

Swiss doctors' attitudes towards end-of-life decisions and their determinants

A comparison of three language regions

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Summary

Objectives: To investigate attitudes to end-of-life decisions, and the influence of cultural factors and of doctors' personal characteristics on these attitudes.

Method: As part of a European research project (EURELD), a study on attitudes towards medical end-of-life decisions was conducted among doctors in the German-, French- and Italian-speaking areas of Switzerland. A written questionnaire was sent to a random sample of nine different types of specialist; it presented 14 statements on end-of-life decisions and doctors were asked whether they agreed or disagreed with them.

Results: The response rate was 64%. 1360 questionnaires were studied. The results show general agreement with statements on the alleviation of pain and other symptoms with possible life-shortening effect, as well as on non-treatment decisions. The language region was a strong determinant of agreement on some attitudes towards end-of-life decisions. Agreement on the use of

lethal drugs and alleviation of pain and other symptoms with possible life-shortening effect was higher among French-speaking than among German- and Italian-speaking doctors. For non-treatment decisions, agreement was higher in the German-speaking region than in the French- and Italian-speaking regions of the country. Italian-speaking doctors were strongly opposed to any kind of end-of-life decision. Religious believers and those who attended a larger number of terminal patients tended to disagree more often with end-of-life decisions than the other doctors.

Conclusions: In end-of-life decision-making, Switzerland represents "Europe in miniature". The impact on end-of-life decisions of cultural factors and the number of terminal patients attended needs further consideration.

Key words: end-of-life decisions; doctors; determinants; Switzerland

Introduction

Until the European research project "Medical end-of-life decisions" (EURELD/European end-of-life decisions) was undertaken, there were no quantifiable results on end-of-life decisions made by Swiss doctors for their patients. This project investigated the practices, attitudes and intentions of doctors regarding end-of-life decisions (decisions about non-treatment, euthanasia, assisted suicide, alleviation of pain or other symptoms with possible life-shortening effect) in six European countries. The first empirical results of this quantitative study showed that medical end-of-life decisions frequently preceded dying in the German-speaking part of Switzerland: in the year 2001, every second death was preceded by an end-of-life decision, with non-treatment decisions being the most com-

mon [1]. The second part of this European project in Switzerland included the French-speaking and Italian-speaking regions.

It has been found that end-of-life decisions are determined by the particular clinical situation, as well as by certain personal characteristics of the doctors concerned and cultural differences between countries. Terminal illness, advanced age, no hope of recovery, unbearable pain and suffering, a patient's request not to prolong his/her life or to hasten his/her death have been found to be relevant clinical factors in the different studies carried out [2, 3]. Among the doctors' personal characteristics, gender, age, religion and speciality are the potential determinants most often investigated. Religious affiliation and commitment have

The Swiss part of the project was funded by the Swiss Federal Office for Education and Research (Contract BBW 99.0889), the Swiss Cancer League, the Swiss Federation against Cancer and the Swiss Academy of Medical Sciences. All authors confirm that there are no conflicts of interest.

been consistently indicated as strong determinants of attitude towards medical end-of-life decisions [2–6]. Gender differences have not been found in most studies [7]. Some types of specialist are less likely to support end-of-life decisions than others: oncologists are less supportive of euthanasia or assisted suicide than other specialists [3, 8, 9]. Cultural factors and other country-specific factors have also been found to be relevant to the differences between countries in practices and attitudes to end-of-life decisions [1, 5, 6, 9].

Apart from these factors, end-of-life decision-making practices, as well as attitudes and intended behaviour, may be associated with the legal background. In Switzerland, non-treatment decisions and the alleviation of pain or other symptoms with possible life-shortening effect are legal but are not regulated in the Swiss Penal Code. Assisted suicide is allowed if it is performed disinterestedly (Art.

115) whilst euthanasia is prohibited in all circumstances (Art. 111, 113 and 114).

The present article describes the Swiss results of the second study conducted within the European project “Medical end-of-life decisions” [9], which focused on attitudes and intended behaviour and their determinants. As this study was conducted in the German-, French- and Italian-speaking parts of Switzerland, we had the opportunity to investigate the influences of cultural factors as well as doctors’ personal characteristics. The objectives were as follows: firstly, to describe the attitudes towards end-of-life decisions in the German-, French- and Italian-speaking parts of Switzerland, and secondly, to discover the extent to which these attitudes are determined by cultural factors (language regions) and by doctors’ personal characteristics.

Methods

Design: Within the EURELD-project, an eight-page questionnaire with pre-structured questions was sent to practitioners of nine different specialties in Switzerland (German-, French- and Italian-speaking regions) between October and November 2002.

Population: Doctors from the following specialties were asked to participate: anaesthesiology, general practice, geriatrics, gynaecology, internal medicine, neurology, oncology, pulmonology and surgery. A random sample of 300 doctors for each speciality was drawn from the professional registers of the Swiss Medical Association (FMH). When there were fewer than 300 doctors working in a speciality, all specialists were included in the sample. The response rate for doctors who could be tracked was 64% (n = 1449). Of these, 3.6% (n = 52) indicated that they were not currently working and 2.6% (n = 37) did not answer this question, so both groups were excluded from the analysis. 1360 questionnaires were analysed. The data-collection procedure precluded identification of any of the doctors.

Measurement tool: The questionnaire consisted of pre-structured questions. A common English version was translated into the languages of the different regions and then translated back into English to check for inconsistencies. Besides questions on doctors’ personal characteristics, questions were asked about intended behaviour, attitudes and experience concerning end-of-life care. Attitudes were assessed by studying the responses to a list of 14 statements. Statements 1, 5, 9 and 10 were derived from the scientific literature [10–13]. The remaining statements were formulated by the research group. Statement 8, which concerned the medical role in cases of assisted suicide, was omitted in the Italian version of the questionnaire.

The doctors’ personal characteristics considered in this paper are “gender”, “age”, “speciality”, “number of terminal patients attended during the last 12 months” and “life stance”. “Life stance” describes importance of religion/philosophy of life in end-of-life decision-making (religion important/very important, philosophy of life important/very important, no religion/philosophy of life or religion/philosophy of life not important). “Life stance” is a derived variable from the variables “religion/philosophy of life”¹ and “importance of religion/philosophy of

life in professional attitudes towards end-of-life decision-making”².

Definitions: When referring to medical decisions, a precise description was given rather than using terms that would be open to interpretation. Questions were asked about:

- Withholding or withdrawing treatment, taking into account the probability or certainty that this would hasten the end of the patient’s life.
- Greater alleviation of pain and/or symptoms by using drugs such as opioids, taking into account the probability or certainty that this would hasten the end of the patient’s life.
- Administering drugs with the explicit intention of hastening the end of the patient’s life (with or without the patient’s explicit request).
- Prescribing or supplying drugs at the express wish of a patient, with the explicit intention of hastening the end of life.

Statistical analysis: Results were corrected for stratification to make them representative for all doctors in the specialties sampled. Each case was weighted according to the population size of the speciality concerned divided by the number of questionnaires returned for this speciality.

Weighted percentage of agreement (strongly agree/agree) with statements and 95% confidence intervals were reported. Separate multivariate logistic regression was performed for each statement (strongly agree/agree) to determine the association with the language regions and doctors’ personal characteristics. Independent variables were: “language region” (German-, French- and Italian-speaking), “sex” (male, female), “age”

1 The wording of the question was: “What do you consider to be your religion or philosophy of life?” Answers were classified for analysis into three categories: “any religion”, “any specific philosophy of life” and “no specific philosophy of life/no religion”, including cases e.g. secularist, non-believer.

2 The wording of the question was: “How important is your religion or philosophy of life in your professional attitude towards end-of-life decision-making?” Answers were classified for analysis into two categories: “very important/important” and “less important/not important”.

(≤ 50 years, > 50 years), "number of terminal patients attended during the last 12 months" (≤ 4 terminal patients, > 4 terminal patients), and "life stance" (religion important/very important, philosophy of life important/very important, no religion/philosophy of life or religion/philosophy of life not important). Each of the categories of the variables "language regions" and "life stance" was dummy coded and entered as distinct variables.

"Survey" STATA 8 commands were used to take strata and weighting [14] into consideration. In logistic regression analysis, independent variables are not allowed to correlate closely with one another. Since there was a close correlation between speciality and number of terminally ill patients treated, the variable 'speciality' had to be excluded from the analysis.

Results

Responses and personal characteristics of doctors (table 1)

1360 questionnaires were studied. No statistically significant differences in response rates were found between the language regions (German-speaking and French-speaking regions: 64%; Italian-speaking region: 63%) but there were statistically significant differences between the specialities (54% in gynaecology and 74% in geriatrics). Most of the doctors were males aged over 40. Approx. 37% were general practitioners. Some 20% of them had not attended a terminal patient during the last 12 months (varying between 17% in the German region and 25% in the Italian region). The geriatricians and oncologists had treated the largest number of terminally ill patients (data not shown in table): 87% of these two groups had managed more than 10 terminally ill patients during the last 12 months. They were followed by the

pulmonologists, anaesthesiologists and internists (some 40% of these had treated more than 10 terminally ill patients), surgeons (30%) and general practitioners (24%). Neurologists and gynaecologists were less often involved in end-of-life decisions (only 10% and 2% respectively had managed more than 10 terminally ill patients). For 47% of the doctors religion and for 8% philosophy of life was important in professional attitudes towards decision-making.

Agreement with statements on end-of-life decisions (table 2)

Table 2 shows the percentages of doctors who "strongly agreed" or "agreed" with statements on end-of-life decisions. The highest rate of agreement occurred for the statements relating to the alleviation of pain and other symptoms with possible life-shortening effect (Statement 4: varying

Table 1

Questionnaires studied (number) and personal characteristics of the doctors (weighted percentages).

		Swiss German	Swiss French	Swiss Italian	All three regions
Number of questionnaires studied		945	363	52	1360
Gender	Male	79	81	97	80
	Female	21	19	3	20
Age	<40	15	12	6	14
	40–50	41	42	29	41
	>50	44	46	65	45
Speciality	General practice	40	28	29	37
	Anaesthesiology	10	12	6	10
	Geriatrics	1	1	2	1
	Gynaecology	12	14	12	12
	Internal medicine	19	26	22	21
	Neurology	3	4	6	3
	Oncology	2	2	6	2
	Pulmonology	2	4	1	3
	Surgery	12	8	17	11
Number of terminal patients attended during the last 12 months					
0		17	26	25	20
1–4		31	35	24	32
5–9		20	17	25	20
≥ 10		31	22	26	29
Life stance towards end-of-life decision-making					
Religion (very) important		49	38	49	47
Philosophy of life (very) important		8	7	13	8
No religion/philosophy of life or religion/philosophy of life not important		42	54	38	45

Table 2

Weighted percentage (95% CI) of doctors who agreed or strongly agreed with each statement on end-of-life decisions.

	Swiss German	Swiss French	Swiss Italian	All three regions
Number of questionnaires studied	945	363	52	1360
1. Doctors should comply with a patient's request to withhold or withdraw life-sustaining treatment	95 (93–96)	91 (86–94)	90 (72–97)	94 (92–95)
2. If a patient is not competent, relatives should be allowed to decide whether or not to withhold or withdraw life-sustaining treatment	53 (49–57)	46 (39–52)	47 (31–64)	51 (48–55)
3. Decisions to intensify the alleviation of pain and/or symptoms by using potentially life-shortening drugs should be discussed with the patient	94 (92–95)	93 (88–96)	77 (58–89)	93 (91–94)
4. If necessary, a terminally ill patient should receive drugs to relieve pain and suffering, even if these drugs may hasten the end of the patient's life	95 (93–96)	99 (98–100)	96 (84–99)	96 (94–97)
5. A person should have the right to decide whether or not to hasten the end of his or her life	60 (56–63)	67 (61–73)	50 (33–67)	61 (58–64)
6. Sufficient availability of high-quality palliative care averts almost all requests for euthanasia or assisted suicide	70 (67–74)	64 (58–70)	77 (60–89)	69 (66–72)
7. Every person should be allowed to appoint another person to be legally entitled to make end-of-life decisions on his or her behalf in the event of incompetence	54 (50–58)	63 (56–69)	42 (26–59)	56 (53–59)
8. In Switzerland assisted suicide is legal if is performed disinterestedly. It should be provided only by doctors ^a	46 (42–50)	40 (34–46)	– –	43 (40–47)
9. In all circumstances doctors should aim at preserving the lives of their patients, even if patients ask for the hastening of the end of their lives	4 (3–6)	11 (8–15)	33 (18–51)	7 (6–9)
10. Permitting the use of drugs in lethal doses on the explicit request of the patient will gradually lead to an increase in the use of drugs in lethal doses unrequested by the patient	30 (27–34)	24 (19–30)	41 (25–59)	29 (26–32)
11. The use of drugs in lethal doses at the patient's explicit request is acceptable for patients in terminal illness with extreme uncontrollable pain or other distress	53 (49–57)	65 (59–71)	41 (26–58)	56 (52–59)
12. If a terminally ill patient is suffering unbearably and is not capable of making decisions, the doctor should be allowed to administer drugs in lethal doses	29 (25–33)	41 (35–48)	42 (26–60)	32 (29–35)
13. Permitting the use of drugs in lethal doses at the patient's explicit request will harm the patient-doctor relationship	28 (25–32)	22 (17–28)	25 (13–43)	26 (24–30)
14. Clear wishes on withholding or withdrawing life-sustaining treatment of an incompetent patient as expressed in an advance directive must always be respected, even if this could hasten the end of the patient's life	87 (84–89)	84 (78–88)	75 (57–88)	86 (83–88)

^a This item was not included in the Italian version of the questionnaire

between 95% and 99%; Statement 3: varying between 77% and 94%), as well as for the non-treatment decision at a patient's request (Statement 1: varying between 90% and 95%). The lowest rate of agreement was found in relation to the 'life preservation' statement corresponding to the Hippocratic oath (Statement 9: 7% for the whole of Switzerland, varying between 4% and 33% over the three language regions). Agreement with the use of lethal drugs varied between 29% and 65% (Statements 11 and 12); this agreement is significantly higher if there is an explicit request by a terminal patient with extreme uncontrollable pain and distress (Statement 11), than if the patient is not competent to make such a request (Statement 12).

The biggest differences between the language regions were found for the "use of lethal drugs at explicit request" (Statement 11) and "life preservation" (Statement 9). The agreement with Statement 11 is statistically significantly lower in the Italian-speaking part than in the French-speaking region and the agreement with "life preservation" is significantly higher in the Italian-speaking area than in French- and German-speaking Switzerland.

Determinants of agreement (Table 3)

Language region: The language region was a strong determinant of agreement with statements concerning alleviation of pain and other symptoms (Statements 3 and 4) as well as for the non-treatment decisions (Statement 1), the use of lethal drugs (Statements 11 and 12) and life preservation (Statement 9). Doctors from the French-speaking region were less in favour of non-treatment decisions, but more in favour of alleviation of pain and other symptoms with possible life-shortening side effects, and the use of lethal drugs, than doctors from German-speaking Switzerland. Doctors from the Italian-speaking region supported alleviation of pain and symptoms less often, and supported life preservation more often than their German-speaking counterparts. The strongest influence of the language region was found in attitudes towards life preservation and alleviation of pain and other symptoms. The odds ratio for doctors from the Italian-speaking area assenting to "life preservation" is ten times higher than for doctors from the German-speaking region, while the odds ratio of doctors from the French-speaking part, with support for terminally ill patients receiving drugs to relieve pain and suffering, even if these

drugs may hasten the end of the patient's life, is eight times higher than that of their German-speaking colleagues.

Gender: Women doctors were more likely to support the statement that adequate availability of high quality palliative care averts almost all requests for physician-assisted dying (Statement 6). Gender was not a relevant determinant for the other statements.

Age: Doctors aged over 50 supported the state-

ment that assistance in committing suicide should be provided by doctors only (Statement 8) and the "slippery slope" argument (Statement 10) more often than younger doctors.

Number of terminal patients: Doctors who had attended more than five terminal patients during the last 12 months were less supportive of the right to decide on hastening one's own death than doctors who had attended fewer terminally ill patients. More of them supported the "slippery slope"

Table 3

Odds ratios (95% CI) for agreement with statements on end-of-life decisions (multivariate logistic regressions, significant odds ratios given in bold).

	French-speaking region ^a	Italian-speaking region ^a	Female ^b	>50 years old ^c	>4 terminal patients in 12 months ^d	Religion (very) important ^e	Philosophy of life (very) important ^e
1. Doctors should comply with a patient's request to withhold or withdraw life-sustaining treatment	0.50 (0.27–0.91)	0.49 (0.10–2.30)	0.89 (0.43–1.83)	1.22 (0.72–2.07)	0.89 (0.53–1.58)	0.98 (0.56–1.70)	4.54 (0.61–33.97)
2. If a patient is not competent, relatives should be allowed to decide whether or not to withhold or withdraw life-sustaining treatment	0.72 (0.51–1.01)	0.73 (0.35–1.53)	1.19 (0.82–1.73)	1.13 (0.84–1.53)	0.94 (0.70–1.26)	1.04 (0.77–1.40)	1.43 (0.82–2.48)
3. Decisions to intensify the alleviation of pain and/or symptoms by using potentially life-shortening drugs should be discussed with the patient	0.80 (0.39–1.61)	0.21 (0.08–0.55)	1.27 (0.54–2.97)	1.07 (0.58–1.98)	1.15 (0.64–2.09)	1.01 (0.56–1.84)	0.82 (0.29–2.31)
4. If necessary, a terminally ill patient should receive drugs to relieve pain and suffering, even if these drugs may hasten the end of the patient's life	7.61 (2.05–28.22)	1.07 (0.24–4.80)	0.88 (0.40–1.95)	1.11 (0.53–2.34)	1.77 (0.82–3.81)	0.88 (0.43–1.79)	3.75 (0.71–19.70)
5. A person should have the right to decide whether or not to hasten the end of his or her life	1.21 (0.86–1.70)	0.63 (0.29–1.39)	1.10 (0.74–1.65)	1.17 (0.86–1.61)	0.70 (0.52–0.95)	0.57 (0.41–0.77)	1.10 (0.62–1.96)
6. Adequate availability of high-quality palliative care averts almost all requests for euthanasia or assisted suicide	0.87 (0.62–1.23)	1.46 (0.58–3.71)	1.51 (1.02–2.24)	1.24 (0.89–1.72)	2.01 (1.47–2.76)	1.84 (1.33–2.55)	1.89 (1.05–3.41)
7. Every person should be allowed to empower another person legally to make end-of-life decisions on his or her behalf in the event of incompetence	1.32 (0.94–1.84)	0.60 (0.27–1.29)	1.22 (0.84–1.77)	1.11 (0.82–1.51)	1.09 (0.81–1.46)	0.74 (0.55–0.99)	1.75 (0.98–3.12)
8. In Switzerland assisted suicide is legal if is performed disinterestedly. It should be provided only by doctors ^a	0.80 (0.57–1.12)	–	0.72 (0.49–1.07)	1.55 (1.14–2.10)	1.02 (0.75–1.37)	0.85 (0.63–1.15)	1.15 (0.64–2.06)
9. In all circumstances doctors should aim at preserving the lives of their patients, even if patients request hastening of the end of their lives	2.91 (1.66–5.12)	10.60 (4.19–26.80)	0.71 (0.36–1.40)	0.96 (0.56–1.64)	1.18 (0.69–2.00)	1.73 (1.01–2.97)	0.98 (0.27–3.60)
10. Permitting the use of drugs in lethal doses at the patient's explicit request will gradually lead to an increase in the use of drugs in lethal doses unrequested by the patient	0.77 (0.52–1.13)	1.59 (0.67–3.81)	0.93 (0.61–1.41)	1.58 (1.13–2.21)	1.63 (1.17–2.26)	2.04 (1.46–2.85)	0.60 (0.29–1.22)
11. The use of drugs in lethal doses at the patient's explicit request is acceptable for patients with a terminal illness with extreme uncontrollable pain or other distress	1.51 (1.07–2.15)	0.50 (0.24–1.05)	1.15 (0.79–1.69)	1.25 (0.92–1.71)	0.94 (0.70–1.28)	0.41 (0.30–0.56)	1.27 (0.72–2.25)
12. If a terminally ill patient is suffering unbearably and is not capable of making decisions, the doctor should be allowed to administer drugs in lethal doses	1.65 (1.16–2.35)	1.71 (0.83–3.54)	0.81 (0.55–1.21)	1.18 (0.85–1.64)	0.82 (0.59–1.13)	0.62 (0.44–0.86)	1.27 (0.72–2.22)
13. Permitting the use of drugs in lethal doses at the patient's explicit request will harm the patient-doctor relationship	0.76 (0.51–1.14)	0.95 (0.40–2.26)	1.47 (0.97–2.21)	1.09 (0.78–1.54)	1.69 (1.21–2.37)	2.44 (1.73–3.45)	1.02 (0.52–2.00)
14. Clear wishes on withholding or withdrawing life-sustaining treatment of an incompetent patient as expressed in an advance directive must always be respected, even if this could hasten the end of the patient's life	0.70 (0.45–1.10)	0.38 (0.15–1.01)	0.82 (0.50–1.34)	1.48 (0.98–2.24)	1.11 (0.72–1.69)	1.07 (0.72–1.60)	2.27 (0.79–6.58)

^a Reference group = German-speaking region; ^b Reference group = ≤50 years; ^c Reference group = male;

^d Reference group = ≤4 terminal patients during the last 12 months; ^e Reference group = religion or philosophy of life not important

argument, the assertion that good palliative care averts almost all requests for physician-assisted dying, and that allowing euthanasia will harm the doctor-patient relationship.

Doctors' life stance: Religiously committed doctors expressed more support for life preservation, for the “slippery slope” argument, for the statements that sufficient palliative care precludes almost all requests for physician-assisted dying and that allowing euthanasia will harm the doctor-pa-

tient relationship. They agreed less often than the other doctors to euthanasia and the ending of life not requested by the patient, for the right to decide on the hastening of one's own death and for appointment of another person in the case of incompetence. Philosophically committed doctors expressed more support for the statement that good palliative care averts almost all requests for euthanasia and assisted suicide.

Discussion

The EURELD study is the first to investigate end-of-life decisions in Switzerland and allows comparison between the different language regions.

The findings that a large majority of doctors in all three language regions support non-treatment decisions and alleviation of pain and other symptoms, taking into account the probability that this would hasten the patient's death, indicate that Swiss doctors accept these kinds of end-of-life decision and thus the legislation and the Swiss Academy of Medical Sciences guidelines on non-treatment decisions and alleviation of pain and other symptoms are indeed reflected in doctors' attitudes.

The finding that about half of doctors accepted the use of drugs in lethal doses at the explicit request of terminally ill patients suffering extreme uncontrollable pain or other distress is difficult to discuss, since the legal definition of “the use” comprises both prescription and administration. Whilst the prescription of lethal drugs in Switzerland is allowed if it is disinterested (assisted suicide), direct administration by a doctor exposes him/her to prosecution in all circumstances (euthanasia). However, our results, showing that approx. one third of doctors find the use of lethal drugs acceptable if a terminally ill patient is suffering unbearably and is not capable of making decisions, is clearly in contravention of Swiss law. Hence there is a divergence between the current legislation and a minority of doctors' attitudes.

Individual doctors' personal characteristics as well as cultural factors were found to affect decisions, as has been shown in previous studies. The influence of gender on end-of-life decisions was almost negligible. Religious life stance was associated with greater agreement with life preservation, and with the negative aspects and fears of allowing euthanasia (e.g. the “slippery slope” argument and harming the doctor-patient relationship); religiously committed doctors were more opposed than other doctors to euthanasia, ending of life not requested by the patient, the right to decide on the hastening of one's own death and the right to empower another person legally to make end-of-life decisions in case of incompetence. These findings can be explained by traditional religious beliefs, which tend to focus on three ideas: “(1) resistance to ‘playing God’, (2) the commandment not to kill, and (3) the potential spiritual benefits of suffering”

[15]. Furthermore, our results indicate that doctors who treat a larger number of terminally ill patients tend to see the negative aspects of end-of-life decisions more often than doctors who attend fewer such patients. These results are consistent with those reported in the literature [16].

Some statistically significant differences in attitudes were found between the language regions. French-speaking doctors ranked higher than their German-speaking colleagues in supporting the use of lethal drugs (euthanasia, assisted-suicide) and in the alleviation of pain and other symptoms with possible life-shortening effect, while they were less supportive than German-speaking doctors of the statement that doctors should comply with a patient's request for non-treatment decisions. Doctors from the Italian-speaking part were significantly more opposed than their German-speaking colleagues to the statement that decisions to intensify the alleviation of pain and/or symptoms by using potentially life-shortening drugs should be discussed with the patient. Italian-speaking and French-speaking doctors were also more supportive of life preservation even if the patient requests hastening of the end of life. Due to the differences between the language regions, the results of the first study on practices in end-of-life decisions – conducted in the German-speaking part of Switzerland [1] – cannot be automatically extrapolated to the whole of Switzerland. The differences between the language regions cannot be explained by different regulations or guidelines concerning end-of-life decisions: the same legislation applies, and the guidelines for end-of-life decisions from the Swiss Academy of Medical Sciences are valid throughout Switzerland.

When the differences in attitudes towards end-of-life decisions between the language regions are compared with international data, it can be seen that the differences and patterns found in the three Swiss language regions are similar to those of Germany, France and Italy [5, 9]. In the EURONIC study, the frequency of non-treatment decisions was highest in Germany, followed by France. The lowest frequency was found in Italy. The proportions of doctors who had administered drugs for the purpose of ending life, as well as of doctors who had administered sedatives/analgesics

to suppress pain even at risk of respiratory depression and death, were highest in France, followed by Germany, and were lowest in Italy [5]. Thus it is fair to say that, with respect to attitudes towards end-of-life decisions, Switzerland represents 'Europe in miniature'.

We made an effort to reduce bias in our results by ensuring anonymity and asking doctors what they actually did instead of using terms that are normally or ethically biased. However, we know that agreement rates tend to be higher among responders than among non-responders for euthanasia, non-treatment decisions and life-preserving statements (euthanasia, item 11: agreement rate adjusted for non-response: 51%, unadjusted: 56%; non-treatment, item 1: agreement rate adjusted for non-response: 93%, unadjusted: 94%; life-preserving statements, item 9: agreement rate adjusted for non-response: 6%, unadjusted: 7%) [17]. Thus, non-participation has caused overestimation of the number of proponents of life-shortening as well as of life-preserving end-of-life decisions. In addition, we cannot exclude bias in our results, e.g. on grounds of social desirability. Even if the social desirability bias is less in anonymous surveys than in interviews, it is still possible that doctors gave socially desired answers. If such a bias does exist, it can be assumed that the answers are influenced by legal requirements as much as by other norms that may differ with language region, speciality etc.

Apart from research on social desirability in end-of-life surveys, further research is needed to discover the specific cultural and social factors that

may be relevant to the differences between the language regions, and those experiences with dying patients which cause doctors who have treated a large number of terminal patients to be less supportive of end-of-life decisions than those with fewer terminal patients. Also, longitudinal studies are needed to show whether the correlations found between age and intentions are cohort effects, and if so, to what extent. As 'end-of-life decisions' are a sensitive subject and also because some types of end-of-life decision involve liability to prosecution, it is very important to ensure anonymity for studies in this field.

Acknowledgements

We are indebted to the doctors in the participating regions who provided the data; to all assistants on the project; to national and regional medical associations and other authoritative bodies that supported the study; and to the national advisory board for its support.

We thank Noémi de Stoutz, MD, Forch, and Dominique Anwar, MD, Chavannes-près-Remens for translating the original questionnaire from English into French. We also thank the Italian EURELD team for putting the Italian version of the questionnaire at our disposal. Furthermore, we are indebted to Hazel Warner and Meryl Clarke, MB ChB, BSc, for linguistic improvement of the manuscript.

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