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Attitudes towards euthanasia and assisted suicide: a cross-sectional study among physicians in Estonia

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ABSTRACT

Objective This study aimed to analyse the attitudes of physicians working in Estonia towards the legalisation of euthanasia and assisted suicide, their willingness to perform these practices and the association of these factors with a range of physician characteristics.

Design Cross-sectional study design using a web-based anonymous questionnaire comprising 31 questions or statements.

Setting Estonia, April–October 2022; data collection via a web-based survey of physicians.

Participants 526 physicians (74% female, 49% under 40 years old).

Primary and secondary outcome measures The primary outcome was the attitudes of Estonian physicians towards the legalisation of euthanasia and assisted suicide. Secondary outcomes included their self-reported willingness to personally perform euthanasia and their willingness to personally assist in suicide.

Results Most of the participants (73%) agreed that euthanasia and assisted suicide should be legal in Estonia. Non-religious physicians were significantly more likely to support both (OR 8.0; 95% CI: 3.8, 16.8 for euthanasia; OR 9.7; 95% CI: 4.7, 20.2 for assisted suicide). Physicians who attended palliative care courses were less likely to support euthanasia (OR 0.3; 95% CI: 0.1, 0.8). Over half had not participated in any specialised palliative medicine courses.

Conclusions This research indicates that the Estonian physician community demonstrates a predominantly accepting view of the legalisation of euthanasia and assisted suicide.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The employment of anonymous survey instruments enables the articulation of perspectives without the limitations frequently associated with the disclosure of personal information.
⇒ Self-reported data introduce the risk of recall and social desirability biases.
⇒ The non-probability sampling method limits the generalisability of findings to all Estonian physicians.

INTRODUCTION

The work of healthcare professionals is to relieve the suffering of patients through the correct assessment and treatment of disturbing complaints, whether physical, psychosocial or spiritual. Without a doubt, relieving suffering is important in the caring of all patients, not only with advanced disease. According to Cassel, the relief of suffering must be seen as the similar obligation of a medical professional to the curing of disease.[1]

Both euthanasia and assisted suicide are often reasoned as an act to prevent further suffering by hastening the death of a patient.[2] The most prevalent diagnoses among patients asking for euthanasia and assisted suicide are cancer. However, there is an increasing trend in requests from individuals with dementia and psychiatric disorders.[3 4] Permitting euthanasia for underage/frail elderly persons or people with psychiatric conditions is still a controversial issue. The debate revolves around the question of whether it is overly paternalistic to assert that patients lack the competence to consider treatment options, assess prognosis and autonomously make decisions about their own lives.[5] One argument against euthanasia and assisted suicide is that it confers excessive power to doctors or will lead to less good end-of-life care. It is clear that euthanasia and assisted suicide should not be a substitute for palliative care.

Euthanasia and assisted suicide are related concepts. The key difference lies in who performs the final act leading to death. Legal frameworks surrounding both assisted suicide and euthanasia are complex and influenced by cultural, ethical and moral considerations. During the past 20 years, euthanasia and assisted suicide have been legalised in several countries, and the importance of palliative care has increased.[6] Still, there are countries where palliative medicine is not recognised as a specialty and euthanasia/assisted suicide is not legally allowed. Moreover, the education of healthcare professionals may not cover these issues.[7]

Contemplating mortality poses a dual challenge at the intersection of personal and professional spheres. Nevertheless, the

inevitability of addressing this existential subject is a shared experience among physicians throughout the course of their career. Understanding the perspectives of doctors provides insights into the ethical considerations surrounding end-of-life decisions and informs the development of balanced and effective policies that consider the perspectives of medical professionals. Studies have shown that there is variability among physicians; for example, younger and male doctors are generally supportive, and those who are more religious and more involved in palliative care have a negative attitude towards hastening death.[8 9]

This study aimed to analyse the attitudes of physicians working in Estonia towards the legalisation of euthanasia and assisted suicide, their willingness to perform these practices and the association of these factors with a range of physician characteristics.

METHODS

Design and setting

This is a cross-sectional study that employed an anonymous, non-probability internet survey of physicians in Estonia conducted between April and October 2022.

Euthanasia and assisted suicide are not legal in Estonia; however, there has been a public debate on these issues following some cases where patients from Estonia travelled to Switzerland for assisted suicide. Palliative care services in Estonia are only partly integrated into the universal healthcare system, and only fundamental principles of palliative care are covered within the medical curriculum.[7]

The questionnaire

Developing the questionnaire

The study employed a questionnaire developed by the authors, informed by a previous survey on the attitude of Estonian physicians towards euthanasia (1997–1998) and relevant literature.[9–11]

Initial items underwent face validity assessment by a multidisciplinary team with expertise in healthcare ethics, palliative care, clinical psychology and public health. The questionnaire's clarity and comprehension were then evaluated and refined based on feedback from a pilot study involving seven physicians across various specialities, ensuring its suitability for the target population.

Content of the questionnaire

The initial section of the questionnaire collected data on general demographic and professional characteristics of physicians, including age, sex, medical specialty, work setting, workload, years of professional experience and religious beliefs. Further, we asked doctors about their experiences, skills and encounters with palliative care and end-of-life care. The measurement of attitudes towards the legalisation of euthanasia and assisted suicide in Estonia was operationalised by assessing the responses of participants to 13 pertinent statements. To obtain a nuanced understanding of physician attitudes, the questionnaire included distinct sets of items addressing: (a) support for the legalisation of euthanasia; (b) support for the legalisation of assisted suicide; (c) willingness to personally perform euthanasia if legalised; and (d) willingness to personally perform assisted suicide if legalised. Respondents were required to indicate their agreement or disagreement with each statement using a 5-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree or strongly agree).

We specifically separated questions on the legalisation of euthanasia and questions on the legalisation of assisted suicide, and about willingness to perform euthanasia and assisted suicide, as these were the main objectives of this study. To ensure clarity and consistency in understanding the key concepts, the questionnaire included explicit definitions of euthanasia and assisted suicide, adapted from the World Medical Association declaration of euthanasia and physician-assisted suicide.[12]

In most other statements, a distinction was not made between euthanasia and assisted suicide, with the objective of minimising the length of the questionnaire.

The questionnaire was available in both the Estonian and Russian languages. It took up to 30 min to complete the questionnaire. The used questionnaire is presented as the online supplemental material.

Study sample

The study population was recruited through professional medical association listservs in Estonia.

A request was made for officials of each of the associations to forward the survey invitation to mailing lists of their members. Officials from all 23 national professional medical associations, including the Estonian Medical Association and the Estonian Association of Junior Doctors, were contacted and requested to forward a survey invitation to their respective membership mailing lists. The survey invitation was disseminated via the listservs on two separate occasions to maximise reach. Participants were informed of the purpose of the study and respondents completed the survey via REDCap (University of Tartu). Informed consent was obtained through the voluntary completion and submission of the questionnaire by participants. This study ensured the anonymity of participants by not collecting any individual identification or personal data. Furthermore, IP addresses of respondents were not recorded, and no incentives were offered for participation. The Ethics Committee of the University of Tartu, Estonia, approved this study on 20 December 2021, document number 365 T-19.

Patient and public involvement

Patients and public were not involved in this study.

Statistical analysis

Descriptive statistics, including median and IQR for age and length of work experience, and percentages for other background factors were calculated (table 1). Data

Table 1 Characteristics of the physicians (n=526) participating in the study

Characteristic		Number	Percentage
Sex	Male	135	25.7
	Female	391	74.3
Age in years	25–39	256	48.6
	40–64	221	42.0
	65–84	49	9.3
Native language	Estonian	457	86.9
	Russian	66	12.5
	Other	3	0.6
Working experience as a physician	<5 years	166	31.6
	6–10 years	86	16.3
	11–20 years	78	14.8
	>21 years	196	37.3
Specialty	No specialty	161	30.6
	Specialist doctor	365	69.4
Working setting	Hospital	399	75.8
	Primary healthcare	75	14.3
	Private clinic	33	6.3
	Other	19	3.6
Workload	Full time	303	57.6
	Part time	75	14.3
	Double load	139	26.4
	Not working	9	1.7
Being religious	Certainly	52	9.9
	To some extent	156	29.7
	Not at all	295	56.2
	Do not know	22	4.2
General health	Very good	149	28.3
	Good	318	60.5
	Neither good nor bad	48	9.1
	Poor	10	1.9
	Very poor	1	0.2
Participated in palliative care courses	No	347	66.0
	In some courses	154	29.3
	In several courses	25	4.7
Managing palliative care patients	Daily	84	16.0
	Several patients per month	162	30.8
	Some patients per year	158	30.0
	Hardly at all	122	23.2
Managing end-of-life care patients	Daily	56	10.6
	Several patients per month	160	30.4
	Some patients per year	161	30.6
	Hardly at all	149	28.4
Managing patients whose suffering is not relieved despite care	Daily	37	7.0
	Several patients per month	113	21.5
	Several patients per year	177	33.7
	Hardly at all	199	37.8
Has a patient asked you for euthanasia or physician-assisted death?	Yes	192	36.5
	No	296	56.3
	Do not remember	38	7.2

from Likert items were treated as ordinal, and descriptive statistics, such as median and percentages, were calculated to summarise the central tendency and variability of responses (figures 1 and 2). To analyse the association between the attitudes of physicians to agreement of euthanasia and assisted suicide with background factors, we used the multivariate logistic regression analysis (online supplemental table 1). For this analysis, answers to Likert items were recoded into two categories: agree/strongly agree versus don't know/disagree/strongly disagree. The ORs and 95% CIs were calculated with ORs adjusted to all variables presented in online supplemental table 1. A p value of less than 0.05 was considered indicative of statistical significance. Given the number of associations explored in this study, there is a potential for inflated Type I error. Our interpretation of the results focuses primarily on the overall patterns observed within the multivariable models and the magnitude of the adjusted estimates, rather than relying solely on individual p values.

Statistical analysis was carried out using statistical software Stata V.17.0.

RESULTS

Study participants

Altogether, 537 physicians participated in the study. According to the national registry of healthcare professionals (https://medre.tehik.ee/), there were 4508 physicians in Estonia in 2022. Based on the communication with the professional medical association's listserv managers, about 70–80% of the doctors are in the professional organisations mailing list. The estimated overlap between mailing lists is about 10–15%. Thus, our response rate is about 19%.

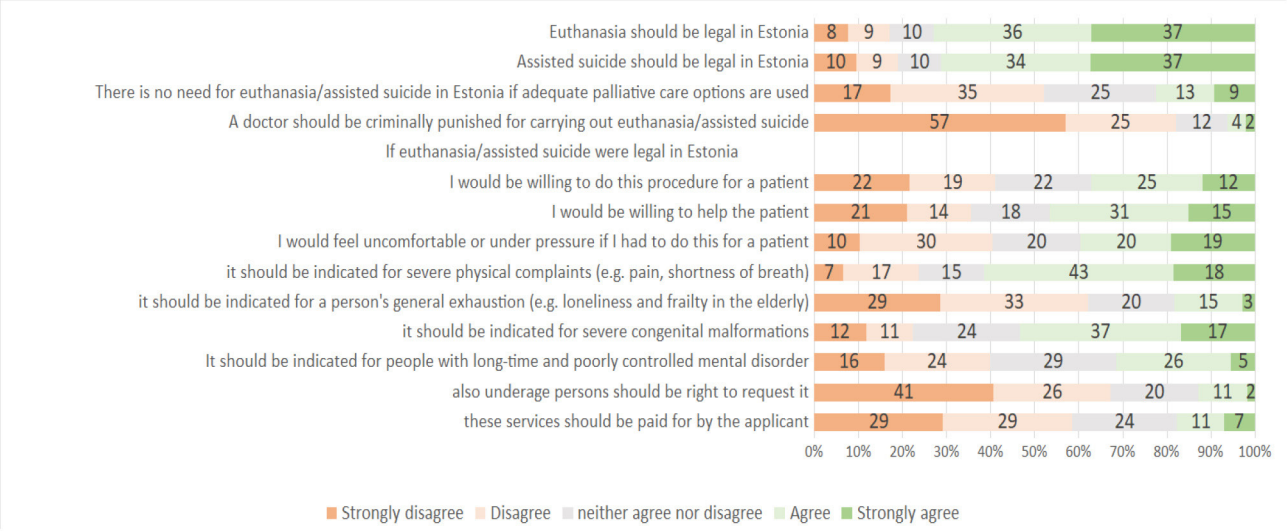

Figure 1 Attitudes towards euthanasia and assisted suicide among Estonian physicians (n=526) (data are presented as percentages), Estonia 2022.

Due to incomplete data, 11 questionnaires were excluded from the final analysis. Therefore, the total study sample is 526. Table 1 presents the general characteristics of the study group.

The median age of the participants was 40 (IQR 31–56) years and the median working experience as a physician was 12 (IQR 5–30) years.

Altogether, we had 365 specialised doctors from 28 different specialities and 161 general doctors (who had not performed residency training to be a specialist). The most common specialists were family doctors (n=68), anaesthesiologists and intensive care doctors (n=66), psychiatrists (n=31), paediatricians (n=22), radiologists (n=18), gynaecologists (n=18), ophthalmologists (n=16) and oncologists (n=15).

Figure 1 presents the distribution of physician opinions to the statements related to the legalisation of euthanasia and assisted suicide in Estonia.

Attitudes towards assisted suicide and euthanasia

Of the participants, 73% (95% CI: 68.8, 76.6) agreed (37% strongly agreed and 36% agreed) that euthanasia should be legal in Estonia. Similarly, 71% (95% CI: 67, 74.9) agreed (37% strongly agreed and 34% agreed) that assisted suicide should be legal in Estonia. If euthanasia were legal, 37% agreed (95% CI: 32.9, 41.3) (12%

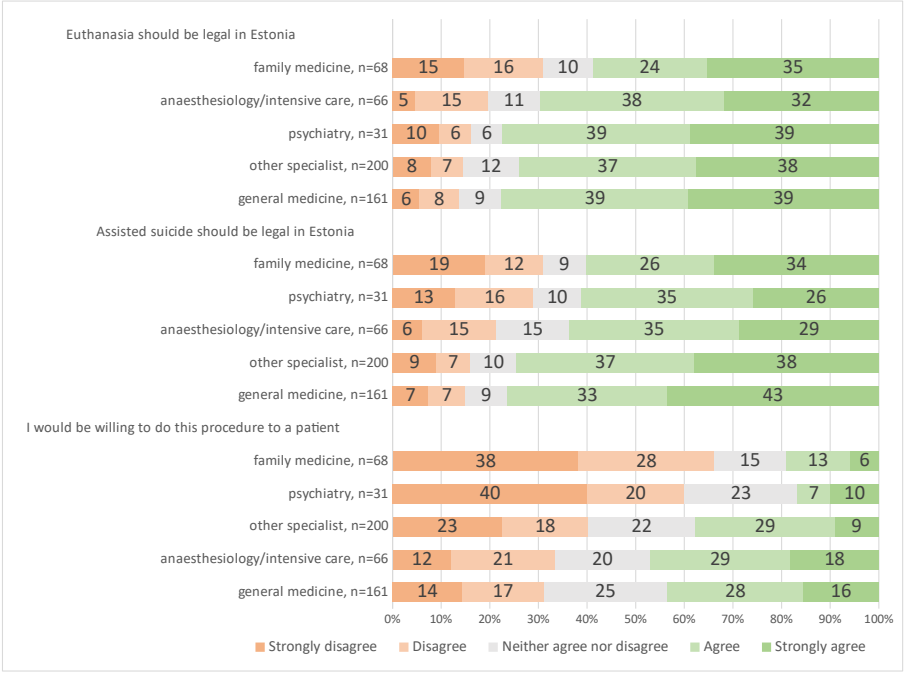

Figure 2 Physicians' attitudes towards legalisation of euthanasia and assisted suicide, and their willingness to do this procedure by specialty (n=526), Estonia 2022 (data are presented as percentages).

strongly agreed and 25% agreed) that they are willing to perform euthanasia to a patient. At the same time, 46% agreed (95% CI: 42.1, 50.8) (15% strongly agreed and 31% agreed) that they are willing to perform assisted suicide to a patient.

Our results show that men compared with women were statistically more willing to perform euthanasia/assisted suicide, with 48% of male and 33% of women agreeing to it (p=0.009). No association with sex was found in answers to other statements about the legalisation of assisted suicide or euthanasia.

Figure 2 presents the answered opinions of physicians (%) to the statements related to legalisation of euthanasia and assisted suicide as well as their willingness to do this procedure according to their specialty. We found that there were differences according to the specialty. For example, 78% of general doctors and 59% of family doctors agreed to legalising euthanasia (p=0.004), the respective results in assisted suicide were 76% and 60% (p=0.014). Only 19% of family doctors and 17% of psychiatrists agreed to do this procedure to their patients. The respective result among general doctors was 44% and anaesthesiology/intensive care was 47%.

Factors associated with physician attitudes towards euthanasia and assisted suicide

Online supplemental table 1 presents the results of the multivariate analysis of the proportion of physicians agreeing with the statement of legalisation of euthanasia and assisted suicide according to the background data. After adjusting for all background factors, not being religious, having Russian as a native language and sometimes managing end-of-life care patients were associated with increased agreement to euthanasia. The ORs were 8.0 (95% CI: 3.8, 16.8), 2.3 (95% CI: 1.1, 5.1) and 3.6 (95% CI: 1.3, 10.5), respectively. Conversely, 11–20 years of medical experience, having neither good nor bad general health and participation in courses on palliative care were associated with decreased agreement to euthanasia, with ORs of 0.2 (95% CI: 0.1, 0.7), 0.3 (95% CI: 0.1, 0.7) and 0.3 (95% CI: 0.1, 0.8), respectively (online supplemental table 1).

Concerning assisted suicide, after adjustment, only not being religious and sometimes managing of end-of-life care patients were associated with an increased agreement to assisted suicide, with ORs of 9.7 (95% CI: 4.7, 20.2) and 2.6 (95% CI: 1.1, 6.6), respectively (online supplemental table 1).

DISCUSSION

This study explored the attitudes of physicians working in Estonia towards the legalisation of euthanasia and assisted suicide. Our findings indicate that a significant proportion of the surveyed physicians supported the legalisation of both practices. We also document both shared (religiosity and palliative care-related factors) and distinct (native language, years of experience and self-reported health) factors influencing attitudes of Estonian physicians towards the legalisation of euthanasia and assisted suicide.

Factors influencing attitudes towards assisted suicide and euthanasia

One of the factors associated with decreased agreement to euthanasia/assisted suicide was having religious beliefs. Religiosity appeared to be one of the strongest predictors of opposition to assisted dying, also according to the systematic literature review and studies from other countries.[8 9 13] On the other hand, Estonia is classified as one of the least religion-practising countries in Europe.[14] According to the last population survey in 2021, 58% of the Estonian population do not express any religious affiliation, which is in line with our results that 56% reported being not at all religious; still, the religiosity percentage is much higher among the Russian-speaking population.[15]

Physicians who reported having attended several palliative care educational courses were less supportive of euthanasia compared with doctors who were less active in palliative care education. Previous studies have also shown that physicians with more experience in palliative medicine tend to oppose the use of euthanasia and assisted suicide.[8 11 16] However, in the present study, 66% of the physicians reported no participation in any palliative care courses. Lack of knowledge in palliative care among healthcare practitioners is the rather concerning factor because physicians with incomplete skills in palliative care may see euthanasia and assisted suicide as a substitute for proper end-of-life care and in addressing patient suffering.

A key similarity lies in the significant association of non-religious beliefs and infrequent management of palliative/end-of-life care patients with greater support for the legalisation of both practices. This underscores the potential importance of both personal belief systems and professional experience in shaping attitudes towards end-of-life options.

Influence of physician demographics and experience

Literature has shown that younger physicians with less medical as well as palliative care experience were more in favour of euthanasia/assisted suicide legalisation compared with older ones.[8 9 11] This could be explained by ageing people usually encountering more diversity, which may influence a reduction in strong beliefs. In addition, medical education and social context to grow up and work may influence the change in attitude during ageing. In addition, factors such as 11–20 years of medical experience and having neither good nor bad general health were statistically associated with agreement to euthanasia. These distinct associations may reflect the complex interplay of cultural perspectives and the nuanced influence of cumulative medical experience on individual evaluations of end-of-life decisions by physicians.

Trends in physician attitudes over time

This study reveals a substantial shift in the attitudes of Estonian physicians towards euthanasia and assisted suicide, with a significant increase in support for legalisation compared with two decades ago. 20 years ago, 40% of physicians reported an accepting attitude towards euthanasia.[10] Similar findings that physicians are nowadays more supportive towards euthanasia/assisted suicide have also been reported by other countries.[9 11] The increasing agreement with assisted suicide among physicians over time can be influenced by several factors. Evolving societal attitudes towards autonomy and individual rights, as well as a contemporary medical ethics framework, which places a strong emphasis on respecting patient autonomy, may all have contributed to increased acceptance of assisted suicide/euthanasia among medical professionals. Still, there are also strong opinions by physicians against euthanasia/assisted suicide.[17]

Strengths and limitations

This study acknowledges several factors that may influence the interpretation of its findings. The non-probability sampling method employed limits the generalisability of the results to all physicians in Estonia. Additionally, the relatively low response rate (approximately 19%) increases the potential for non-response bias. The reliance on self-reported data introduces the possibility of measurement biases, including recall and social desirability biases.

However, the study also demonstrates notable strengths. The questionnaire development process incorporated a review of relevant literature, input from a multidisciplinary expert team to establish content validity and a pilot study to assess comprehension, which collectively enhance the instrument's quality. Furthermore, the study revealed clear and consistent patterns in the data, particularly concerning the influence of religiosity and palliative care training on physician attitudes, suggesting a degree of robustness in the results.

This study identified both common and distinct factors associated with support by Estonian physicians for euthanasia and assisted suicide. Non-religious beliefs and not managing palliative/end-of-life care patients regularly were associated with agreement towards both euthanasia and assisted suicide. In addition, agreement with euthanasia also demonstrated unique associations with several additional factors: having Russian as a native language, having 11–20 years of medical experience, reporting neither good nor bad general health and having received palliative care training. These unique associations may reflect underlying cultural perspectives and the influence of cumulative medical experience on the attitudes of physicians towards end-of-life decisions. These distinct findings underscore the need for tailored educational initiatives and nuanced policy discussions. Furthermore, considering the experiences of other countries, the legalisation processes for euthanasia and assisted suicide are complex and warrant a cautious, phased approach.[18]

Conclusion

Euthanasia and assisted suicide are important topics in contemporary medicine. Our findings reveal a growing favourability among Estonian physicians towards euthanasia and assisted suicide.

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Contributors AK, AA, AU and KS designed the study protocol; AK collected data; HP performed data analyses; KS wrote the first draft; all authors contributed to critical revision and agreed with the final manuscript. KS is responsible for the overall content as guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, conduct, reporting or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval All methods were carried out in accordance with relevant guidelines and regulations. The Ethics Committee of the University of Tartu approved this study and the questionnaire on 20 December 2021, document number 365T-19.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. All data generated or analysed during this study are included in this article. Data are available on reasonable request.

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REFERENCES

1 Cassel EJ. The nature of suffering and the goals of medicine. *N Engl J Med* 1982;306:639–45.
2 Rodríguez-Prat A, Balaguer A, Booth A, *et al*. Understanding patients' experiences of the wish to hasten death: an updated and expanded systematic review and meta-ethnography. *BMJ Open* 2017;7:e016659.
3 Dierickx S, Deliens L, Cohen J, *et al*. Euthanasia for people with psychiatric disorders or dementia in Belgium: analysis of officially reported cases. *BMC Psychiatry* 2017;17:203.
4 Koopman JJE, Putter H. Regional variation in the practice of euthanasia and physician-assisted suicide in the Netherlands. *Neth J Med* 2016;74:387–94.
5 Jones RM, Simpson AIF. Medical assistance in dying: challenges for psychiatry. *Front Psychiatry* 2018;9:678.
6 Mroz S, Dierickx S, Deliens L, *et al*. Assisted dying around the world: a status quaestionis. *Ann Palliat Med* 2021;10:3540–53.
7 Suija K, Mason SR, Elsner F, *et al*. Palliative care training in medical undergraduate education: a survey among the faculty. *BMC Palliat Care* 2024;23:19.

8 McCormack R, Clifford M, Conroy M. Attitudes of UK doctors towards euthanasia and physician-assisted suicide: a systematic literature review. *Palliat Med* 2012;26:23–33.
9 Piili RP, Louhiala P, Vänskä J, *et al*. Ambivalence toward euthanasia and physician-assisted suicide has decreased among physicians in Finland. *BMC Med Ethics* 2022;23:71.
10 Labotkin R, Suija H, Fedossov V. Eesti arstide suhtumine eutanaasiasse. *Eesti Arst* 1999;3–6.
11 Lynøe N, Lindblad A, Engström I, *et al*. Trends in Swedish physicians' attitudes towards physician-assisted suicide: a cross-sectional study. *BMC Med Ethics* 2021;22:86.
12 The World Medical Association. Declaration on Euthanasia and Physician-Assisted Suicide. 2021 WMA Declaration on Euthanasia and Physician-Assisted Suicide – WMA. 2021.
13 Herath H, Wijayawardhana K, Wickramarachchi UI, *et al*. Attitudes on euthanasia among medical students and doctors in Sri Lanka: a cross sectional study. *BMC Med Ethics* 2021;22:162.
14 Coutinho JP. Religiosity in Europe: an index, factors, and clusters of religiosity. *SPP* 2016;2016:163–88.
15 Census. Small rise in Estonia in those with no religious beliefs, 2022. Available: https://news.err.ee/1608774886/census-small-rise-in-estonia-in-those-with-no-religious-beliefs
16 Macleod RD, Wilson DM, Malpas P. Assisted or hastened death: the healthcare practitioner's dilemma. *Glob J Health Sci* 2012;4:87–98.
17 Sprung CL, Somerville MA, Radbruch L, *et al*. Physician-assisted suicide and euthanasia: emerging issues from a global perspective. *J Palliat Care* 2018;33:197–203.
18 Downar J, Close E, Young JE, *et al*. Assisted dying: balancing safety with access. *BMJ* 2024;387:q2382.