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Attitudes toward active euthanasia among medical students at two German universities

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Abstract
Aim There has been an ongoing debate about a legalisation of active euthanasia (AE) in Germany. Palliative care education in German medical schools seeks to foster and cultivate a negative attitude toward AE, but little is known about its effectiveness in this respect. The aim of this study was to assess attitudes toward AE among students with and without palliative medicine tuition (PMT).
Methods The link to an anonymised online questionnaire was sent out to 1,092 third, fifth and sixth year medical students (YMS) in August–November 2006 at two German universities: university one (U1) with compulsory and additional optional PMT and university two (U2) without any PMT. Thirteen questions addressed active, passive or indirect euthanasia and physician-assisted suicide (statistic: mean ± SD (range), Wilcoxon, Whitney *U* Test, significance $p<0.05$).
Results Response rate was 17.5%; 59.2% of the questionnaires were returned from U1 and 40.8% from U2; 28.3% of the students were male. Whereas 50% of third YMS at U1 and 36.7% at U2 favoured a legalisation of AE, this was true for 22.4% sixth YMS at U1 and 35.7% at U2. At U1, the number of students who would want to make use of AE for themselves decreased considerably (70%-44.9%) but less at U2; main reasons were 'unbearable suffering' and 'circumstances that lack dignity'. Of all students, 21.1% at U1 and 37.2% at U2 could imagine to perform AE in patients, even though 72.6% at U1 and 78.2% at U2 think its legalisation would promote misuse.
Conclusions The high proportion of pro-AE attitudes gives reason to reconsider both 'standard' and palliative medicine tuition for medical students.

Keywords Undergraduate education · Palliative medicine · Euthanasia · Medical school

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Introduction

The legalisation of active euthanasia in the Netherlands and in Belgium (2002), as well as the media coverage around the death of Diane Pretty (2002) and Terri Schiavo (2005), fuelled the debate on the legal regulations of active euthanasia in Germany. Surveys among the public revealed that a high percentage of the population is in favour of a legalisation [5]. In the Netherlands, van der Wal et al. showed that 'unbearable suffering', 'futile situations' and 'fear of loss of autonomy or dignity' were the main reasons for request of active euthanasia [19]. In Germany, a survey among physician members of the German Association of Palliative Medicine showed that a positive attitude toward active euthanasia is highly dependent on professional experience, knowledge in ethics and palliative medicine [11].

Studies in undergraduate medical students have shown a relatively high rate of acceptance of active euthanasia among medical students [8, 13].

The overall aim of undergraduate education in palliative medicine is to cultivate attitudes and competencies in the

care of patients with advanced disease. In 2003, palliative medicine became part of the core curriculum for medical students in Germany, but specialised courses are not yet mandatory in all medical schools. However, medical schools can adapt their own curriculum individually and integrate compulsory courses in palliative medicine. Encouragingly, medical-student surveys reveal that competencies in the areas of attitude, skills and knowledge can be acquired and fostered by well-developed undergraduate palliative medicine programs, with students requesting increased instruction in palliative and end-of-life care. Less positive is the knowledge that students display deficiencies in competency at the time of completing their undergraduate education [3, 7, 13, 21]. Palliative medicine education for medical students in Germany has been an increasing focus of attention in recent years. The aims of this study were to assess attitudes toward active euthanasia among students with compulsory and without palliative medicine education.

Methods

From August to November 2006, the link to an anonymised online questionnaire was sent via e-mail to a total number of 1,092 third, fifth and sixth year medical students at two German universities: university one (U1; Bonn), with mandatory and optional palliative medicine education and university two (U2; Düsseldorf), without mandatory or optional palliative medicine education. At U1, mandatory tuition in palliative medicine consists of 4 h for third, fifth and sixth year medical students, held in interactive training sessions (small groups of 15–25 students; method: case vignettes). Optional for sixth year students is a lecture course (8 h) and an 8-h seminar, which were visited by about 80% of the respective study population.

The questionnaire was developed at our center with use of a focus group with expertise in palliative medicine. Items include new ones and some that were used in the framework of an earlier study. Furthermore, a pre-test was conducted in fourth year students at U1 (n=26) under the same conditions as the survey and revealed no need of amendment of the questionnaire.

The Institute of Medical Biometrics and Informatics at U1 designed the website with the questionnaire and sent out the link to the questionnaire via e-mail to all students in the respective student years at U1 and U2 and provided them with user names and password. Only questionnaires that were completed online could be submitted. Included in this survey were all questionnaires that were submitted within the deadline of 14 days. A reminder was sent out via e-mail after 7 days.

The 13 questions covered attitudes towards active euthanasia and knowledge about definitions and judicial matters concerning active, passive and indirect euthanasia. All questionnaires were analysed with Statistical Package for the Social Sciences for Windows 13.0 (statistic: mean ± SD (range), Wilcoxon, Whitney U Test, significance $p<0.05$).

Results

Response rate was 17.5% (191 returned questionnaires of 1,092, 442 of which where sent to U1 and 650 to U2). Of these 191 questionnaires, 113 (59.2%) were returned from U1 and 78 (40.8%) from U2. Of the responding students, 54 (28.3%) were male. Mean age was 25.6±2.5 (22–34) years. See demographics of respondents in Table 1.

Thirteen questions (Q) covered knowledge about active, passive and indirect euthanasia and attitudes toward active euthanasia. In Q 1, students were asked: which of the following terms (active, passive and indirect euthanasia, and physician-assisted suicide, none) do you know? In a second step (Q 2), students were asked to allocate given definitions to the respective terms, or they could mark, "I don't know any of the definitions". An overview of definitions is presented in Table 2.

In U1, 80.3% and in U2, 86.7% of all students allocated all definitions correctly. In all student years and at both universities, self-judgement of knowledge of the terms about matched the results of allocation of the respective

Table 1 Demographics of respondents (n=191) from U1 and U2

		Age (mean ± SD (range))	Male/female	Religion n (%)			
		(Year)	n (%)	Catholic	Protestant	Islam	None
U1 (n=113)	Third-year medical students	23.8±2.0 (22–30)	4 (20)/16 (80)	60 (53.1)	40 (35.4)	0	13 (11.5)
	Fifth-year medical students	25.9±2.8 (23–34)	12 (27.3)/32 (72.7)				
	Sixth-year medical students	25.8±2.0 (23–31)	15 (30.6)/34 (69.4)				
U2 (n=78)	Third-year medical students	24.3±3.1 (21–29)	11 (36.7)/19 (63.3)	33 (42.3)	34 (43.6)	2 (2.6)	9 (11.5)
	Fifth-year medical students	25.0±2.5 (22–31)	8 (23.5)/26 (76.5)				
	Sixth-year medical students	25.4±1.8 (22–28)	4 (28.6)/10 (71.4)				

Table 2 Overview of definitions

Terms	Definition
Active euthanasia	A doctor intentionally killing a person by the administration of drugs, at that person's voluntary and competent request.[a]
Passive euthanasia[b]	A doctor terminating or withdrawing life-sustaining treatment in dying patients and in patients in futile situations, according to the patient's documented or probable wish.
Indirect euthanasia[b]	A doctor conducting indicated measures according to best practice for the alleviation of suffering and control of severest symptoms that may unintentionally—as a side effect—shorten a patient's life.
Physician-assisted suicide (PAS)	A doctor intentionally helping a person to commit suicide by providing drugs for self-administration, at that person's voluntary and competent request.[a]

[a] Definitons from [10]
[b] The terms passive and indirect euthanasia are frequently used in clinical practice and are regulated by the law in Germany. Therefore, the knowledge of the definition of these terms is still important in Germany.

definitions. Only the term indirect euthanasia seemed to have caused some problems; here, self-judgement was much lower (about 50% in third YMS at both universities) than the percentage of correct allocation of definitions (about 90% in third YMS at both universities).

Q 3 covered legal regulations in Germany (Please name: which of these measures are a criminal offence?). Correct answers were: no criminal offence for passive and indirect euthanasia, physician-assisted suicide also no criminal offence (under certain circumstances) but not according to code of conduct. Whereas correct answers for passive (in all U1 students, 72.6%; U2, 75.6%) and indirect (U1 84.1%; U2 88.5%) euthanasia were given by a majority of students of both universities, the legal situation for physician-assisted suicide was only known to about a fifth of all students (U1 17.7%; U2 19.2%). Figure 1 shows the distribution of correct answers.

Answers to Q 4 (Should active euthanasia be legalised in Germany?) are presented in Fig. 2. In U1, there was a significant decrease in the positive attitude during the course of studies (p=0.035) whereas in U2, the decrease was marginal (p=0.784).

Answers to Q 5 (Would you—under certain circumstances—like to make use of active euthanasia for yourself in the future?), showed a significant decrease in positive attitudes in U1 students over the years from 70.0% in year 3 to 44.9% in year 6 (p=0.026) but not in U2 (66.7.0% in year 3 to 50.0% in year 6 (p=0.730)); see Fig. 3. Answers to Q 6 (If yes, which could be a likely reason for such a wish?) could be chosen from seven options (multiple answers possible) plus free text field. The two main probable reasons for such a request were unbearable suffering and circumstances that lack dignity in all students at both universities. Reasons and results are presented in detail in Fig. 4; the free text field was not used.

The students were asked whether or not they would also perform active euthanasia on a patient's competent request if it were to be legalised in Germany (Q 7). Significantly less students at U1 (U1 21.2%/U2 37.2%; p=0.005) could imagine to do so. Most students at both universities, however, given a choice between "yes", "no" and "not sure", answered with "not sure" (U1 39.8%/U2 41.0%; Fig. 5). In Q 8 (If yes, which could be a likely reason for

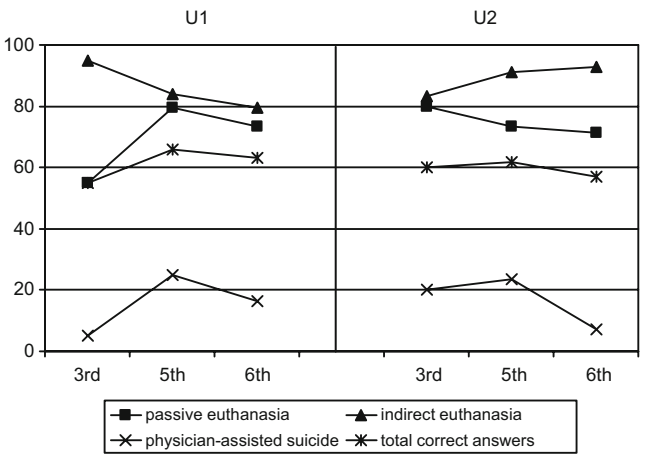

Fig. 1 Percentage of students at U1 and U2 that allocated "no criminal offence" correctly to passive and indirect euthanasia and to physician-assisted suicide

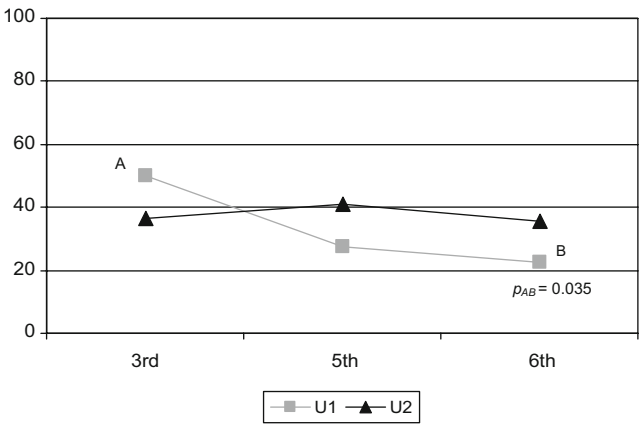

Fig. 2 Percentage of students in favour of a legalisation of active euthanasia

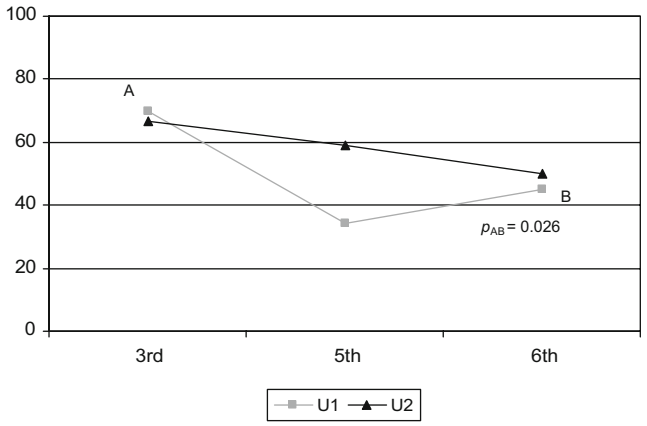

Fig. 3 Would you—under certain circumstances—like to make use of active euthanasia for yourself in the future? (%)

acting according to the patient's wish), there were given six probable reasons and a free entry field, multiple answers possible. The most often named reason was "to ensure a dignified death", for which 39.8% of all U1 students and 52.6% of all U2 students opted; the second most was "respect for the patient's wish" (U1 37.2%/U2 48.7%), third came "patient says to have no quality of life" (U1 15%; U2 29.5%).

Q 9 (Are you afraid that a legalisation of active euthanasia in Germany would lead to misuse?) was answered with 'yes' by a great majority at U1 and U2 (72.6%/78.2%). Q 10 addressed the influence of palliative medicine on positive attitudes toward active euthanasia (Do you believe that patients no longer have a wish for active euthanasia when appropriate control of pain and other symptoms are achieved, as it is the aim of palliative care?). At U1, 45.1% of all students believed that adequate pain and other symptom control as in palliative medicine can reduce patients' wishes for active euthanasia, as compared to 29.5% of all U2 students. Seen as development over the study years, the percentages were increasing from 20.0% in third year over 43.2% in fifth year to 57.1% in sixth year U1 students (p=0.002) but not significantly in the groups of U2 students (26.7/29.4/35.7%; p=0.121;Fig. 6).

Q 11 (Are you afraid of certain tasks in the care for incurable patients?) and Q 12 (If yes, which tasks do you fear most?) explored fear of contact with patients. The first question with the options 'yes', 'no', 'not sure' revealed that the majority of students in all surveyed years at both U1 and U2 feared certain tasks ('yes' in all U1 students 69.9%; U2 67.9%).

Answers to Q12 could be chosen from seven options (two answers possible) plus free text field, which was hardly used. Students were particularly afraid of having to inform patients on their diagnosis (U1 44.1%; U2 46.2%), of contact with patients and families (U1 35.4%; U2 39.7%), to be asked questions they cannot answer (U1 25.7%; U2 32.1%) and the experience of helplessness when it can no longer be expected to cure the patient (U1 25.7%; U2 30.8%).

In Q 13, students were asked: Do you feel appropriately prepared for the care of dying patients? A minority of 12.2% of sixth year students at U1 and 7.1% at U2 answered 'yes'.

Discussion

The terms active, indirect and passive euthanasia play a certain role in Germany, e.g. in the German Criminal Code

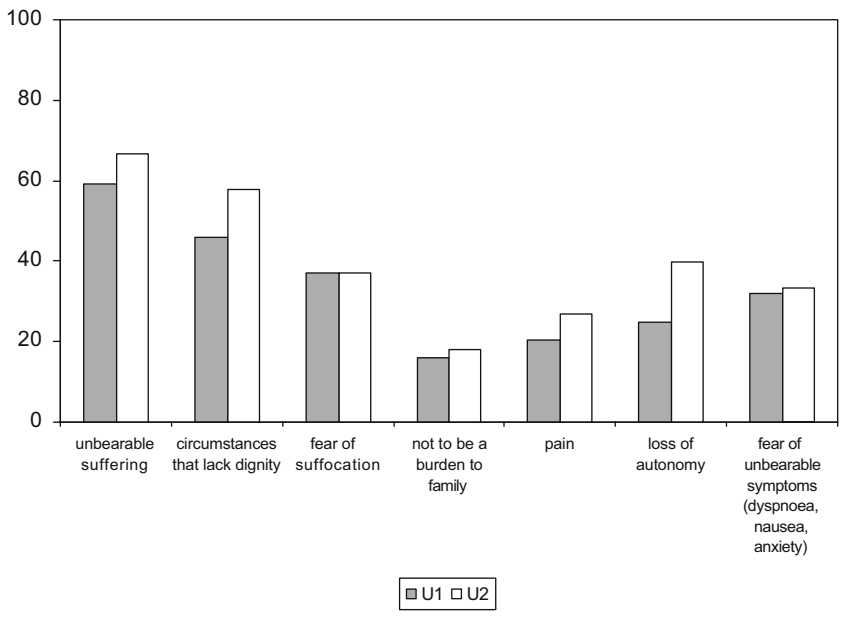

Fig. 4 Reasons why students would like to make use of active euthanasia for themselves (%); U1 (n=113;) and U2 (n=78)

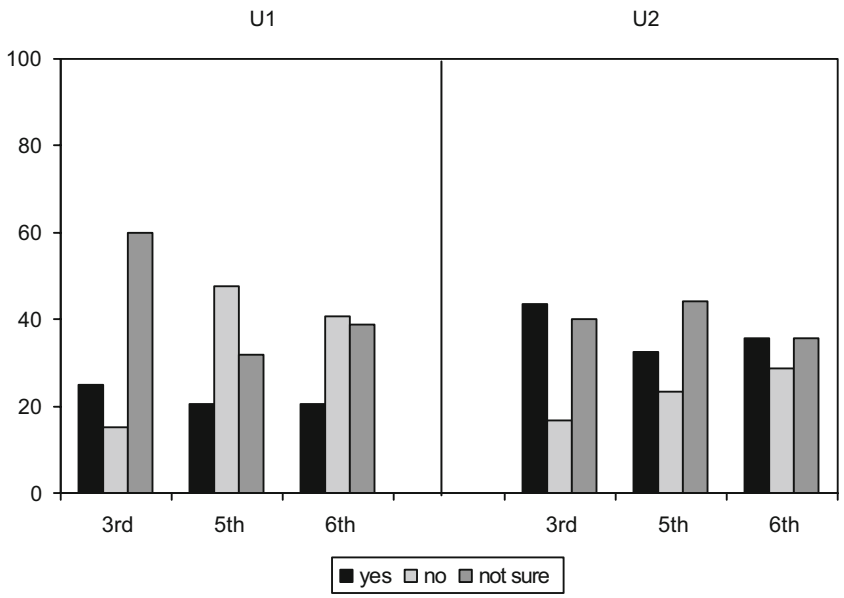

Fig. 5 Percentage of students at U1 (n=113) and U2 (n=78) that would perform active euthanasia in patients at their competent request if this were permitted by the law in Germany

and in the code of conduct for physicians, as expressed in the Guidelines for Medical Aid in Dying from 1998 [1], less in those from 2004 [2], both approved by the German Medical Association. The authors favour a use of terms as suggested by Materstvedt [10], where it is explained that 'euthanasia' can neither be 'passive' nor 'indirect' and is defined as 'a doctor intentionally killing a person by the administration of drugs, at that person's voluntary and competent request.'

However, the terms active, passive and indirect euthanasia are still in use in Germany. Therefore, we believe that medical students should be able to distinguish between them in order to follow the German debate. Well aware of the fact that approaches to the terms 'passive' and 'indirect' euthanasia are ambiguous, we used the definitions that were covered by the German Medical Association.

Whereas the allocation of terms to definitions was unproblematic for the great majority of all students at both universities, most students wrongly thought physician-assisted suicide a criminal offence in Germany. Another study in Germany, undertaken by Schildmann et al. [16] that also covered legal knowledge of medical students, showed similar results.

The answers to the questions covering attitudes towards active euthanasia revealed high approval rates of a (hypothetic) legalisation of active euthanasia in Germany among all responding students at both universities (Bonn and Düsseldorf), even though there was a significant decrease in positive attitude in those at the university with compulsory tuition in palliative medicine (Bonn), as compared to those without. Another study in Germany by Ostgathe et al. [13] undertaken a few years earlier in Bonn when there was not yet a mandatory course in palliative medicine, even though some issues of palliative medicine were integrated in other subjects, showed a significant decrease in the approval of active euthanasia in first to fifth year medical students (p= 0.012). Nevertheless, the approval rate at their end of training still was 48% and, therefore, was in between the approval rate of practicing physicians in Germany (26 to 42%) and the general population (42% to 73%; [6, 11, 13]). One of the aims of the study of Ostgathe et al. was to investigate the effect of the 'classical' medical curriculum previous to the newly implemented compulsory course. In our study, undertaken after palliative medicine became a compulsory part of the curriculum, the percentage of sixth year students in Bonn that showed positive attitudes toward active euthanasia had gone down to about half of the percentage previously found by Ostgathe et al. To what extent this decrease maybe due to the tuition in palliative medicine, however, cannot be clearly judged.

Nevertheless, the overall consent to active euthanasia in the surveyed medical students in our study is relatively

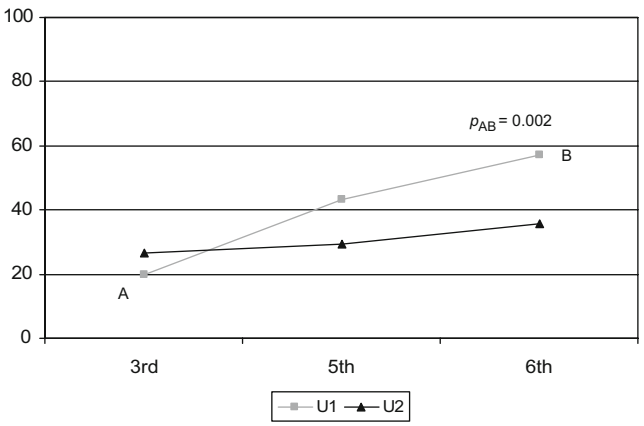

Fig. 6 Percentage of students at U1 (n=113) and U2 (n=78) that believe palliative medicine can reduce patients' wishes for active euthanasia

high, and, as reported by Karlsson et al. [8], where one third of the respondents of a study among medical students in Sweden expressed a positive opinion regarding legalisation of active euthanasia, young people have been shown to be more positive to active euthanasia than the elderly [4, 14], but they might change their views when assimilating to their new profession. This is supported by a survey among physician members of the German Association of Palliative Medicine that showed that a positive attitude toward active euthanasia is highly dependent on professional experience, knowledge in ethics and palliative medicine [11]. Another study, by Marini et al. [9] in 2006, used case reports to explore end-of-life attitudes. Physicians (oncologists and physicians specialised in palliative medicine) and medical students were surveyed. The results showed that a higher percentage of oncologists than specialists in palliative medicine approved of active euthanasia and physician-assisted suicide; however, most positive attitudes towards these measures were shown among medical students. Marini et al. also concluded that the familiarity with the care of terminally ill and dying patients is an important underlying factor explaining this variance.

We have not come across other studies that assessed the preparedness of medical students to perform active euthanasia in future patients and, therefore, cannot compare the results of the respective question in our survey to others. In Bonn, the willingness to do so remained stable around one fifth in all surveyed student years; in Düsseldorf, more than one third of sixth year students could imagine to perform active euthanasia. About a quarter of sixth year students in Bonn had expressed to approve of a legalisation of active euthanasia, which is roughly the same percentage as of those who could imagine performing active euthanasia. In the study of Karlsson et al. [8] where students were asked to name which persons should perform active euthanasia (multiple answers possible), more than 70% percent opted for ‘doctor’. However, it is not reported whether this answer also covered their own preparedness for such a task in the future.

Karlsson et al. [8] also found that one fifth of the students in their survey ruled out that they might be asking for active euthanasia for themselves in the future, whereas 45% considered they might do this and 36% were undetermined. In our study, a high percentage of students could imagine that they would make use of active euthanasia for themselves if they were to be exposed to hopeless situations, unbearable suffering, circumstances that lack respect for their dignity and the fear of suffocation. The latter situation is probably due to the extensive and populist coverage of end-of-life scenarios of ALS and other patients in the media (e.g. Diane Pretty, Terri Schiavo) in order to promote the legalisation of active euthanasia in Germany in the past few years, even though this is no more than a guess. In the study of Karlsson et al. [8], the students stressed the importance of autonomy as an argument supporting active euthanasia; but the evaluation of the students’ arguments showed that there was an inconsistency with regard to this argument because they emphasised the importance of basing the decisions to undergo active euthanasia on the patient’s own wish and, at the same time, advocated for active euthanasia for the cognitively impaired. Even if positive attitudes towards active euthanasia probably will decrease with the extent of practical experience in palliative medicine and end-of-life care [11], the proportion of students at both universities who stated that they would perform active euthanasia under certain circumstances, even though decreasing with student year and extent of tuition in end-of-life matters, still gives reason to concern.

The majority of sixth year students at both universities in our study did not feel prepared for dealing with end-of-life matters and many feared certain tasks. The most feared task in all sixth year students was information on diagnosis; this was more prevalent in Düsseldorf, followed by contact with patients and their families, to be asked questions they cannot answer and the experience of helplessness when it can no longer be expected to cure the patient. These results are in line with other studies in Germany, for example Schildmann et al. [17] and Weber et al. [20]. In the study of Schildmann et al., medical students rated (on a scale of 1–7) their communication skills to be 3 and their ability of breaking bad news as 4. Weber et al. found that more than 80% of their surveyed student population felt insufficiently prepared for dealing with ethical questions at the end of life. A variety of studies in the United States also showed that students did not feel prepared for crucial tasks of end-of-life care [7, 12] and showed that current end-of-life curricula education still had shortfalls in outcome of knowledge and attitude. Interactive methods, such as role plays and the use of actors as patients for role plays, may help to bring forward knowledge and confidence, as described in Torke et al. in 2004 [18] and Saab and Usta in 2006 [15].

We are aware that the relatively low response rate of 17.5% is one of the limitations of the study and may raise the possibility of selection bias in responses. Furthermore, the distribution of a website link and submission of questionnaires within the deadline of a fortnight allowed for use of textbooks, communication with others, etc. Nevertheless, the results confirmed findings that undergraduate tuition in palliative medicine has an impact on attitudes toward active euthanasia, even though positive attitudes in German medical students are relatively high. Further research is urgently needed to explore the nature of these attitudes and how these can be influenced effectively by teaching methods.

Conclusions

As good knowledge in principles of medical ethics and information about alternative approaches correlate with low approval of active euthanasia, compulsory training in palliative medicine can be expected to have a sustainable impact on end-of-life attitudes of future physician generations. Nevertheless, medical students with compulsory tuition in palliative medicine still show a high acceptance of not only supporting a legalisation of active euthanasia but also making use of active euthanasia for themselves and performing such a task in others, if the legal regulations were other than currently. Even though their being afraid of dealing with incurable patients may be seen as a possible reason for the high rate of approval of active euthanasia, the nature of this attitude is not clear. Research in factors that influence this attitude is urgently needed.

At universities with compulsory tuition in palliative medicine, the education in this field should be extended and at those without, palliative medicine should—at least—become part of the curriculum. Methods that allow both gaining expertise and an attitude towards end-of-life issues, which is consistent with the approach of palliative medicine that affirms life and seeks not to hasten death must be used more effectively.

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