



OPEN Content validity of the questionnaire considering opinions of the Finnish physicians on euthanasia and assisted suicide

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Despite numerous surveys conducted across the world considering assisted death, content validity evaluations of the survey questionnaires are seldom published. Likewise, there is no previous research about the content validity of the survey “Finnish physicians’ attitudes and opinions on euthanasia and physician-assisted suicide” conducted by the Finnish Medical Association. The aim of this study was to assess the content validity of the survey questionnaire. To study this, a purposive sample of physicians was recruited. Firstly, the participants were interviewed to bring up their interpretations and assessments considering the relevance, comprehensibility, and measurement scale suitability of the questions. Secondly, the participants assessed the revised study questionnaire. Altogether 16 physicians participated in the study. Although the relevance and comprehensibility of the questions were assessed to be high-level, parallel interpretations of the contents were discovered. We suggest content validity research to be essential when developing a questionnaire on assisted death. Our results could be helpful when planning future surveys about this challenging topic.

Keywords Content validity, Questionnaire, Euthanasia, Physician-assisted suicide

Numerous surveys concerning euthanasia and physician-assisted suicide (PAS) have been published across the world. Euthanasia is defined as “a physician (or other person) intentionally killing a person by the administration of drugs, at that person’s voluntary and competent request”. PAS is defined as “a physician intentionally helping a person to terminate his or her life by providing drugs for self-administration, at that person’s voluntary and competent request”¹. The definitions of euthanasia and PAS are quite similar across different Medical Associations^{2–5}. However, the ethical and practical issues related to euthanasia are very complex, including for example perspectives of beneficence, non-maleficence, autonomy and justice^{6–10}.

Knowledge on the ethical aspects about euthanasia and PAS might be seen as one of the core ethical competencies of a physician. However, euthanasia and PAS are such difficult concepts that even physicians can have incorrect perceptions about their definitions¹¹. People, including health care professionals, may sometimes confuse euthanasia and other end-of-life situations, such as withholding and withdrawing life-supportive care^{12,13}.

When conducting a survey about complex themes, there is a risk that the survey contains ambiguous questions and statements. For example, a statement “Physician-assisted suicide should be allowed for adults” is ambiguous because it is not clear whether PAS should be allowed also for children or not. Ambiguity in questions and statements leaves room for misunderstandings and might lead to incorrect interpretations of the survey results. On the other hand, it could be argued that it is not possible to formulate a completely unambiguous question or statement concerning a topic with a wide ethical and definitional complexities such as euthanasia and PAS.

Wording and phrasing have an important role in the survey responses. In real ethical problems like euthanasia and PAS, without universally accepted right or wrong answers, it is important that the statements or questions are not misleading. For example, using value-loaded or emotive phrases such as ‘mercy killing’ or ‘murder’ may have a significant impact on the survey responses. In a large study comparing the language used in public polls

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in Australia and New Zealand, it was found that especially phrases related to hopelessness were associated with greater support for euthanasia and PAS¹⁴. Different phrasing on euthanasia or PAS has had an impact on survey results also in large studies conducted in Sweden¹⁵, Norway¹⁶, and Canada¹².

To minimise misunderstandings in surveys, it is important to put an emphasis on the content validity of the survey. Content validity is referred to as the ability of the survey to reflect the content of the construct it should measure^{17–22}. When assessing content validity, relevance, and comprehensibility of the questions and statements are essential^{23,24}. The suitability of the survey scale should also be assessed^{17,24}.

To our knowledge, there are only a few published results about the validity of questionnaires concerning physicians' attitudes or views towards euthanasia. Previously, two instruments, namely Euthanasia Attitude Scale (EAS or EAS-R)^{25,26} and Attitudes Towards Euthanasia (ATE)²⁷ have been developed. These instruments were targeted to measure the attitudes of young adults or students, although EAS has also been used with medical doctors^{28–30} and ATE with medical students³¹. Furthermore, some other questionnaires have been developed and used with medical students^{32,33}. However, the published information about the content validity assessments of these instruments is scarce.

Likewise, there is no previous research on the content validity of the survey “Finnish physicians' attitudes and opinions on euthanasia and physician-assisted suicide”, conducted by the Finnish Medical Association. Previous surveys have been conducted in 1993, 2003, 2013, and 2020^{34–37}. In Finland, the term ‘euthanasia’ is not mentioned in the criminal law, but, according to the current interpretation, an act of euthanasia would be punishable as manslaughter³⁸.

The aim of this study was to assess the content validity of the questionnaire “Finnish Physicians' opinions on euthanasia and physician-assisted suicide”, with a focus on the relevance, comprehensibility, and scale suitability of the questions. Due to the complexity of the issue, it was hypothesised that there would be several differing interpretations of the contents.

Methods

The research group created the study questionnaire using previous surveys as a basis. Some outdated expressions were updated and a question of whether the responder had a special competency in palliative medicine was added. In addition, a new question considering the eligibility criteria for euthanasia was formulated. The authors' experience in end-of-life-issues, medical ethics and survey validity research is presented in Supplementary File S1.

The study questionnaire included 28 questions altogether. Those were divided into four sections considering 1) the characteristics of the respondent with eight multiple choice questions, 2) the respondent's opinions about PAS with five multiple choice and one open-ended question, 3) the respondent's opinions about euthanasia with eight multiple choice and two open-ended questions, and 4) the respondent's opinion about the stance of the Finnish Medical Association with one multiple choice and three open-ended questions. The definitions of PAS, euthanasia and the current stance of the Finnish Medical Association were also provided in the beginning of the sections.

A purposive sample of physicians was recruited to participate in the study. The goal was to recruit physicians of different ages, specialties, and experiences. The research group used personal networks to find potential participants. One researcher (ET) contacted the potential participants. The rest of the study group were not aware of the participants' identities. The participants received written and oral information about the study, after which they gave informed consent to participate in the study. They had the right to quit the study at any point without consequences.

In the first round of the study, the participants filled in the study questionnaire and participated in the study interviews. After the first round, some revisions were made to the contents and structure of the questionnaire. In the second round of the study, the revised study questionnaire and the assessment questionnaire were sent to the participants via email.

The study questionnaire used in the first round of the study was conducted with the Microsoft Forms® online survey tool. The Finnish Medical Association uses the QuestBack® online survey tool when conducting surveys. Due to technical reasons, it was not possible to use the same survey tool in the study. Thus, the study version had some differences in layout and technical details.

In the first round, the study interviews were conducted and recorded via Microsoft Teams® online video call software. The interviews were semi-structured. The participants were asked to interpret the contents of the question or statement in turn (“in your opinion, what does this mean...?”). The cognitive interview technique³⁹ was utilised during the interviews. The participants were encouraged to freely express their interpretations and thoughts throughout the interview. In addition, the participants were asked to assess the relevance, comprehensibility, and scale suitability of the questions, using a 5-point Likert scale where number 1 represented “not at all relevant / comprehensible / suitable” and number 5 represented “fully relevant / comprehensible / suitable”. The interview recordings were then transcribed, and the contents were categorised and analysed.

The assessment questionnaire used in the second round of the study was conducted with the Microsoft Forms® online survey tool. The assessment questionnaire included questions about interpretations of the contents as well as similar numeric assessments as in the first round.

The numeric assessments of the questions and statements were analysed using a method similar to item-level Content Validity Index (CVI): the proportion of the participants assessing the question as 4 or 5 on a 5-point scale was calculated^{17,40}. Usually, the proportion of 0.78 or higher is considered sufficient^{17,19,40}.

The research group agreed on the contents of the final version of the questionnaire, and the survey was performed in November 2023. The questionnaire was sent by email to all members of the Finnish Medical Association, whose email address was available and who had not denied taking part to surveys. This covered

approximately 91% of Finnish physicians (n = 28 534). Altogether 8857 responses were received. The response rate was 31%.

During the analyses of the 2023 survey, it turned out that some of the respondents had had difficulties understanding and responding to the question considering the eligibility criteria for euthanasia. Thus, the open responses from the 2023 survey considering that question were categorized and analysed.

Results

Altogether 16 physicians from different backgrounds and various experiences participated in the study. The background characteristics of the participants are presented in Table 1. All the participants took part in both study rounds.

The first round of the study revealed many parallel interpretations of the contents of the study questions and other notices, leading to revisions. The first version of the questionnaire, the procedures, and revisions after the first round are presented in Table 2. The question considering the eligibility criteria for euthanasia is excluded from Table 2 because it was assessed as being too difficult to interpret in the first round of the study. Thus, it was completely revised by the research group. It should be noted that in several questions, revisions were not made to maintain comparability with the results from the previous surveys. In addition, the questions concerning both physician-assisted suicide and euthanasia were split thematically to improve clarity. This increased the number of open-ended questions compared to the previous surveys.

The results of the second round of the study are presented in Table 3. The numeric assessments are presented as proportions of the respondents who assessed the question as 4 or 5 on a 5-point scale. The questions concerning physician-assisted suicide were assessed as relevant and comprehensive, item-level assessments were 0.81 or higher. The questions concerning euthanasia, including the possible eligibility criteria, were also assessed as relevant and comprehensive, item-level assessments were 0.81 or higher. The item-level scale suitability assessments were 0.94 or higher.

Despite the numeric assessments being high, many parallel interpretations remained. Those are presented in Table 3. For example, the question “A physician should be able to assist a patient in a suicide” was interpreted as either a legal or ethical right to assist a patient in a suicide, a practical view that a physician should provide medication for suicide, or an obligation to assist a patient in a suicide.

	n	(%)
Gender		
Female	9	(56)
Male	7	(44)
Age distribution		
< 35 y	3	(19)
35–44 y	4	(25)
45–54 y	4	(25)
55–64 y	2	(13)
≥ 65 y	3	(19)
Specialty in full-time profession		
Operative	5	(31)
Conservative	5	(31)
Diagnostic	0	(0)
Psychiatric	1	(6)
General medicine, occupational medicine, and other fields	3	(19)
Not specialised	2	(13)
Current working status		
Working	11	(69)
Student	2	(13)
Retired	3	(19)
Out of work due to another reason	0	(0)
Currently taking care of patients in palliative care or end-of-life care		
Yes	11	(69)
No	5	(31)
Experience in the care of patients in palliative care or end-of-life care		
None	2	(12)
< 5 years	7	(44)
5–10 years	3	(19)
> 10 years	4	(25)

Table 1. Characteristics of the participants, n = 16.

Question, original version			
Original choices/open-ended	Procedures	Reasons	Question, final version (if altered)
Background information			
Gender			
Male / Female / Other / I do not want to answer	No changes to the contents	Comparability to previous survey results	
Age group			
under 35 years / 35–44 years / 45–54 years / 55–64 years / over 64 years	No changes to the contents	Risk of identification in older age groups (particularly concerning physicians with a special competency in palliative medicine)	
Specialty in your main profession			
Operative / Conservative / Diagnostic / Psychiatric / General medicine, occupational medicine, and other fields (forensic medicine, health care medicine, sports medicine) / No specialty	No changes to the contents	Comparability to previous survey results	
I have a special competency in palliative medicine			
Yes / No / I do not want to answer	No changes to the contents		
Your current working status			
Working / Student / Retired / Out of work due to another reason	No changes to the contents	Comparability to previous survey results	
Where do you work at the moment?			
Primary health care / Specialized care / Occupational health care / Other	No changes to the contents	Comparability to previous survey results	
Do you take part in the care of patients in palliative care or end-of-life care in your current work position?			
Yes / No	No changes to the contents	Comparability to previous survey results	
How much experience do you have in the care of patients in palliative care or end-of-life care?			
Not at all / less than 5 years / 5–10 years / over 10 years	No changes to the contents		
Questions concerning physician-assisted suicide			
Definitions:			
Physician-assisted suicide is defined as a physician deliberately helping a person to commit suicide by giving drugs to the person to take them by him/herself by this person's voluntary and competent request.	Minor clarifications: the essential contents were not changed		Physician-assisted suicide is defined as: by person's voluntary and competent request, a physician gives the person access to medication by which the person can commit suicide.
Currently, assisting in a suicide is not considered a criminal act according to criminal law because suicide is not regarded as a criminal act. However, health care professionals have a special obligation to protect patients of whom they take care; thus, it can be assumed that the act of a physician will not remain unpunished.	Minor clarifications: the essential contents were not changed		Currently, physician assisted suicide is not considered a criminal act according to criminal law because suicide is not regarded as a criminal act. However, health care professionals have a special obligation to protect patients of whom they take care of; thus, it is possible that the act could lead to judicial consequences or have an influence on professional rights.
What is your opinion about the following statements concerning physician-assisted suicide?			
A physician should be punished for assisting in a suicide			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
	Place switch with the next question		
A physician should be able to assist a patient in a suicide			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
	Place switch with the previous question		
Legislation should confirm that a physician assisting a patient in a suicide will not be punished			
Continued			

Question, original version			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
I could assist a patient in a suicide			I could assist a patient in a suicide if it was allowed in Finland
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	New form		Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say
Would you describe your reasoning behind your opinion about physician-assisted suicide and the possibility of allowing it in Finland?			
Open question	No changes to the contents		
Questions concerning euthanasia			
Definitions:			
Euthanasia is defined as a physician deliberately ending a person's life by administering drugs by the person's voluntary and competent request. Euthanasia is covered under the criminal law in Finland as a crime called for example a manslaughter.	No changes to the contents		
What is your opinion about the following statements concerning euthanasia?			
Euthanasia should be legalised in Finland			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
With sufficient palliative care and end-of-life care, there is no need for euthanasia			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
Accepting euthanasia would harm the doctor-patient relationship in general			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
Accepting euthanasia would strengthen the doctor-patient relationship in general			
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	No changes to the contents	Comparability to previous survey results	
I could perform euthanasia			If euthanasia was legalised in Finland, I could sometimes perform it
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	New form	To achieve comparability, the question was mainly restored from 1993 survey	Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say
Would you briefly describe your reasoning behind your opinion about euthanasia and its legalisation in Finland?			
Open question	No changes to the contents	Comparability to previous survey results	
Have you changed your opinion about euthanasia during your career as a physician?			
Yes / No / Partly / Cannot say	No changes to the contents	Comparability to previous survey results	
Could you briefly describe, why you have changed your opinion on euthanasia? (if Yes or Partly)			
Open question	No changes to the contents		
Has a patient or a patient's closest one ever asked you for euthanasia or physician-assisted suicide?			Has a patient or a patient's closest one ever asked you to assist a patient in a suicide? And Has a patient or a patient's closest one ever asked you for euthanasia?
Yes / No	Split to separate questions concerning physician-assisted suicide and euthanasia		Yes / No
When did this last occur?(If Yes)			
< 1 year ago / < 5 years ago / < 10 years ago / > 10 years ago	Clarification of response options, adding a question concerning respondent's actions		< 1 year ago / 1-5 years ago / 5-10 years ago / > 10 years ago
Continued			

Question, original version			
	Added question		Could you briefly describe your actions in the most recent situation when a patient or a patient's closest one asked you to assist a patient in a suicide And Could you briefly describe your actions in the most recent situation when a patient or a patient's closest one asked you for euthanasia
			Open question
The current stance of the Finnish Medical Association on euthanasia and physician-assisted suicide			
Definitions:			
The Finnish Medical Association objects to the legalisation of euthanasia. The Finnish Medical Association also objects that physicians as a profession would be obliged to perform procedures that aim at hastening a patient's death (physician-assisted suicide).	Minor changes to the contents Split to separate parts concerning physician-assisted suicide and euthanasia		The Finnish Medical Association objects to the legalisation of euthanasia. And The Finnish Medical Association objects that physicians as a profession would be obliged to perform procedures that aim at hastening a patient's death.
Should the Finnish Medical Association change its stance on euthanasia and physician-assisted suicide?			Should the Finnish Medical Association change its stance on physician-assisted suicide? And Should the Finnish Medical Association change its stance on euthanasia?
No / Yes, the Finnish Medical Association should change its stance on euthanasia / Yes, the Finnish Medical Association should change its stance on physician-assisted death / Cannot say	Split to separate questions concerning physician-assisted suicide and euthanasia		Yes / No / Cannot say
What kind of stance should the Finnish Medical Association have on euthanasia?			
Open question	No changes to the contents		
What kind of stance should the Finnish Medical Association have on physician-assisted suicide?			
Open question	No changes to the contents		
What other issues would you like to voice to the Finnish Medical Association concerning euthanasia or physician-assisted suicide?			
Open question	No changes to the contents		

Table 2. The contents of the original and the final version of the questionnaire, along with implemented modifications and underlying reasons based on the study. The contents of the question considering the possible eligibility criteria are presented in Table 3.

At the end of each interview, we asked our respondents whether they thought some important issues or questions would be missing from the questionnaire. The respondents suggested nine different issues, for example “In what kind of situation a physician her/himself would consider requesting for euthanasia?”, “Should euthanasia belong a physician's work at all?”, and “Who should make the decisions considering euthanasia, a physician or someone else?”.

In the second round of the study, we did not obtain any specific interpretations that would have led to significant changes in the content of questions concerning the possible eligibility criteria for euthanasia. However, in the 2023 survey, altogether 91 of 1488 open responses considering the eligibility criteria for euthanasia included feedback and comments on the content of the question. For example, the question was assessed as “not possible to answer if the respondent is completely against euthanasia” (n = 43), “misleading” (n = 12), or “response options are not unambiguous” (n = 11). Thus, some clarifications and revisions were suggested for further usage.

The final version of the questionnaire, with suggested additions, is presented in Supplementary file S2.

Discussion

This study showed that the contents of the questionnaire “Finnish Physicians' opinions on euthanasia and physician-assisted suicide” were assessed as relevant and comprehensible. Nevertheless, the study interviews revealed that the questions were not unambiguous; several questions had parallel interpretations.

When comparing previous instruments used to measure physicians' or medical students' attitudes or opinions about euthanasia, they differ in their content. EAS and its versions are divided into four sections and include items such as “Euthanasia should be against the law”, “Euthanasia is acceptable in cases when all hope of recovery is gone” or “I have faith in the local medical system to implement euthanasia properly”^{25,26,29}. ATE includes items such as “No matter how much a person might plead for death to avoid unbearable pain, no one should assist the person to accomplish his/her wish” or “One should have the right to choose to die if he/she is terminally ill and is suffering”²⁷. In a study by Clemens et al., the questionnaire included items such as “Should active euthanasia be legalised in Germany?” or “Are you afraid that a legalisation of active euthanasia

Question, final version	Relevance, proportion of response 5 (4 or 5) ¹	Comprehensibility, proportion of response 5 (4 or 5) ²	Scale suitability, proportion of response 5 (4 or 5) ³	Content interpretations	Comments from respondents
Background information					
Gender					
Male / Female / Other / I do not want to answer	0.50 (0.63)	1.00	0.81 (1.00)	The respondent's gender	Relevance was questioned
Age group					
under 25 years / 25–34 years / 35–44 years / 45–54 years / 55–64 years / over 64 years	0.50 (0.75)	0.88 (0.94)	0.88 (0.88)	The respondent's age	
Specialty in your main profession					
Operative / Conservative / Diagnostic / Psychiatric / General medicine, occupational medicine, and other fields (forensic medicine, health care medicine, sports medicine) / No specialty	0.62 (1.00)	0.62 (0.88)	0.62 (0.81)	The respondent's field of medical specialty The division of specialties was not clear to all interviewees	Problematic, if more than one specialty It is possible to work outside one's specialty
I have a special competency in palliative medicine					
Yes / No / I do not want to answer	0.88 (1.00)	0.88 (1.00)	0.94 (0.94)	Whether a respondent has a special competency in palliative medicine	Risk of identification in Finland, where the number of palliative medicine specialists is scarce
Your current working status					
Working / Student / Retired / Out of work due to another reason	0.62 (0.88)	0.94 (0.94)	0.88 (0.94)	Whether the respondent is currently working or not	Does not take part-time work/ studies/ retirement into account
Where do you work at the moment?					
Primary health care / Specialised care / Occupational health care / Other	0.5 (0.88)	0.75 (1.00)	0.69 (0.88)	The respondent's work sector in terms of the service system	It is possible to work in more than one sector
Do you take part in the care of patients in palliative care or end-of-life care in your current work position?					
Yes / No	0.88 (0.94)	0.69 (0.88)	0.81 (0.88)	Taking part in the care of dying patients could mean meeting them and/or consulting occasionally Taking part in the care of dying patients could mean being responsible for their care frequently	A retired respondent could find the question unclear The amount of work that counts is not defined
How much experience do you have in the care of patients in palliative care or end-of-life care?					
Not at all / less than 5 years / 5–10 years / over 10 years	0.88 (1.00)	0.75 (0.88)	0.81 (1.00)	Experience could mean working as a palliative care specialist Experience could mean that you have occasionally taken care of dying patients	Definition of experience is not clear
Questions concerning physician-assisted suicide					
Definitions:					
Physician-assisted suicide is defined as: by person's voluntary and competent request, a physician deliberately gives the person access to medication by which the person can commit suicide. Currently, physician assisted suicide is not considered a criminal act according to criminal law because suicide is not regarded as a criminal act. However, health care professionals have a special obligation to protect patients of whom they take care of; thus, it is possible that the act could lead to judicial consequences or have an influence on professional rights.	0.88 (1.00)	0.63 (0.88)	N/A ⁴	A brief definition of physician-assisted suicide and ethical problems related to it	
What is your opinion about the following statements concerning physician-assisted suicide?					
A physician should be able to assist a patient in a suicide					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.94 (1.00)	0.69 (0.94)	0.69 (1.00)	A physician should have a legal right to assist a patient in a suicide A physician should have an ethical and moral right to assist a patient in a suicide A physician should assist a patient in a suicide (includes obligation) In practice, a physician should be able to assist a patient in a suicide (e.g. to provide medication)	
A physician should be punished for assisting in a suicide					
Continued					

Question, final version	Relevance, proportion of response 5 (4 or 5) ¹	Comprehensibility, proportion of response 5 (4 or 5) ²	Scale suitability, proportion of response 5 (4 or 5) ³	Content interpretations	Comments from respondents
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.75 (0.81)	0.94 (1.00)	0.81 (0.94)	An ethical question about whether physician-assisted suicide should be punished in Finland A physician who assisted a patient in a suicide might have judicial punishment If a physician assisted a patient in a suicide, the public authority might limit a physician's licence A physician who assisted a patient in a suicide might have some kind of punishment	It is not determined which kind of punishment would be the consequence
Legislation should confirm that a physician assisting a patient in a suicide will not be punished					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.81 (0.94)	0.88 (0.94)	0.75 (0.88)	That a physician would have a legal right to assist a patient in a suicide If a physician assisted a patient in a suicide, the law would protect the physician from judicial punishment	
I could assist a patient in a suicide if it was allowed in Finland					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.81 (1.00)	0.94 (1.00)	0.75 (1.00)	A question of ethics/ morale: would the respondent allow patient-assisted suicide A practical question: would the respondent be able to give medication etc. to assist a patient in a suicide A question related to conscience: would the respondent be capable to assist a patient in a suicide	
Would you describe your reasoning behind your opinion about physician-assisted suicide and the possibility of allowing it in Finland?					
Open question	0.94 (1.00)	0.94 (1.00)	N/A ⁴	The respondent's reasoning about his/her opinion on physician-assisted suicide	
Has a patient or a patient's closest one ever asked you to assist a patient in suicide?					
Yes / No	0.75 (1.00)	0.81 (1.00)	0.81 (1.00)	Whether the respondent has faced a direct request concerning patient-assisted suicide Whether the respondent has faced a request to die Some of the interviewees excluded a request to die and interpreted the question only as a direct request to assist in a suicide	
When did this last occur? (If Yes)					
< 1 year ago / 1–5 years ago / 5–10 years ago / > 10 years ago	0.75 (1.00)	0.81 (1.00)	0.81 (1.00, 1 missing)	The amount of time since the respondent has faced a question described above	
Could you briefly describe your actions in the most recent situation when a patient or a patient's closest one asked you to assist a patient in suicide					
Open question	N/A ⁴	N/A ⁴	N/A ⁴	No specific interpretations mentioned	
The current stance of the Finnish Medical Association on physician-assisted suicide					
Definition:					
The Finnish Medical Association objects that physicians as a profession would be obliged to perform procedures that aim at hastening a patient's death.	0.75 (1.00)	0.75 (0.94)	N/A ⁴	No specific interpretations mentioned	
Should the Finnish Medical Association change its stance on physician-assisted suicide?					
Yes / No / Cannot say	1.00	1.00	0.94	Respondent's opinion on what the Finnish Medical Association has enunciated on physician-assisted suicide	
What kind of stance should the Finnish Medical Association have on physician-assisted suicide?					
Open question	0.88 (1.00)	0.94 (1.00)	N/A ⁴	Respondent's opinion on what the Finnish Medical Association should enunciate on physician-assisted suicide	
Questions concerning euthanasia					
Definitions:					
Euthanasia is defined as a physician deliberately ending a person's life by administering drugs by the person's voluntary and competent request. Euthanasia is covered under the criminal law in Finland as a crime called for example a manslaughter.	1.00	0.69 (0.88)	N/A ⁴	The definition of euthanasia and legal consequences in the current situation	It is hard to define what 'competent' means
What is your opinion about the following statements concerning euthanasia?					
Euthanasia should be legalised in Finland					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.81 (1.00)	0.75 (0.94)	0.63 (0.94)	The parliament would pass laws concerning euthanasia and those would be implemented	The contents of the possible law would have an impact on the response
With sufficient palliative care and end-of-life care there is no need for euthanasia					
Continued					

Question, final version	Relevance, proportion of response 5 (4 or 5) ¹	Comprehensibility, proportion of response 5 (4 or 5) ²	Scale suitability, proportion of response 5 (4 or 5) ³	Content interpretations	Comments from respondents
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.81 (0.94)	0.75 (1.00)	0.75 (1.00, 1 missing)	If high quality palliative and end-of-life care were available for all, there would be no need for discussion about euthanasia Interpretations of 'adequate': sufficient, barely enough, excellent	The dichotomy "palliative care vs. euthanasia" was criticized Physicians might not know the meaning of palliative care
Accepting euthanasia would harm the doctor–patient relationship in general					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.69 (0.94)	0.63 (0.88)	0.75 (1.00)	The patients would not trust in the physicians, if euthanasia was legalised The patients would think suspiciously about physicians if euthanasia was legalised The patients might be afraid that a physician wants to favour euthanasia	'In general' is hard to define
Accepting euthanasia would strengthen the doctor–patient relationship in general					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.63 (0.94)	0.69 (0.94)	0.75 (1.00)	The patients would trust more in physicians if euthanasia was legalised The patient would know that the physician could help him/her to die in a hopeless situation	
If euthanasia was legalised in Finland, I could sometimes perform it					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.88 (1.00)	0.88 (1.00)	0.88 (1.00)	Whether the respondent could perform euthanasia, in case it was legal	The contents of the possible law would have an impact on the response
Would you describe your reasoning behind your opinion about euthanasia and its possible legalisation in Finland?					
Open question	0.81 (0.94)	0.88 (1.00)	N/A ⁴	Possibility to tell reasons for example why euthanasia could be legal to perform	
Questions concerning possible eligibility criteria for euthanasia					
In countries with legislation about euthanasia, the eligibility criteria for euthanasia has been defined. The eligibility criteria has to be fulfilled before euthanasia could be performed according to the person's request. If euthanasia was legalised in Finland, the eligibility criteria for euthanasia would have to be legally determined. According to the legislation, specific enactments and instructions for doctors would probably be defined.	0.88 (1.00)	0.75 (0.94)	N/A	No specific interpretations	Good to have these definitions in this survey It is difficult to make a law that would cover every situation, there will always be room for interpretation of the law
In my opinion, it is possible to define adequately clear eligibility criteria for euthanasia in the law, enactments and instructions					
Fully agree / Partly agree / Partly disagree / Fully disagree / Cannot say	0.75 (0.92)	0.75 (1.00)	0.81 (1.00)	Respondent's opinion on whether it is possible to define such criteria which could be tight enough but not lead to misuse	Is this about performing or also monitoring euthanasia procedures?
Please take note on the following statements:					
To perform euthanasia, more than one doctor should always assess the situation					
Yes / No / Cannot say	0.94 (1.00)	1.00 (1.00)	0.94 (1.00)	Respondent's opinion on whether one physician's assessment is enough or if there should be more than one physician to assess the situation	Would this always be possible in real life?
Euthanasia should be allowed only to people of legal age					
Yes / No / Cannot say	1.00 (1.00)	0.94 (0.94)	0.94 (1.00)	Respondent's opinion on the age of the person who should receive euthanasia	Does this include only fully competent people?
With specific prerequisites, euthanasia should be allowed also to people under the legal age					
Yes / No / Cannot say	0.94 (1.00)	0.81 (0.88)	0.94 (1.00)	Respondent's opinion on euthanasia of minors	Does this include newborns and babies?
The request for euthanasia should be given presently by the person in question					
Yes / No / Cannot say	0.81 (1.00)	0.75 (0.88)	1.00 (1.00)	Respondent's opinion on whether the request for euthanasia should be given in present time, not for example by a letter	Difficult to figure out As single criterion by itself or as a part of a cluster of criteria?
The reliable request for euthanasia (for example a living will) given in advance should be allowed as an eligibility criteria of euthanasia, even if the person in question would not be able to announce his/her request presently					
Continued					

Question, final version	Relevance, proportion of response 5 (4 or 5) ¹	Comprehensibility, proportion of response 5 (4 or 5) ²	Scale suitability, proportion of response 5 (4 or 5) ³	Content interpretations	Comments from respondents
Yes / No / Cannot say	0.94 (1.00)	0.75 (0.88)	0.94 (1.00)	Respondent's opinion on whether a living will should be a sufficient basis for euthanasia request	How could it be made sure that patient's will has not changed [during time]?
Difficult physical symptoms, which are not controlled with therapy, in a patient with an incurable disease should be allowed as an eligibility criteria for euthanasia					
Yes / No / Cannot say	0.88 (1.00)	0.75 (0.88)	0.94 (1.00)	Physical symptoms as an eligibility criteria	What kind of symptoms
Difficult, psychic symptoms, which are not controlled with therapy, in a patient with an incurable disease should be allowed as an eligibility criteria for euthanasia					
Yes / No / Cannot say	0.94 (1.00)	0.69 (0.94)	0.88 (1.00)	Difficult psychic symptoms that cause suffering as an eligibility criteria	What kind of symptoms? It is difficult to assess or measure symptoms
Life turning into meaningless or unbearable suffering should be allowed as an eligibility criteria for euthanasia, independent on other symptoms or diseases					
Yes / No / Cannot say	0.94 (1.00)	0.69 (0.81)	0.88 (1.00)	Respondent's opinion on "general suffering" as an eligibility criteria	Definition? In what time frame?
An incurable somatic disease should be allowed as an eligibility criteria for euthanasia					
Yes / No / Cannot say	0.94 (1.00)	0.75 (0.94)	0.94 (0.94)	A somatic disease without suffering as an eligibility criteria	
An incurable psychic disease should be allowed as an eligibility criteria for euthanasia					
Yes / No / Cannot say	0.94 (1.00)	0.81 (0.88)	0.94 (1.00)	A psychic disease without suffering as an eligibility criteria	What kinds of psychic diseases?
A permanent and serious state of disability should be allowed as an eligibility criteria for euthanasia					
Yes / No / Cannot say	0.94 (1.00)	0.69 (0.94)	0.94 (1.00)	A serious state of disability as an eligibility criterium, without indication of suffering	What is a serious state of disability? How could it be confirmed what the patient wants? Does this include also those who are not capable of expressing their will?
Euthanasia should be permitted only for patients with limited prognosis (less than 1 year)					
Yes / No / Cannot say	0.75 (1.00)	0.69 (0.94)	0.81 (1.00)	The effect of life expectancy of eligibility criteria	Who could give a reliable prognosis?
Euthanasia should be permitted independent of the patient's prognosis if other eligibility criteria are fulfilled					
Yes / No / Cannot say	0.94 (1.00)	0.88 (1.00)	0.94 (1.00)	Respondent's opinion on whether euthanasia should be allowed based on other criteria independent of life expectancy	Prognosis is often unsure
What other eligibility criteria, grounds or requirements for euthanasia should be defined?					
Open question	0.75 (1.00)	0.81 (1.00)	N/A ⁴	Respondent's open opinions of eligibility criteria	
Have you changed your opinion about euthanasia during your career as a physician?					
Yes / No / Partly / Cannot say	0.81 (1.00)	0.88 (0.94)	0.94 (0.94)	Development of the respondent's opinion during time	
Could you briefly describe, why you have changed your opinion about euthanasia? (if Yes or Partly)					
Open question	0.81 (1.00)	0.88 (1.00)	N/A ⁴	Possibility to tell reasons behind the respondent's opinion	
Has a patient or a patient's closest one ever asked you for euthanasia?					
Yes / No	0.88 (1.00)	0.81 (1.00)	0.88 (1.00)	Whether the respondent has faced a direct request concerning euthanasia Whether the respondent has faced a patient's request to die	
When did this last occur? (If Yes)					
< 1 year ago / 1–5 years ago / 6–10 years ago / > 10 years ago	0.88 (1.00)	0.88 (1.00)	0.88 (1.00)	No specific interpretations mentioned	
Could you briefly describe your actions in the most recent situation when a patient or a patient's closest one asked you for euthanasia					
Open question	0.88 (1.00)	0.88 (1.00)	N/A ⁴	No specific interpretations mentioned	
The current stance of the Finnish Medical Association on euthanasia					
Definitions:					
The Finnish Medical Association objects to the legalisation of euthanasia.	0.88 (1.00)	1.00	N/A ⁴	No specific interpretations mentioned	
Continued					

Question, final version	Relevance, proportion of response 5 (4 or 5) ¹	Comprehensibility, proportion of response 5 (4 or 5) ²	Scale suitability, proportion of response 5 (4 or 5) ³	Content interpretations	Comments from respondents
Should the Finnish Medical Association change its stance on euthanasia?					
Yes / No / Cannot say	1.00	1.00	1.00	Respondent's opinion on what the Finnish Medical Association has enunciated on euthanasia	
What kind of stance should the Finnish Medical Association have on euthanasia?					
Open question	0.94 (1.00)	0.94 (1.00)	N/A ⁴	Respondent's opinion on what the Finnish Medical Association should enunciate on euthanasia	
What other issues would you like to voice to the Finnish Medical Association concerning euthanasia or physician-assisted suicide?					
Open question	0.62 (0.94)	0.88 (1.00)	N/A ⁴	An "off-topic" possibility	

Table 3. The assessments of relevance, comprehensibility, and scale suitability of the final version of the study questionnaire along with the content interpretations and comments. ¹Relevance was assessed in a scale from 1 to 5: 1 being "not at all relevant" and 5 "fully relevant". ²Comprehensibility was assessed in a scale from 1 to 5: 1 being "not at all comprehensible" and 5 "fully comprehensible". ³Scale suitability was assessed in a scale from 1 to 5: 1 being "not at all suitable" and 5 "fully suitable". ⁴N/A = Not Applicable.

in Germany would lead to misuse?"³². In a recently published study by Forycka et al., the items were quite similar, such as "Would you perform euthanasia if the law allowed it?" or "Do you think that the legalization of euthanasia or assisted suicide could lead to abuse, i.e. use without the consent of patients, in the earlier stage of an incurable disease, or patients with other diseases?" In addition, it included items in which the respondent should define euthanasia or PAS.³³

Compared to previous instruments, our study questionnaire resembles more the studies by Clemens et al.³² and Forycka et al.³³, with shorter and more practice-oriented questions. In addition, in our study questionnaire, there are several open-ended questions, which allow the respondents to freely express their opinions about the matter in question.

Considering the numeric assessments, all dimensions of all the study questions were assessed over 0.78, thus suggesting good content validity^{17,19,40}. Nevertheless, due to the scarcity of the published information about different content interpretations of the previous instruments, we were not able to reflect our results against previous research. Question framing has been suggested to have a rather strong effect on survey results¹⁶. In this study, the assessments or comments referring to misleading question framing were rare.

As hypothesised, some questions and statements in our study questionnaire were revealed as ambiguous. A rather simple-looking question "A physician should be able to assist a patient in a suicide" had four different interpretations. The challenge in this statement might be the possible interpretation of an obligation to assist a patient in a suicide, which can remarkably influence on the respondent's choice. "Has a patient or a patient's closest one asked you to assist a patient in suicide?" was also interpreted as a patient's general wish to die, even though the definition of a physician-assisted suicide was included in the questionnaire. In addition, it turned out that the respondents had different explanations for expressions such as "in general" or "sufficient".

It is possible that some issues or interpretations might have been unnoticed by the respondents. In addition, the authors might have not considered all important aspects of the topic. For example, the statement "A physician should be able to decline to perform euthanasia" or "A physician should not be obligated to perform euthanasia" could be a reasonable alternative to add in the questionnaire.

To some extent, some of the ambiguities were accepted by the research group and left to the final version of the questionnaire. The survey time series about Finnish physicians' opinions on euthanasia and PAS has been collected for over 30 years and we aimed to maintain comparability with the previous surveys. However, we concluded that with this validity study, we can better understand and critically interpret the results of our survey now and in the future. We have provided some authors' notes for future researchers in Supplementary file S2 to help them to avoid ambiguities in their surveys.

Indeed, it might be impossible to achieve total unambiguity when formulating questions considering assisted death. This is due to the complex nature of euthanasia or PAS; there is always room for interpretation. For instance, expressions such as "unbearable suffering" or "serious state of disability" are subjective and cannot be defined unambiguously. In addition, the respondent's attitudes and values influence the way the questions are interpreted. In the November 2023 survey, we got versatile feedback: the exact same statements were interpreted whether against or in favour of euthanasia.

In this study, we were able to reach a good purposive sample with physicians of different ages, specialty fields, and backgrounds. The interviews were performed thoroughly, as well as the analyses. The assessments were designed and performed according to suggestions in literature^{17,19,24,40}. The study data was expanded to include feedback from the 2023 survey, which strengthens the results.

The study also has its limitations. Not using the exact same electronic platform to perform the study and the 2023 survey is a limitation. However, the similarity was significant enough, and it did not affect the contents of the survey. In addition, in the second round, the assessments were collected via an online survey tool, not via interviews. Interviews might have revealed earlier the challenges with the question considering the eligibility

criteria of euthanasia. Furthermore, particularly that question might have benefited from using a structured Delphi style with several rounds⁴¹.

Designing and conducting a survey is demanding and time-consuming. Thus, researchers should do their best to make sure that the items measure what they are intended to measure. Evaluating content validity is an essential step in validity research and it deserves detailed reporting. The results of this study could be used when designing and conducting surveys considering physicians' opinions on euthanasia or PAS, at least in countries where euthanasia is not legal. It should be noted that the translation of the questionnaires from Finnish to English for reporting purposes was conducted by the research group. Thus, for future research purposes, we recommend the usage of the original Finnish questionnaires.

The study process improved the content validity of the questionnaire concerning physicians' opinions on assisted death. Even though the final questionnaire still includes questions with some ambiguous expressions, the answers are now better understood helping to contextualize the results of the surveys on this challenging topic. With the results of this study, the questionnaire could also be used and further improved also in other countries. We suggest content validity evaluation to be essential when developing a questionnaire on assisted death.

In general, our study is another demonstration of the fact that words matter a lot. Even if the essential terms are defined in a questionnaire, the participants interpret them in the light of their own personal values. Content validity assessment may improve the quality of survey tools, but full objectivity is beyond one's reach. This should be kept in mind when interpreting study results and, in particular, when comparing different studies with each other.

Data availability

The data are available from the corresponding author upon reasonable request. The final questionnaire in Finnish is available under CC-BY-NC-ND licence from the corresponding author upon reasonable request.

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Author contributions

All the authors contributed the design of the study. E.T. conducted the interviews and categorised and coded the transcribed data. All the authors contributed to the data crosschecking, analysis and interpretation and the questionnaire development process. E.T. drafted the manuscript with R.P.P. All the authors contributed to critical revision of the manuscript. All the authors have read and approved the manuscript and have agreed to be personally accountable for their contributions.

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Declarations

Competing interests

The authors declare no competing interests.

Ethical approval and informed consent

This study was evaluated and approved by the Regional Ethics Committee of Human Sciences, Tampere, Finland (36/2023). The participants obtained written and oral information about the study and gave their informed consent to participate. This study was conducted according to national laws, regulations, and the Declaration of Helsinki.

Additional information

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