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Development of a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan: A modified Delphi method

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Abstract

Background: There is currently no consensus syllabus of palliative medicine for undergraduate medical education in Japan, although the Cancer Control Act proposed in 2007 covers the dissemination of palliative care.

Aim: To develop a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan using a modified Delphi method.

Design: We adopted the following three-step method: (1) a workshop to produce the draft syllabus; (2) a survey-based provisional syllabus; (3) Delphi rounds and a panel meeting (modified Delphi method) to produce the working syllabus. Educators in charge of palliative medicine from 63% of the medical schools in Japan collaborated to develop a survey-based provisional syllabus before the Delphi rounds. A panel of 32 people was then formed for the modified Delphi rounds comprising 28 educators and experts in palliative medicine, one cancer survivor, one bereaved family member, and two medical students.

Results: The final consensus syllabus consists of 115 learning objectives across seven sections as follows: basic principles; disease process and comprehensive assessment; symptom management; psychosocial care; cultural, religious, and spiritual issues; ethical issues; and legal frameworks. Learning objectives were categorized as essential or desirable (essential: 66; desirable: 49).

Conclusions: A consensus syllabus of palliative medicine for undergraduate medical education was developed using a clear and innovative methodology. The final consensus syllabus will be made available for further dissemination of palliative care education throughout the country.

Keywords

Delphi method, education, palliative medicine, syllabus, undergraduate

Introduction

Education is crucial for the useful dissemination of palliative care in society, which was denoted as one of the most important tasks by the Cancer Control Act proposed in 2007 in Japan. Despite this, palliative care needs to be more widely applied in Japan.[1] Insufficient access to education about palliative medicine is one of the reasons underlying this slow systemic application of basic measures,[2] despite publication of a syllabus of palliative medicine for postgraduate training by Hospice Palliative Care Japan in 2001[3] and by the Japanese Society for Palliative Medicine in 2004.[4]

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Japanese undergraduate education in this area has relied partially on the medical education model core curriculum (2007 revised edition)[5] and criteria of the national qualifying examination for physicians established in 2008.[6] However, these documents were abstract and restrictive, and not well reviewed by experts in palliative medicine. Some Western countries have attempted to develop such a syllabus by surveying specialists,[7] carrying out needs assessment,[8] and setting up working groups.[9,10] Of particular note, Paes and Wee[11] in the UK developed a palliative medicine syllabus with a clear methodology based on the Delphi method. However, this same syllabus is not easily applicable in Japan due to environmental differences in medical education and surrounding legal, social, and cultural issues.

Several investigations into palliative care education were conducted in Japan by Hirakawa et al.[12] and the Society for Palliative Care in University Hospitals in 1995, 1998, 2001, 2005, and 2009 (unpublished data). According to these investigations, palliative medicine is taught in all medical schools throughout Japan, but to differing amounts and with variable content. In contrast, another study revealed a need for high-quality and standardized education on palliative medicine among medical students[13] as a big factor in improving quality palliative care throughout the country.

The aim of this study was to develop a nationwide consensus syllabus of palliative medicine for undergraduate medical education in Japan. Herein, we clarify the essential learning objectives in palliative medicine that medical students should achieve, based on a modified Delphi method.

Methods

Different methodologies have been used to develop educational syllabuses.[7–11] A consensus method using the subjective opinions of several experts is appropriate way to develop a syllabus with clear methodology. We adopted the following three-step method to develop a nationwide consensus syllabus for palliative medicine for undergraduate medical education in Japan: (1) a workshop to produce the draft syllabus; (2) a survey-based provisional syllabus; (3) Delphi rounds and a panel meeting (modified Delphi method) to produce the working syllabus (Figure 1).

Step 1: Workshop for a draft syllabus

We first determined a structure and sections of the draft syllabus based on a literature review.[11,14–21] Secondly, we held a workshop to develop the provisional syllabus, involving six experts: four coordinators for undergraduate medical education in palliative medicine, one expert from the Japanese Society for Palliative Medicine, and one expert from Hospice Palliative Care Japan. Participants of the workshop were asked to review related syllabuses and reports.[3–6,11–23]

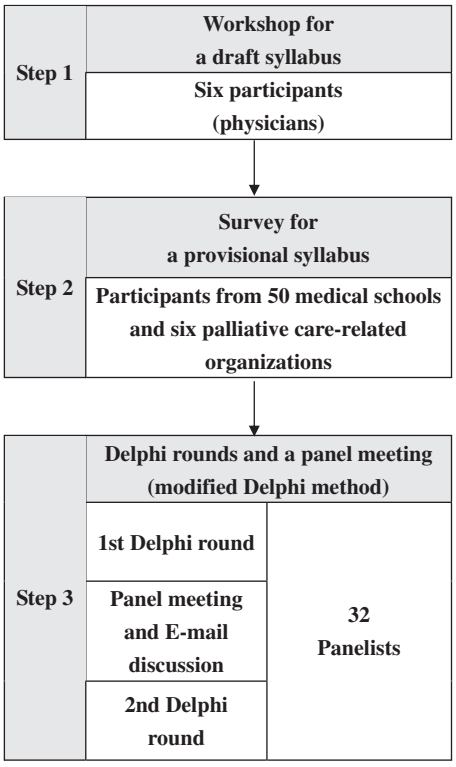

Figure 1. Three-step method to develop a consensus syllabus of palliative medicine for undergraduate medical education.

Step 2: Survey for a provisional syllabus

We next used the following methods to gather educator's real voices from medical schools and palliative care-related organizations and to assess inclusion characteristics and adequacy of the draft syllabus. Firstly, we contacted the medical directors of all 80 medical schools in Japan by mail in December 2009 and asked them to participate in the study and to recommend a coordinator for undergraduate medical education in palliative medicine as a panelist. We mailed them the draft syllabus and requested that a person in charge of education in palliative medicine cooperated with representatives from the nine palliative care-related organizations listed in Table 1; all agreed in January 2010. We investigated the adequacy of each learning objective to be achieved by graduation that would guarantee competency to manage patients with their mentor as a resident physician, as described in the syllabus, using a four-point Likert-type scale: 0 (essential), 1 (desirable), 2 (unnecessary), and 3 (unsure). We similarly examined the difficulty of each learning objective on a second

Table 1. List of palliative care-related organizations participating in this study

Hospice Palliative Care Japan
Japanese Academy of Family Medicine
Japan Geriatrics Society
Japan Psycho-Oncology Society
Japan Society of Clinical Oncology
Japanese Society of Cancer Nursing
Japan Society for Medical Education
Japanese Society of Medical Oncology
Japanese Society for Palliative Medicine

four-point Likert-type scale: 0 (easy), 1 (adequately), 2 (difficult), 3 (too difficult). Panelists who rated objectives as 2 or 3 were asked for a reason. We also invited the medical directors to add any learning objectives that they felt were missing. Based on the results, the authors discussed each learning objective carefully and revised the provisional syllabus accordingly.

Step 3: Delphi rounds and a panel meeting (modified Delphi method)

We next adopted a modified Delphi method to achieve the consensus. Some expert participants had previously reported difficulty in scoring a particular learning objective without knowing exactly how it was going to be taught, and this was seen as a limitation of the original Delphi method.[11] A modified Delphi method that provides panelists with the opportunity to discuss their decisions and opinions face to face between the rating rounds[23] was used in several earlier investigations to develop a standard[22] and a guideline[24,25] in palliative medicine. This also facilitates the participants' understanding of each learning objective, and the opportunity to make each objective more understandable and achievable.

Panel member selection

There are no universally accepted criteria for the selection of panel members, but generally, using multidisciplinary panels best represents the variety of specialties available.[22] To gather a wide variety of opinion, we therefore chose panel members from the following groups: educators, representatives from palliative care-related organizations, patients and families as consumers of palliative care, and medical students to reflect the end user's viewpoint. In addition, we determined that no one group was represented by more than 50% of all panelists. The following panelists were finally selected based on the criteria below: (1) coordinator for undergraduate medical education of palliative medicine in medical schools (16 people; all physicians, 50% of all panelists); (2) representatives from palliative care-related organizations (eight people; seven physicians, and one nurse, 25%); (3) palliative care physicians with adequate experience (four people, 12.5%); (4) medical students (two people, 6.25%); and (5) patient and bereaved family (one of each, 6.25%). We could not select a palliative care physician to represent the Specialty Board of Palliative Medicine, Japanese Society for Palliative Medicine at the time of panel member selection due to availability. The board certification started in March 2010.

Criterion 1. Based on the Society for Palliative Care in University Hospitals investigation performed in 2009, 20 medical schools that teach palliative medicine across more than seven units over six years (until graduation) were selected. We chose 18 of those medical schools based on convenience and contacted the medical director by mail to participate in this study and to recommend a coordinator for undergraduate education in palliative medicine as a panelist. Of these medical schools, 16 accepted the invitation to take part.

Criterion 2. We contacted all eight nationwide palliative care-related organizations in Japan (Table 1), except for the Japanese Society for Palliative Medicine, by mail and asked them to participate in this study and recommend a panelist. As a condition of being a panelist, we proposed an extensive knowledge of palliative medicine and/or teaching experience of palliative medicine in a medical school. All the organizations contacted agreed to take part in this study.

Criterion 3. To choose the palliative care physicians, we contacted the Japanese Society for Palliative Medicine by mail and asked them to recommend panelists, including more than one physician engaged in home palliative care, more than one physician working as a member of a specialist palliative care team, and more than one physician practicing in a certified palliative care unit. We also proposed teaching experience in a medical school as a requirement for panelists.

Criterion 4. We chose two fifth or sixth-year medical students, who were interested in palliative medicine and understood its general concept, from the medical schools of the authors. We asked them to participate in this study by mail and obtained consent.

Criterion 5. We contacted the not-for-profit Cancer Patients Support Organization in Tokyo by mail and asked them to participate in this study and to recommend one cancer patient and one family member of a cancer patient as a panelist. We obtained consent from both panelists.

Data collection and analysis of the modified Delphi method

Firstly, we implemented a survey by mailing a questionnaire with the outline of a provisional syllabus to each panelist in February 2010. Each member was asked to rate the adequacy of each learning objective using a four-point Likert-type scale that enabled unnecessary learning objectives (not so important and unnecessary) to be eliminated, as follows: 0 (essential), 1 (desirable), 2 (not so important), and 3 (unnecessary). The remaining learning objectives could then be split into those that all students should achieve (essential) and those that a high-achieving student might achieve or a more generous curriculum might be able to deliver (desirable). In addition, each member was asked to rate the level of the difficulty in each learning objective using a four-point Likert-type scale to render each learning objectives more achievable if necessary, as follows: 0 (easy), 1 (adequately), 2 (moderately difficult), and 3 (too difficult). Panelists who rated objectives as 2 or 3 were again asked to give a reason. The frequency distribution and mode for each learning objective were determined, and consensus was defined as 75% of panel members rating the learning objective as essential or desirable. If more than 75% of panelists rated the learning objective as 2 or 3, it was excluded from the syllabus. A summary of the first-round data was sent to each panelist and author, and disagreements were discussed by email over one week. To gather the patients' and families' voices, one of the researchers (YK) explained the contents of each learning objective and any medical jargon to the lay panelists at the half-day meeting held before the first Delphi round.

Secondly, an expert panel meeting was convened for February 2010 in Tokyo. The purpose of the panel meeting was to give the panelists the opportunity to discuss their rating, controversial issues about the syllabus, and share their opinions and experience face to face based on the first-round survey results. One week before the panel meeting, the survey results showing how the panel as a group rated each learning objective was sent to all the panelists by email. At the meeting, one of the researchers (YK) facilitated the group. In the discussion, the group carefully reviewed the reasons for discrepancies among their ratings in the first-round survey (i.e. genuine disagreement, difficulty of determining each learning objectives, or wording problems). The group particularly discussed those learning objectives that (1) less than 75% of panelists rated essential or desirable, and (2) more than 10% of panelists rated too difficult. Accordingly, we tried to revise these learning objectives to be more adequate and achievable. Researchers encouraged the students, patients, and families to contribute their opinions throughout the meeting, explaining the contents of the syllabus and any medical jargon as needed. After that panel meeting, a summary of the meeting and a revised version of the syllabus were sent to all panelists to confirm corrections and gather any additional options.

Thirdly, we implemented a second-round survey using the same method as in the first-round survey, except that we did not ask respondents to rate the adequacy of the difficulty of each learning objective. We planned to continue Delphi rounds until the consensus was achieved. We devised the final version of the syllabus in advance, based on the following rules adapted from previous research[11] to better express the importance of each learning objective: (1) essential, more than 75% of panelists rated it as essential; (2) essential in italics: 50%–75% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable; (3) desirable: less than 50% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable; (4) desirable in italics: less than 50% of panelists rated the objective as essential and 50%–75% of panelists rated it as essential or desirable. This study was conducted from October 2009 to March 2010. The protocol was approved by the Institutional Review Board of the Graduate School of Comprehensive Human Sciences, University of Tsukuba. All statistical analyses were performed with the Statistical Package for the Social Sciences (v 16.0J; SPSS Japan, Tokyo, Japan).

Results

Developing the provisional syllabus (Steps 1 and 2)

In Step 1, the draft syllabus comprising 126 learning objectives across seven sections was designed based on the workshop with six experts and the authors.

In Step 2, we contacted all 80 medical schools in Japan to participate in devising the provisional syllabus and recommend coordinators for a national undergraduate medical course in palliative medicine. Sixty-one medical schools (76%) answered this request, and 50 medical schools (63%) cooperated in the final study. We also invited eight other people from palliative care-related organizations to participate in this study as panel members, of whom six people consented to take part. Among 56 people contacted, 49 returned an answer (response rate, 88%). Of these, 39% of participants had clinical experience in palliative care of more than five years and 59% had experience in palliative care education of more than five years (Table 2). In the survey, 123 of the 126 learning objectives were judged to be essential or desirable by more than 75% of respondents, and 40 items were judged to be too difficult by more than 10% of respondents. The ratings of

Table 2. Background of participants in Step 2 (survey for the provisional syllabus) of this study ($n = 49$)

Sex	
Male	40
Female	9
Specialty	
Physician	
Palliative medicine	13
Medicine	4
Surgery	8
Anesthesiology	19
Psychiatry	2
Others	3
Clinical experience of more than 10 years (%)	48 (98%)
Clinical experience in palliative care of more than 5 years (%)	19 (39%)
Experience in palliative care education of more than 5 years (%)	29 (59%)

each section of the syllabus are summarized in Table 3. We analyzed and discussed the reasons for disagreement and adequacy of difficulty, and then revised the provisional syllabus accordingly to consist finally of 115 learning objectives across the seven sections. We excluded 11 learning objectives and did not add new learning objectives in this step. The number and categorization of learning objectives are summarized in Table 4.

The modified Delphi method

Table 5 summarizes the background data for all palliative care panelists. Of the 28 medically qualified panelists, 27 were physicians and one was a nurse, while 25 had experience working as palliative care specialists, and 27 had teaching experience in palliative medicine. Two of the remaining four panelists were medical students, one panelist was a bereaved family member, and one panelist was a breast cancer survivor and pharmacist. All 32 panelists responded to the first-round survey, and 26 (81%) participated in a panel meeting (Table 4).

In the first-round survey, 105 of 115 (91%) learning objectives were judged to be essential or desirable by more than 75% of respondents, while 21 learning objectives were judged to be too difficult by more than 10% of respondents (Table 3).

In the panel meeting, all learning objectives were examined carefully, in particular those that (1) less than 75% of panelists rated essential or desirable and (2) more than 10% of panelists rated too difficult.

Table 3. Expert panel scores in each section of the syllabus in Steps 2 and 3 of this study

	Learning objectives (LOs)		Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Total
Number of LOs more than 75% of panelists rated essential or desirable/ Number of LOs in each section (%)	Step 2	Provisional syllabus	7/7 (100%)	7/7 (100%)	56/56 (100%)	34/37 (92%)	3/3 (100%)	10/10 (100%)	6/6 (100%)	123/126 (98%)
	Step 3	1st Delphi round	77 (100%)	4/5 (80%)	50/54 (93%)	25/30 (83%)	3/3 (100%)	10/10 (100%)	6/6 (100%)	105/115 (91%)
		2nd Delphi round	7/7 (100%)	55 (100%)	57/61 (93%)	31/31 (100%)	3/3 (100%)	10/10 (100%)	5/5 (100%)	118/ 122 (97%)
Number of LOs more than 10% of panelists rated too difficult/ Number of LOs in each section (%)	Step 2	Provisional syllabus	4/7 (57%)	0/7 (0%)	6/56 (11%)	26/37 (70%)	1/3 (33%)	2/10 (20%)	1/6 (17%)	40/126 (32%)
	Step 3	1st Delphi round	1/7 (14%)	0/5 (0%)	4/54 (7%)	13/30 (43%)	0/3 (0%)	2/10 (20%)	1/6 (17%)	21/115 (18%)

Section 1: Basic principles; Section 2: Disease process and comprehensive assessment; Section 3: Symptom management; Section 4: Psychosocial care; Section 5: Spirituality, culture, and religious issues; Section 6: Ethics; and Section 7: Legal frameworks.

Table 4. Numbers and categorization of learning objectives (LOs) in all steps of this study

	Step 1	Step 2	Step 3			
	Draft syllabus	Provisional syllabus	1st Delphi round	Panel meeting	2nd Delphi round	Final Syllabus
Number of people invited	6	56	32	32	32	-
Number of participants (%)	6 (100%)	49 (88%)	32 (100%)	26 (81%)	32 (100%)	-
Number of added LOs	-	0	-	11	-	-
Number of excluded LOs	-	11	-	4	-	7[d]
Total Number of LOs	126	115	115	122	122	115
Number of LOs in Category 1[a]	-	11	6	-	18	18
Number of LOs in Category 2[b]	-	23	25	-	52	48
Number of LOs in Category 3[c]	-	89	74	-	48	45

[a]Category 1: essential; more than 75% of panelists rated the objective as essential.
[b]Category 2: essential in italics; 50%–75% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirbale.
[c]Category 3: desirable; less than 50% of panelists rated the objective as essential and more than 75% of panelists rated it as essential or desirable.
[d]Two LOs were combined into one LO in Section 1. In Section 6, three LOs were combined into one LO, two LOs were combined into one LO in Category 2, and four LOs were combined into one LO in Category 3.

Table 5. Background of panelists in Step 3 (modified Delphi method) of this study

Sex	
Male	25
Female	7
Specialty	
Physician	
Palliative medicine	9
Medicine	4
Surgery	2
Anesthesiology	8
Psychiatry	2
Others	2
Nurse	1
Medical student	2
Patient	1
Family	1
Clinical experience of more than 10 years (%)	27 (96%)
Clinical experience in palliative care of more than 5 years (%)	18 (64%)
Experience in palliative care education of more than 5 years (%)	21 (75%)

Subsequently, 11 new objectives were added and four objectives were excluded during the panel meeting. In addition, we reworded the learning objectives judged as difficult to be more understandable and achievable. The learning objectives numbered 122 across seven sections after the panel meeting.

In the second-round survey, all panelists responded, with 118 of 122 (97%) learning objectives rated to be essential or desirable by more than 75% of respondents (Table 3). The remaining four outcomes were rated essential or desirable by 71%, 71%, 74%, and 74% of panelists, respectively. No learning objectives were rated to be unnecessary or not so important by more than 75% of respondents. We decided to finish the Delphi rounds after the second-round survey, because most of the stated learning outcomes had achieved consensus. For satisfactory statements that include correcting a mode of expressions, movement of the learning objectives among the sections, and binding similar objectives together, we revised them based on a discussion among authors, with the result that 11 learning objectives were combined into four learning objectives.

The final version of the syllabus (available on request from the corresponding author) consists of 115 learning objectives across seven sections as follows: Section 1, Basic principles; Section 2, Disease process and comprehensive assessment; Section 3, Symptom management; Section 4, Psychosocial care; Section 5, Cultural, religious, and spiritual issues; Section 6, Ethical issues; and Section 7, Legal frameworks. Learning objectives were categorized as essential or desirable (essential: 66; desirable: 49).

Discussion

To the best of our knowledge, this study produced the first consensus syllabus of palliative medicine for undergraduates developed using a modified Delphi method.

We used three innovative processes to develop the syllabus. Firstly, according to the modified Delphi method, we use email discussion and panel meetings between the first and the second rounds of our Delphi study. These participants discussed backgrounds and reasons for their rating of each learning objectives and shared their opinions with each other,[23] with the aim of making the learning objectives more adequate and achievable. This process increased the number of learning objectives that more than 75% of participants rated essential (Category 1 in Table 4) from six to 18, while the numbers of learning objectives that 50%–75% of panelists rated as essential and that more than 75% of panelists rated as essential or desirable (Category 2 in Table 4) increased from 25 to 52 between the rounds. The panel meetings also enabled us to hear patient, family, and student voices directly, leading to a wider range of opinions about the syllabus. Subsequently, four learning objectives were excluded and 11 learning objectives were added.

Secondly, in the survey on the provisional syllabus and the first Delphi round, we evaluated the degree of difficulty for each learning objective. In general, when developing the syllabus, learning objectives tended to increase in number during the process as it proceeded. We subsequently discussed and rewrote the objectives rated as too difficult by more than 10% of panelists to make them more achievable and understandable. The number of learning objectives that more than 10% of participants rated too difficult decreased from 40 to 21, mostly due to decreases in Section 1 (Basic principles), Section 3 (Symptom management), and Section 4 (Psychosocial care) (Table 5), between the survey to develop the provisional syllabus and the first Delphi round. This process could make the syllabus more realistic, and easier to use for both students and teachers.

Thirdly, patients and family members as the consumers of palliative care, and medical students as the users of the syllabus, were enrolled as panelists, with the opportunities to rate the appropriateness of the objectives and to add new learning objectives. For example, we added three learning objectives about bereavement and psychosocial support to patient and family in Section 4 (Psychosocial care) during the panel meeting. We believe that these same three innovative processes undertaken to develop the educational syllabus on palliative care could also be adapted for other medical specialties, and indeed for any investigations using a Delphi method.

This is the first consensus syllabus of palliative medicine for undergraduate medical education in Japan developed using a clear methodology. Our intent in designing this study and developing the syllabus was not to prescribe exactly how the syllabus should be implemented, because every medical school has a different curriculum and the sites of palliative medicine vary. For example, the teaching setting might range from a classroom to a clinical clerkship at a palliative care unit. Instead, we designed the curriculum to be objective based, and therefore easy to adapt to any medical school. According to a previous investigation, most medical schools in Japan will not engage specialists in palliative medicine to teach all the learning objectives.[13] It would therefore be up to the coordinator for undergraduate medical education in palliative medicine within a given school to ensure that the essential learning objectives are covered within their program.

This new Japanese undergraduate syllabus has three major differences compared with the curriculum described previously in the UK[11] and USA.[7] Firstly, throughout the syllabus, there are few objectives using the expression of 'demonstrate' as a verb, especially in Section 4 (Psychosocial care). This arose because most of the bedside learning in Japanese medical school tends to be by observation. Japanese medical students tend to not have enough opportunities to manage and communicate with patients and families directly. This educational circumstance could affect the rating of the panel members from a realistic standpoint. Secondly, there is only one learning objective in the rehabilitation section. This was because Japanese medical schools tend to give acute medicine-oriented education, with insufficient time allowed to teach on rehabilitation medicine in the undergraduate curriculum. Thirdly, there is no description of decision making in cases of diminishing mental capacity and proxy decision making. This may be because we do not have any legal guidelines in Japan regarding decision making by patients with limited mental capacity.

This study had some limitations. Firstly, the email discussion and the panel meeting between the two Delphi rounds remove the anonymity of an individual's views, which might affect the rating of the second Delphi round, although the Delphi round itself retained its anonymity. As researchers, we considered it beneficial for panel members, especially those who are patients, bereaved family members, or students, to discuss their opinion and share their experience with all the panelists, and that this benefit would exceed any disadvantage. Secondly, the syllabus might not reflect the user's or consumer's voice sufficiently because of the panel selection process used. A Delphi process aims to look at what the majority think and sidelines minority views. In this study, we aimed to overcome this limitation by explaining the contents and medical jargon before the Delphi round and facilitating the panel members' comments and sharing of experience during the panel meeting. It might be useful to also conduct separate focus groups or external reviews of patients,

bereaved family, and medical students to influence the panel to overcome the problem.

In conclusion, we developed a consensus syllabus on palliative medicine for undergraduate medical education using a clear methodology. We used three innovative process to develop the syllabus, namely: (1) email discussion and panel meeting between the first round and the second round of the Delphi study to discuss and share opinions among panel members – we denoted this the modified Delphi method; (2) evaluation of the degree of difficulty for each learning objective to make them more realistic and achievable; and (3) enrolled patients, family members, and medical students as panelists to gather the consumer's and user's opinion for developing the syllabus. These processes could be adapted to not only develop a syllabus for other medical specialties, but also for any investigations that uses a consensus method. Based on this syllabus, a learning program on palliative medicine will be established by all medical schools in Japan and all physicians will be able to practice basic palliative care in the future.

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Conflict of interest

The authors declare that there is no conflict of interest.

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