' and 'natural death.' We found that the patient's and family member's age and other demographic factors, life-prolonging treatment, and aggressive treatment were barriers to attainment of a good death. Moreover, opioid medication might have contributed to a good death. Withholding life-prolonging treatment and aggressive treatment from the dying patient and appropriate use of opioids may be associated with the achievement of a good death in Japan.

Appendix

Good Death Inventory (GDI)

How do you think the patient felt during the end-of-life period? Please check the appropriate number. 1: absolutely disagree, 2: disagree, 3: somewhat disagree, 4: unsure, 5: somewhat agree, 6: agree, 7: absolutely agree.

- I. Physical and psychological comfort
 - Patient was free from pain.
 - Patient was free from physical distress.
 - Patient was free from emotional distress.
- II. Dying in a favorite place
 - Patient was able to stay at his or her favorite place.
 - Patient was able to die at his or her favorite place.
 - The place of death met the preference of the patient.
- III. Maintaining hope and pleasure
 - Patient lived positively.
 - Patient had some pleasure in daily life.
 - Patient lived in hope.
- IV. Good relationship with medical staff
 - Patient trusted the physician.
 - Patient had a professional nurse with whom he or she felt comfortable.
 - Patient had people who listened.
- V. Not being a burden to others
 - Patient was not being a burden to others. (*)
 - Patient was not being a burden to family members. (*)
 - Patient had no financial worries. (*)
- VI. Good relationship with family
 - Patient had family support.
 - Patient spent enough time with his or her family.
 - Patient had family to whom he or she could express feelings.
- VII. Independence
 - Patient was independent in moving or waking up.
 - Patient was independent in daily activities.
 - Patient was not troubled with excretion.

- VIII. Environmental comfort
 Patient lived in quiet circumstances.
 Patient lived in calm circumstances.
 Patient was not troubled by other people.
- IX. Being respected as an individual
 Patient was not treated as an object or a child.
 Patient was respected for his or her values.
 Patient was valued as a person.
- X. Life completion
 Patient had no regrets.
 Patient felt that his or her life was completed.
 Patient felt that his or her life was fulfilling.
- XI. Receiving enough treatment
 Patient received enough treatment.
 Patient believed that all available treatments were used.
 Patient fought against disease until the last moment.
- XII. Natural death
 Patient was not connected to medical instruments or tubes.
 Patient did not receive excessive treatment.
 Patient died a natural death.
- XIII. Preparation for death
 Patient met people whom he or she wanted to see.
 Patient felt thankful to people.
 Patient was able to say what he or she wanted to dear people.
- XIV. Control over the future
 Patient knew how long he or she was expected to live.
 Patient knew what to expect about his or her condition in the future.
 Patient participated in decisions about treatment strategy.
- XV. Unawareness of death
 Patient died without awareness that he or she was dying.
 Patient lived as usual without thinking about death.
 Patient was not informed of bad news.
- XVI. Pride and beauty
 Patient felt burden of a change in his or her appearance. (*)
 Patient felt burden of receiving pity from others. (*)
 Patient felt burden of exposing his or her physical and mental weakness to family. (*)
- XVII. Feeling that one's life is worth living
 Patient felt that he or she could contribute to others.
 Patient felt that his or her life is worth living.
 Patient maintained his or her role in family or occupation.
- XVIII. Religious and spiritual comfort
 Patient was supported by religion.
 Patient had faith.
 Patient felt that he or she was protected by a higher power.
 (*) Inverse items

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Factors contributing to a good death

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One-week Short-Term Life Review interview can improve spiritual well-being of terminally ill cancer patients

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Abstract

Purpose: The primary aim of this study was to assess the efficacy of the Short-Term Life Review on the spiritual well-being, as well as anxiety, depression, suffering, and happiness of terminally ill cancer patients.

Method: Thirty patients reviewed their lives in the first session and they confirmed the contents in the album based on the life review in the second session. Duration of the treatment was one week. Measurement instruments included Functional Assessment Chronic Illness Therapy-Spiritual (FACIT-Sp), Hospital Anxiety and Depression Scale (HADS), Numeric Rating Scales of Suffering (from 0 to 6) and Happiness (from 1 to 7).

Results: After the therapy, the mean FACIT-Sp scores increased from 16 ± 8.2 to 24 ± 7.1 , anxiety score significantly decreased from 6.8 ± 4.7 to 3.0 ± 2.2 , depression score significantly decreased from 10.2 ± 4.7 to 6.6 ± 4.1 , suffering score significantly decreased from 3.4 ± 1.9 to 1.8 ± 1.4 , and happiness score significantly increased from 4.6 ± 1.9 to 5.6 ± 1.6 . Total HADS scores significantly decreased from 17 ± 8.6 to 9.5 ± 5.4 .

Conclusion: The Short-Term Life Review is feasible and may be effective in improving the spiritual and psychosocial well-being of terminally ill cancer patients.

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Keywords: psychotherapy; Short-Term Life Review; terminally ill cancer patients; spiritual well-being

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Introduction

Terminally ill cancer patients often experience spiritual distress, such as that engendered by searching for a meaning or purpose in life, problems associated with relationships with familiar people, or religious problems, in addition to depression or anxiety. Until recently, there have been few interventions for these problems. This study describes an intervention to ameliorate spiritual distress in terminally ill cancer patients.

Butler [1] reported that the life review process is a mean of reintegration and can give new significance and meaning to an individual's life. It is defined as 'the progressive return to consciousness of prior experience, which can be re-evaluated with the intention of resolving and integrating past conflict, thereby giving new significance to one's life.' The elderly are often confronted with lone-

liness, anxiety, worry about near-future death, and low ability in performing activities of daily living (ADL), resulting in low self-esteem or depression. To cope with these psychological problems, life review interviews have been used. Previous studies have shown the effects of life review on depression [2,3], self-esteem [2], and life satisfaction [4].

For cancer patients, however, there are few empirical studies on the effects of life reviews. Ando *et al.* [5] reported the effects of structured life review intervention on spiritual well-beings in terminally ill cancer patients. This study involved four sessions once in a week and spiritual well-being was measured with a quality of life (QOL) questionnaire, SELT-M [6]. After the life review interview, the patients' mood, positive thinking, and spirituality significantly increased. However, this study encountered a feasibility problem: sample patients did not complete the four sessions. At the

Table 1. Patient backgrounds

Primary tumor site		Gender
Lung	n = 8	Male (n = 8)
Stomach	5	Female (n = 22)
Pancreas	2	Age
Gallbladder	2	Mean age: 74 (total SD = 9.1)
Uterine	2	Marital states
Breast	1	Married (n = 29); widow (n = 11), widower (n = 3)
Kidney	1	Non-married (1)
Leukemia	1	Religion
Rectal	1	Christian (n = 4)
Tongue	1	Buddhism (n = 3), None (n = 22)
Colon	1	ECOG-PS
Mesothelioma	1	1 (n = 1), 2 (n = 3)
Myeloma	1	3 (n = 13), 4 (n = 13)
Lymphoma	1	Duration from the interview to patients' death
		Mean: 67 days

end of the study, the physical conditions of 9 of the 21 patients (about 30%) extremely deteriorated and failed to complete the psychotherapy process. Although structured life review may be effective in improving the spiritual well-being of terminally ill cancer patients, the long sessions decrease the feasibility; thus, we need a shorter version of life review therapy.

Dignity psychotherapy is a therapy for terminally ill cancer patients with shorter session time [7]. This involves only two or three sessions. Dignity is defined as 'quality or state of being worth, honored, or estimated' [8], and this therapy helps patients maintain their dignity. Patients review their lives with the aid of routine questions and the session is recorded, edited, and transcribed. In 2 or 3 days after, there is another session. The therapist reads the transcription to the patients, who give comments and make revisions. Patients reported a heightened sense of dignity, a sense of purpose, a sense of meaning, an increased will to live, and a decrease in distress. This study suggests the possibility that the life review interview is effective even for a short term.

We propose a new psychotherapy—the Short-Term Life Review—with short sessions for terminally ill cancer patients. Although there are at least four sessions in the structured life review to review a patient's life along developmental stages [9], Short-Term Life Review involves only two sessions. In the first session, patients review their lives, and the review is then recorded and edited. The therapist makes an album after the first session. In the second session, the patient and therapist view the album, and confirm the contents with appreciation.

The primary aim of this study was to assess the efficacy of the Short-Term Life Review on the spiritual well-being, as well as anxiety, depression, sufferings, and happiness, or terminally ill cancer patients.

Material and method

Participants

The subjects were cancer patients from the palliative care unit of two general hospitals and one home-care clinic. The inclusion criteria for this study were (1) patients with incurable cancer; (2) patients without cognitive impairment; (3) patients 20 years of age or older; and (4) patients for whom the primary physicians agreed would benefit from the psychological interventions. During the 11-month-study period, 35 patients were recruited through primary physicians. Table 1 shows the patients' background.

Interventions

Ethical aspect of this study was validated by both the board and the ethical committee of St. Mary's Hospital and St. Mary's College.

The Short-Term Life Review has two parts. In the first part, patients review their lives, and in the second, they re-evaluate, re-construct, and appreciate their life. The interviewer was a clinical psychologist (therapist). The interview procedure was based on a structured life review interview that was conducted individually, and the patient was asked to re-evaluate both good and bad memories. Question items were mainly based on the structured life review; however, they were not along developmental stages, and some items from Chochinov *et al.* [7] were added. The following questions were asked in the reviewing session: (1) What is the most important thing in your life and why? (2) What are the most impressive memories in your life? (3) In your life, what was the event that or the person who affected you the most? (4) What is the most important role in your life? (5) Which is the proudest moment of your life? (6) Is there anything about you that your family would need to

know, are there things you would want them to tell you, and, if possible, are there things you would want them to remember? (7) What advice or word of guidance would you wish to pass on to the important people in your life or to the younger generation?

The patient's narratives were recorded, and the therapist tried to listen to each word uttered by the patient. After the first session, the interview was first transcribed verbatim and the therapist made the album. To make the album, (1) key words in the answer to each question were selected. Words or phrases used by the patient were written in the album as often as possible; both good and bad things were included and feelings or re-framed thoughts—how he feels now—were written in the album. (2) The therapist pasted photos or drawings from various books or magazines that were related to the patients' words or phrases, to make the album more beautiful and more memory provoking. It took a week for the treatment.

Outcome measurements

To measure the effects of the Short-Term Life Review, we used the Japanese version of Functional Assessment Chronic Illness Therapy-Spiritual (FACIT-Sp) [10]. The validity and reliability of the FACIT-Sp Japanese version is well established [11]. Secondary end-points were anxiety, depression, suffering, and happiness. Anxiety and depression were measured by the Japanese version of the Hospital Anxiety and Depression Scale (HADS) [12,13]. Further, we used numeric rating scale about suffering (0–6) and happiness (1–7) [14] to compare the effects of the Short-Term Life Review with that of Dignity Psychotherapy by Chochinov *et al.* [7].

Statistical analysis

To evaluate the efficacy of the Short-Term Life Review in improving the patients' spiritual well-being, the Wilcoxon signed rank test was conducted on all scores of each scale before and after the Short-Term Life Review. Correlation analysis was used to examine the relationships between spiritual well-being and other variables. For intention-to-treat analyses, we additionally calculated the treatment effects using all patient data by the last observation carried forward methods.

Results

Five of the patients were excluded from this study because of unexpected deterioration in health. Thus, a total of 30 patients completed all sessions. Two patients' consciousness level decreased due to disease progression, one had severe and uncontrollable pain, one developed pneumonia, and one lost motivation to participate because of decreasing ADL.

Table 2 shows average and standard deviation scores. After the Short-Term Life Review, the mean FACIT-Sp scores increased from 16 ± 8.2 to 24 ± 7.1 ($Z = -4.2, P = 0.001$), the anxiety score significantly decreased from 6.8 ± 4.7 to 3.0 ± 2.2 ($Z = -3.8, P = 0.001$), the depression score significantly decreased from 10.2 ± 4.7 to 6.6 ± 4.1 ($Z = -3.7, P = 0.001$), the suffering score significantly decreased from 3.4 ± 1.9 to 1.8 ± 1.4 ($Z = -3.5, P = 0.001$), and the happiness score significantly increased from 4.6 ± 1.9 to 5.6 ± 1.6 ($Z = -3.2, P = 0.002$). Total HADS scores significantly decreased from 17 ± 8.6 to 9.5 ± 5.4 ($Z = -4.1, P < 0.001$).

Those changes remained statistically significant using the intention to treat analysis: The mean FACIT-Sp scores significantly increased from 16 ± 7.8 to 23 ± 7.1 ($Z = -4.2, P = 0.001$), the anxiety score significantly decreased from 7.0 ± 4.8 to 3.7 ± 3.4 ($Z = -3.8, P = 0.001$), the depression score significantly decreased from 10.4 ± 4.6 to 7.2 ± 4.4 ($Z = -3.7, P = 0.001$), the suffering score significantly decreased from 3.5 ± 1.8 to 2.1 ± 1.5 ($Z = -3.5, P = 0.001$), and the happiness score significantly increased from 4.5 ± 1.9 to 5.3 ± 1.7 ($Z = -3.2, P = 0.002$). Total HADS scores significantly decreased from 17 ± 8.6 to 11 ± 6.8 ($Z = -4.1, P < 0.001$).

As shown in Table 3, the FACIT-Sp significantly correlated with anxiety ($r = -0.37$), depression ($r = -0.76$), total HADS ($r = -0.73$), sufferings ($r = -0.70$), and happiness ($r = 0.57$).

Discussion

Effects of Short-Term Life Review

The first important finding is beneficial effect of the Short-Term Life Review on spiritual well-being in terminally ill cancer patients. The fact that the FACIT-Sp scores significantly increased after the Short-Term Life Review shows the effect of this

Table 2. Changes in outcome measures

	FACIT-SP	Anxiety	Depression	Total HADS	Sufferings	Happiness
Before	16 ± 8.2	6.8 ± 4.7	10.2 ± 4.7	17 ± 8.6	3.4 ± 1.9	4.6 ± 1.9
After	24 ± 7.1	3.0 ± 2.2	6.6 ± 4.1	9.5 ± 5.4	1.8 ± 1.4	5.6 ± 1.6
P value	$Z = -4.2,$ $P = 0.001$	$Z = -3.8,$ $P = 0.001$	$Z = -3.7,$ $P = 0.001$	$Z = -4.1,$ $P = 0.001$	$Z = -3.5,$ $P = 0.001$	$Z = -3.2,$ $P = 0.002$

Table 3. Correlation coefficients among variables at the post Short-Term Life Review

	FACIT-Sp	Anxiety	Depression	Total HADS	Sufferings	Happiness
FACIT-Sp	1.0					
Anxiety	-0.37*	1.0				
Depression	-0.76**	0.41*	1.0			
Total HADS	-0.73**			1.0		
Sufferings	-0.70**	0.47*	0.73**	0.75**	1.0	
Happiness	0.57**	-0.27	-0.57**	-0.55**	-0.47**	1.0

* $P < 0.05$, ** $P < 0.01$.

therapy on spiritual well-being of cancer patients. Regarding the secondary endpoint, there were significant differences between pre- and post-intervention scores for anxiety, depression, suffering, and happiness.

Why does the Short-Term Life Review affect these variables? The following considerations may be relevant: (1) a patient can express emotion or distress without being concerned about the feelings of family or others. Most Japanese prefer not to give burden to family or friends. Moreover, in the sessions, there is ample time for patients to discuss anything they wish to mention, sometimes in an informal manner. This is related to psychological purification. (2) Patients can confirm their acquisitions or roles in life, narrating their lives as they have lived them, and can re-evaluate both good and bad memories with emotional support from the therapist. (3) Patients can view, touch, and appreciate their own album. Through these processes, patients find meaning in life and re-evaluate it, and their spiritual well-being increases. This results in a decrease in anxiety, depression, and suffering and an increase in happiness.

Adapting these processes with the previous theoretical model [15,16], we can explain the effects of Short-Term Life Review. A patient has a purpose or a goal for his life when he is healthy. However, when he falls into serious illness, it is often difficult for him to attain his purpose or a goal because of unexpected serious illness, and he feels much distress. In this situation, when he receives the Short-Term Life Review, he can re-think and modifies his original purpose or goals into attainable ones, he feels a positive mood. Short-Term Life Review may contribute for a patient to reconstruct his life being congruent with cancer in his life.

Feasibility

It would be remarkable for Short-Term Life Review to have high feasibility. The percentage of patients deteriorating with this therapy was only 17%, although in the previous study [5] it was 30% for patients using the Structured Life Review. We describe some factors related to feasibility. (1) The Short-Term Life Review is completed in a week, and this short-term intervention enables terminally ill cancer patients to complete an intervention. (2)

Patients with very low functionality in ADL can participate because the patients review their lives while lying on bed. Both problem-solving therapy for cancer patients [17] and cognitive behavior therapy for cancer patients [18] have proved to be effective. However, patients need some level of ADL; they may plan their schedule and conduct and evaluate their behavior or cognition. It may be difficult to conduct interventions for terminally ill cancer patients with much lower ADL. Moreover, the effects of these psychotherapies on spiritual well-being have not been evaluated. To manage spiritual distress, there is meaning-centered group psychotherapy [19], in which groups of patients talk about the meaning or purpose of life over a period of 8 weeks. However, it may be very difficult for terminally ill cancer patients with performance status of 3 or 4 to reach the end of this therapy and to travel to the places where the group sessions are held. In comparison with these previous studies, the present findings suggest that the Short-Term Life Review can be more feasible. Moreover, the procedures used in this therapy are clearly defined and medical personnel other than psychotherapists may be able to conduct it in various situations.

The following is the one of the cases. When a therapist began the session at the patient's bedside, a patient became emotional and covered his eyes while narrating his story. The therapist tried to be a therapeutic listener. The patient had never expressed his emotions in front of his family; however, he could readily express his emotions and feelings in the sessions. He was able to describe his suffering and his regret that he would die in the near future. He had worked as a gardener for a long time. It was very hard to become a gardener. There had been some failures when he was running his own small company, and he had worked hard. He described his life with his family, particularly his children, who were under 20 years old. After the first session, the therapist made an album for the patient. In the second session, the therapist and patient talked about the album and looked at it together. The patient listened to the therapist and became emotional. The therapist prompted the patient to re-evaluate both his good and bad memories by asking him to reconstruct his life, with questions like 'How do you recognize that memory now?' and 'how do you feel now?' The

One-week Short-Term Life Review interview

patient wanted to live much longer, but had to reconstruct and integrate his life in a short time. He seemed to be satisfied that he was able to leave the park gardens, which many people are presently enjoying. He also expressed gratitude to his family and friends. He said 'These sessions were very helpful for me to set my memories in place.'

Comparison of Short-Term Life Review with Dignity Psychotherapy

There are both similarities and differences in methods between Short-Term Life Review and Dignity Psychotherapy. In both studies, patients review their lives for one time and there are some common questions. However, there are some differences between them. (1) In Dignity Psychotherapy, patients are offered the opportunity to address issues that matter the most to them or to speak of things they wish to remember the most as death draws near. In the Short-Term Life Review, the therapist does not intentionally prompt the patient to speak about the aftermath. (2) In the Short-Term Life Review, the therapist prompts the patient to review both good and bad memories to re-evaluate the bad memories and integrate them for patients' themselves; in Dignity Psychotherapy, however, bad memories or bad things are sometimes omitted from the transcript, because the transcript is for both the patient and his family. (3) In Dignity Psychotherapy, the therapist and the patient image something like an album in the second session, whereas in the Short-Term Life Review the therapist makes a small album based on the transcript after first session and both the patient and the therapists view the album together and the therapist promotes the patients to appreciate and re-evaluate their lives during the second session.

To compare the effects of the two therapies, we asked some common questions such as 'Are there anything that you would want your family to know about you, and are there things you would want them to tell?' In Dignity Therapy, the transcript is intended for those left behind. However, few patients answered this question and mentioned inheritance in the present study. There may be some cultural differences among patients. In future studies, we will select questions tailor made for each patient based on cultural differences.

Limitation

Finally, we mention the limitations of this study. First, there was no control group to enable us to assess the effects of this therapy because the terminally ill patients in this study were in a very serious physical and mental state and we could not burden them by asking questions that did not

contribute directly to their QOL. Second, the statistical significance in the measurement outcomes does not directly mean clinical significance. We were unable to conclude the clinical significance of this intervention due to the lack of established cut-off points of the FACIT-Sp. Third, almost all patients in this study were in palliative care ward or hospice care clinic, and the generalization of the findings to other situations cannot be automatically supported. Randomized controlled trial is promising to confirm the treatment benefits of the Short-Term Life Review interview.

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Measuring the regret of bereaved family members regarding the decision to admit cancer patients to palliative care units

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Abstract

Objective: The purposes of this study were to develop a bereaved family regret scale measuring decision-related regret of family members about the admission of cancer patients to palliative care units (PCUs) and to examine the validity and reliability of this scale.

Method: Bereaved families of cancer patients who had died in one regional cancer center from September 2004 to February 2006 received a cross-sectional questionnaire by mail. The questionnaire contained seven items pertaining to decision-related regret about the patient's admission to the PCU, the Care Evaluation Scale (CES), an overall care satisfaction scale, and a health-related quality-of-life (QOL) scale (SF-8). One month after receiving a completed questionnaire, we conducted a retest with the respondent.

Results: Of the 216 questionnaires successfully mailed to the bereaved families, we received 137 questionnaires and were able to analyze the responses for 127 of them, as the other 10 had missing data. By exploratory factor analysis and confirmatory factor analysis, we identified two key factors: intrusive thoughts of regret and decisional regret. This scale had sufficient convergent validity with CES, overall care satisfaction, SF-8, sufficient internal consistency, and acceptable test-retest reliability.

Conclusion: We have developed and validated a new regret scale for bereaved family members, which can measure their intensity of regret and their self-evaluation about their decision to admit their loved ones to PCUs.

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Keywords: regret; the bereaved family; decision-making; cancer; oncology

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Introduction

Researchers into end-of-life issues have recognized the value of what they have called a 'good death'. Critical to achieving a 'good death' is the 'completion of life,' which entails one's being prepared for dying, a feeling that one's life has been completed, no regrets about one's death, and family members who also have no regrets about one's death. Thus, minimizing the regret of cancer patients and their families is an important issue for achieving a 'good death' [1, 2]. However, bereaved

family members who have lost a loved one may find themselves experiencing self-blame feelings of regret along the lines of, 'I may have had to do it for my loved one' or 'I may not have had to do it for my loved one' [3].

Such feelings are a component of regret, the painful sensation that can result from recognizing that 'what is' compares unfavorably with 'what might have been' [4]. Early regret studies have found that a bad outcome resulting from action seemed more regrettable than the same bad outcome resulting from inaction [5] and that regretta-

ble feelings may exhibit a temporal reversal, with action evoking more regret in the short term and inaction evoking more regret in the longer term [6]. Subsequent research has categorized regrets in the daily decision context into three types according to their target: outcome regret, option regret, and process regret [7]. For each of these regret types, researchers have examined the effects of anticipated regret on decision-making as well as the effect of decision-making on experienced regret. Investigators have explored various theories and models to try to explain decision-related regret. Connolly and Zeelenberg, for instance, have recently proposed a new model called decision justification theory (DJT) [8]. DJT postulates two core components of decision-related regret: evaluation of the outcome and the feeling of self-blame for having made a poor choice. The overall feeling of regret at the decision is the combination of these two components. Thus DJT might offer a new explanation as to how people still feel regret even when they experience a situation in which the actual outcome is good. In contrast, most regret studies to date have evaluated regret by examining either the past decision or the self-blame feeling.

With respect to cancer patients, regret studies have typically focused on fatal decisions regarding what course of treatment to follow, e.g. [9] or whether to undergo a screening test [10]. Several studies of prostate cancer patients have established that patients can feel substantial regret following their cancer-related fatal decisions [11–13] and that such treatment-related regret is associated with worse current health-related quality of life (QOL) [11] and with worse quality of life and emotional well-being [12]. Future research should further explore how aspects of the fatal decision process affect later regret in cancer patients and their families.

Family members will face various decisions as well as the cancer patients themselves during the course of illness. However, no reports are available regarding decision-related irretrievable regret among family members within bereaved families. Cohesiveness and control are much greater within Japanese than within western families [14]. Also, the opinions of family members tend to exert greater influence on clinical decision-making in Japan than in the United States [15, 16]. The assessment of current irretrievable regret can retrospectively color past decision-making processes. Current irretrievable regret also can strongly affect future psychological status. Developing a vigilant decision-making model focused on the regret of bereaved family could help provide useful information for improving decision-making by cancer patients and their families. One important area of decision-making for cancer patients and their families involves the decision process by which physicians

initially refer patients to palliative care units (PCUs) [17]. This study thus endeavored to develop a bereaved family regret scale measuring irretrievable regret regarding the decision to admit cancer patients into PCUs and to examine the validity and reliability of this scale.

Methods

Participants and procedure

Our initial set of potential study participants comprised family members of patients who had died from September 2004 to February 2006 in Ibaraki prefecture, Japan. Inclusion criteria were as follows: the patient had died in a PCU; the patient was 20 years of age or older; and the patient had been admitted to the PCU at least three days prior to death. Exclusion criteria were as follows: the family member participant had already been recruited for another questionnaire survey for bereaved family members; the family member's primary physician determined that the participant would suffer serious psychological distress from participation in the study; the patient's cause of death was either directly treatment related or secondary to a treatment-related injury; or no member of the bereaved family was 20 years of age or older, capable of replying to a self-reported questionnaire, or aware of the patient's diagnosis of malignancy.

We mailed questionnaires to potential respondents in October 2006 and mailed reminders in November 2006 to those who had not responded. We asked respondents who did not wish to participate in the survey to indicate that they did not wish to participate and to return the questionnaire. To examine test-retest reliability, we sent a follow-up questionnaire one month after we received a completed questionnaire. The institutional review boards of Tsukuba Medical Center Hospital approved the ethical and scientific validity of this study.

Of the 224 questionnaires sent to eligible bereaved families, eight were undeliverable. We received 137 of the remaining 216 questionnaires, among which we had to exclude 10 due to missing data. Thus, we analyzed 127 responses (effective response rate, 59%). Among these 127 respondents who submitted analyzable test questionnaires, we sent retest questionnaires to the 121 bereaved families who responded during the study period; the other six families submitted their test responses too late to be included in the retest program. We received 82 retest questionnaires, among which we excluded 11 due to missing data. In total, we analyzed 71 retest questionnaires (effective response rate, 59%).

Measuring the decision-related regret of bereaved family

Measures

Decision-related regret about admission to PCUs

The questionnaires asked participants to rate on a 5-point self-reported Likert scale (strongly disagree–strongly agree) their level of agreement with each of seven possible regrets that they may have experienced regarding their decision-making in the past about admitting their loved ones to a PCU. Most previous studies have evaluated regret only for single statements, such as ‘how do you feel regret concerning XX’. In addition, we collected from prior studies three statements measuring the evaluation of decisions in the past [11, 18] and three other statements measuring severity and intensity of regret [19]. The evaluation-of-decision statements included, ‘I made the right decision’ and ‘I would make the same decision if I had to do it again’. The severity and intensity of regret statements included, ‘Once I start thinking about possible outcomes had I made a different decision, I find it difficult to think about other matters’ and ‘I had difficulty concentrating on daily activities because thoughts about regret kept entering my mind’. We constructed the wording of these statements based upon the palliative physicians’ and psychologists’ comments regarding understandability and wording.

Care evaluation scale, short version

We used the Care Evaluation Scale (CES), short version, to examine concurrent validity [20]. The questionnaire design has the respondent evaluating the necessity of improvement for each item on a 6-point Likert scale (improvement is not necessary–highly necessary). The short version of CES used in this study comprises 10 items covering the following 10 domains: help with decision-making for patient, help with decision-making for family, physical care by physician, physical care by nurse, psycho-existential care, environment, cost, availability, coordination of care, and family burden.

Overall care satisfaction

We assessed overall care satisfaction as part of our examination of concurrent validity by asking the following question, developed in a previous study [21]: ‘Overall, were you satisfied with the care provided in the hospital?’ The participant again responded on a 6-point Likert scale.

Health-related QOL

We used the SF-8 Japanese version [22], the short form, which is derived from the health-related QOL scale called the MOS 36-Item Short Form Health survey (SF-36). The eight items cover the eight concepts measured by the SF-36 (one item per concept), using a 5- or 6-point Likert scale. The

SF-8 provides two summary scores for physical and mental health: a Physical Component Scale and a Mental Component Scale. Scores for each item and summary measurements range from 0 to 100, with higher scores indicating better health. This scale includes questions such as the following: ‘Overall, how would you rate your health during the past 4 weeks’; ‘During the past 4 weeks, how much did physical health problems limit your usual physical activities (such as walking or climbing stairs)’; and ‘During the past 4 weeks, how much difficulty did you have doing your daily work, both at home and away from home, because of your physical health?’

Participant characteristics

We extracted information concerning the patient’s age, sex, and hospital days from a medical database. We asked the respondent bereaved family members to provide the following personal information about themselves: age, sex, health status during caregiving period, relationship with patient, frequency of attending the patient, presence of other caregivers, living status with patient, faith, education, and household income during the caregiving period.

Analysis

We utilized the Statistical Package for SPSS for Windows (Version 14.0) for all data analyses. To examine validity of our regret scale, we conducted an exploratory and a confirmatory factor analysis along with correlation analyses of our regret scale vs CES, overall satisfaction, and QOL. To examine the reliability of the regret scale, we assessed the internal reliability of its two subscales with Cronbach’s α coefficients. We used correlation coefficients to assess test–retest reliability.

Results

Characteristics of participants

Table 1 shows the demographic characteristics of the 127 participants included in the development analysis. We compared the demographic characteristics of these 127 participants with those of the 71 participants included in the validation analysis. We identified no significant differences between the two groups with respect to all demographic characteristics. Table 1 also shows descriptive statistics of decision-related regret, CES, overall satisfaction, and health-related QOL.

Validity

All of the seven items had a moderate degree of variance, and no item evidenced bias. Using these

Table 1. Characteristics of the bereaved family and patient

	N = 127 Patient numbers or mean ± SD	%
<i>Bereaved family</i>		
Age	55.85 ± 12.11	
Sex, male	44	34.6
<i>Health status during caregiving period</i>		
Good	33	26
Somewhat good	71	55.9
Bad	20	15.7
Strongly bad	2	1.6
<i>Relationship to patient</i>		
Spouse	61	48
Parent	42	33.1
Parent-in-law	13	10.2
Others	10	7.9
<i>Frequency of attending patient</i>		
Everyday	96	75.6
4–6 days/week	11	8.7
1–3 days/week	15	11.8
None	3	2.4
Presence of other caregivers	89	70.1
Living with patient	106	83.5
<i>Education</i>		
Less than high school	17	13.4
High school	56	44.1
Some college	28	22
Postgraduate	25	19.7
<i>Household income during caregiving period</i>		
Less than 250	13	10.2
250–500	58	45.7
500–750	25	19.7
750–1000	14	11
More than 1000	14	11
Care Evaluation Scale	75.49 ± 17.63	
Overall satisfaction	4.76 ± 0.96	
SF8; Physical Component Scale	48.78 ± 7.81	
SF8; Mental Component Scale	48.52 ± 6.37	
<i>Patient</i>		
Age	68.12 ± 12.28	
Sex, male	68	53.5
Hospital days	41.63 ± 33.90	

seven items, we conducted an exploratory factor analysis with promax rotation and the maximum-likelihood method. A minimal eigenvalue >1 yielded a 2-factor solution (Table 2), in which these two factors explained 74% of the variance. The correlation coefficient between the two factors was 0.32 ($p < 0.01$). Factor 1, which measured the degree of focus on regret, we named 'intrusive thoughts of regret'; factor 2, which measured evaluation of decision-making in the past, we named 'decisional regret.'

Then, to confirm the adequacy of the scale structures, we conducted a confirmatory factor analysis with these seven items. The results

indicated that item 3 was the item with highest factor loadings for both factors 1 and 2. We then constructed two models, shown in Figure 1, and compared the fit indexes of the two models. We adopted model 2 because its fit index was higher than that of model 1.

Table 3 contains the Pearson correlation coefficients showing the correlation between the scores of regret subscales and scores for CES, overall care satisfaction, and health-related QOL. As expected, the scores for CES and overall care satisfaction negatively correlated with each regret subscale. Physical QOL and mental QOL correlated with only the intrusive thoughts subscale.

Reliability

We assessed the internal reliability of the two subscales with Cronbach's α coefficients. Internal consistency was high for both 'intrusive thoughts of regret' ($\alpha = 0.85$) and 'decisional regret' ($\alpha = 0.79$) subscales. We then defined the sums for each sub-factor as the intrusive thoughts of regret score and the decisional regret feeling score, respectively. Using these scores, we assessed test-retest reliability using correlation coefficients. Among the 71 participants who responded in both surveys, correlation coefficients among subscales were moderately high for factor 1 ($r = 0.69$, $p < 0.01$) and factor 2 ($r = 0.70$, $p < 0.01$).

Discussion

The purpose of this study was to develop a PCU's admission-related regret scale for the bereaved family and to identify its validity and reliability. Among the bereaved families, decisional-related regret was irretrievable. Furthermore, most families had thought that their past decision was fatal for the patients. By exploratory factor analysis and confirmatory factor analysis, we identified two key factors: intrusive thoughts of regret and decisional regret. This study provided good evidence of the reliability and validity of these two factors within this Japanese population. Using these two factors, we developed a new regret scale for bereaved family members, which was able to measure their intensity of regret and their self-evaluation about their decision to admit their loved ones to PCUs. Since this regret scale contains a small number of items and a simple structure, the scale is open to broad use.

We were able to delineate the structure of our two factors, intrusive thoughts of regret and decisional regret. These two factors appear to correspond to the two core components of DJT (intensity of regret and their self-evaluation) [8]: Intrusive thoughts of regret correspond to intensity of self-blame feelings, and decisional regret corre-

Measuring the decision-related regret of bereaved family

Table 2. Results of exploratory factor analysis

Items	Mean \pm SD	Factor loadings		Communality
		F1	F2	
Once I start thinking about possible outcomes had I made a different decision, I find it difficult to think about other matters (v6)	1.88 \pm 1.15	0.90	0.22	0.67
I had difficulty concentrating on daily activities because thoughts about regret kept entering my mind (v7)	1.72 \pm 1.10	0.83	0.18	0.62
I could not stop thinking that the situation might have changed if I had made a different decision (v5)	2.03 \pm 1.16	0.81	0.33	0.59
It was the right decision (v1*)	1.63 \pm 0.75	0.30	0.99	0.82
I would make the same decision if I had to do it again (v2*)	1.73 \pm 0.90	0.25	0.89	0.79
I regret the decision that was made (v3)	1.69 \pm 0.08	0.56	0.57	0.48
I am satisfied with the decision (v4*)	2.06 \pm 1.04	0.12	0.49	0.26

*Reversed item.

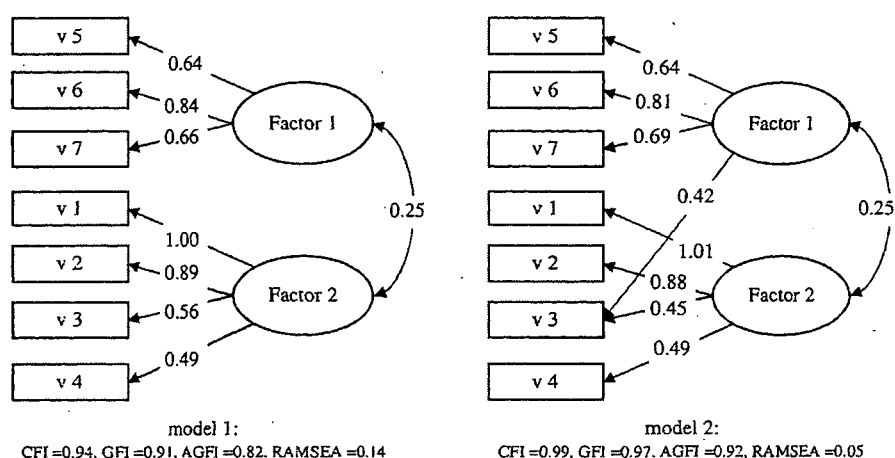


Figure 1. The results of confirmatory factor analysis and fit indices

Table 3. Criterion validity as measured by Pearson correlations

Scales	CES	Overall care satisfaction	Physical QOL	Mental QOL
F1: intrusive thoughts about regret	-0.33**	-0.33**	-0.22*	-0.37**
F2: decisional regret	-0.27**	-0.46**	-0.08	-0.09

* $p < 0.05$, ** $p < 0.01$.

sponds to evaluation of decision-making and subsequent outcome. Each of the two factors contained four of the seven statements; one statement overlapped both factors. The overlapping statement, 'I regret the decision that was made', directly represented the overall regret of bereaved family members about their decision-making. Our regret scale could thereby measure three aspects of the bereaved families' regret: overall degree of regret, evaluation of decisional regret, and severity of intrusive thoughts about regret. Evaluation of the details of regret assists greatly in formulating an appropriate plan of regret management and therapy. Several recent studies have examined regret management and therapy for cancer patients [23,24]. However, to develop better evidence-based regret management or regret therapy, future research should explore the effects of

the decision-making process or options on subsequent irretrievable regrets. We believe that psychosocial theories such as reference comparisons theory or justifications theory can provide a basis for utilizing our new scale to establish effective regret management and therapy.

We found good evidence for the reliability and validity of our regret scale. Examination of the convergent validity of this scale determined that the score of CES and overall satisfaction negatively correlated with each regret subscale, indicating that this regret scale could adequately measure regrets regarding decision-making about admission to PCUs. On the other hand, both physical and mental QOL scores did not correlate with decisional regret but correlated only with intrusive thoughts of regret. This pair of findings indicates that the bereaved family's QOL is not influenced by

how much they regret their decision but rather by how often their regretful thoughts come to mind. The finding that intrusive thoughts of regret were associated with health-related QOL is in accord with the results of previous studies among adults [25]. We believe that decisional regret and intrusive thoughts of regret comprise different concepts and thus should be measured separately. Our findings suggest that intrusive thoughts of regret have the potential to affect the health-related QOL of bereaved family members.

One limitation of our study is the somewhat small sample size of our study, especially for the retest survey. We sent out retest questionnaires one month after we received a completed questionnaire. Although our study design assumed that the regret of the bereaved family did not change during this one-month period, empirical confirmation of this assumption is lacking. Our analysis of test-retest reliability yielded correlation coefficients among subscales that were moderately high.

Utilizing this new scale to assess the regret of the bereaved family should help clinicians evaluate decision-making about the admission of cancer patients into PCUs retrospectively. Use of this scale in multi-institutional outcome surveys should assist evaluation of quality differences between institutions in the decision-making process. Developing a vigilant decision-making model of cancer patients and their families and examining the association of this model with irretrievable regret will require future studies in order to provide useful information about decision-making aids. Our new scale thus represents the first step for these future studies.

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ORIGINAL ARTICLES

Unexpectedly high prevalence of akathisia in cancer patients

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ABSTRACT

Objectives: Complications of neuropsychiatric disorders are often detected in cancer patients. Adjustment disorders, depression, or delirium are common psychiatric disorders in these patients, and drug-induced neuropsychiatric problems are sometimes referred for psychiatric consultation. Prochlorperazine and other antiemetic drugs that are phenothiazine derivatives are also reported to cause akathisia due to the blockade of the dopamine receptor in the central nervous system, but the prevalence of akathisia in patients undergoing cancer treatment has not been reported. This study seeks to explore the prevalence of such drug-induced syndromes (e.g., akathisia) in this population.

Methods: This present study was a prospective study. The subjects of this study were 483 consecutive patients with cancer who had been referred to the Department of Psychiatry in Kanagawa Prefecture Cancer Center from February 1, 2004, to November 30, 2005. Trained psychiatrists conducted a nonstructured psychiatric interview and neurologic examination to establish psychiatric diagnoses according to DSM-IV and the presence or absence of drug-induced extra pyramidal symptoms. The past and current medications used in their cancer treatment were also examined in detail for an accurate evaluation.

Results: A psychiatric diagnosis was made in 420 (87.0%) of the 483 cancer patients examined, and akathisia, a drug-induced movement disorder, was unexpectedly prevalent among the patients; 20 of 420 (4.8%) patients had developed akathisia from an antiemetic drug, prochlorperazine.

Significance of results: Diagnosing such adverse drug reactions may be difficult due to complicating factors in cancer treatment, and the inner restlessness observed in akathisia is likely to be regarded as a symptom of a primary psychiatric disorder. The authors suggest that oncologists should optimize the use of antiemetic drugs and be aware of akathisia as a possible complication of cancer treatment.

KEYWORDS: Adverse drug reaction, Akathisia, Cancer, Prochlorperazine, Psychiatric referral