

MEDICAL STUDENTS' OPINION ON EUTHANASIA AND PHYSICIAN-ASSISTED SUICIDE. A THEORETICAL APPROACH

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ABSTRACT. Euthanasia and physician-assisted suicide (PAS) are controversial topics throughout the entire world. The evolution of medicine has allowed for new medical treatments to be available in the case of incurable diseases, thus prolonging the lifespan of the individual. This, in turn, has brought to light some challenging legal, ethical, and social issues related to end of life medical decisions. The aim of this study is to examine medical students' knowledge about the legalization of euthanasia and PAS, their attitudes toward them (in various countries), and their reasons for and against these acts.

Keywords: *euthanasia, physician-assisted suicide, ethics, medical students.*

REZUMAT. *Opinia studenților mediciști cu privire la eutanasiе și sinuciderea asistată medical. O abordare teoretică.* Eutanasiа și sinuciderea asistată medical sunt subiecte controversate în întreaga lume. Evoluția medicinei a permis existența unor noi tratamente medicale în cazul bolilor incurabile, prelungind astfel durata de viață a individului. La rândul său, acest fapt a scos la iveală câteva probleme legale, etice și sociale legate de deciziile medicale de la sfârșitul vieții. Scopul acestui studiu este de a examina cunoștințele studenților mediciști despre legalizarea eutanasiеi și a sinuciderii asistate medical, atitudinile lor față de acestea (în diferite țări) și motivele pentru și împotriva acestor acte.

Cuvinte cheie: *eutanasiе, sinucidere asistată medical, etică, studenți mediciști.*

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Euthanasia and physician-assisted suicide in the medical profession

The fact that medicine has continually evolved, and new medical treatments are available in the case of incurable diseases has prompted challenging legal, ethical, and social issues. Improving quality of life and the prevention and relief of suffering are factors that should be taken into consideration in the process of medical decision at the end of life (Sepulveda et al, 2002).

There is a growing opinion that prolonging one's life is not always an appropriate objective and it has been debated whether euthanasia and assisted suicide are viable options and should be legalized. The controversy involving these actions take into consideration a plethora of arguments for and against them and include ethical, legal, religious, social and psychological aspects (Rodríguez-Calvo, 2019).

Materstvedt et al. (2003) define euthanasia as "a doctor intentionally killing a person by the administration of drugs, at that person's voluntary and competent request" and physician-assisted suicide as "a doctor intentionally helping a person to commit suicide by providing drugs for self-administration, at that person's voluntary and competent request". According to the authors, expressions such as 'passive' or 'voluntary' euthanasia should be discarded as the word implies action and volition.

Worldwide, there are a few countries or states where euthanasia is legal or decriminalized: Belgium, Finland, New Zealand, Netherlands, Norway, Sweden, Switzerland, Thailand and the United States (Kumar et al, 2017). Even in these countries the debate continues about the boundaries of these practices and there are still questions concerning the responsibilities of medical professionals (Zenz et al, 2015). For example, in Canada, even though nurses might be against euthanasia, health region policies may demand them to continue to be involved in euthanasia in non-related care (Pesut et al, 2019). Piili et al. (2018) argue that palliative care education is of utmost importance given the fact that physicians with special education in this area make less aggressive decisions in end-of-life care. Pieters et al. (2019) revealed that, in the Netherlands, palliative care is very low represented in undergraduate medical curricula. Medical education in this country has a tendency not to pay too much attention to competencies required to decide whether to treat.

Zenz et al. (2015) found that most medical professionals (physicians and nurses) in palliative care were hesitant to perform euthanasia or physician-assisted suicide (PAS). If asked, a small percent (5.3 %) of physicians and nurses would be willing to perform euthanasia on a patient with a terminal illness, with higher reluctance in the case of a patient who did not have a terminal illness. The first choice for most participants was treating the patient's symptoms and, also, they would consult with a colleague before any decision.

In the case of intensive care unit physicians and nurses, Kranidiotis et al. (2015) showed that more than half of them (59% and 64% respectively) are in favor of legalizing active euthanasia. However, smaller percentages (28% and 26% respectively) agree with it from an ethical point of view. Naseh et al. (2015) reported, in Iran, that over half of nurses (57.4%) had a negative attitude towards euthanasia, 3.2% had a neutral attitude and 39.5% of them had a positive attitude. In Canada, Lavoie et al. (2014) found that nurses in palliative care were inclined toward practicing euthanasia if it were legal, with more than half of them (67.3%) having a positive intention and 28.8% having a negative one.

Among the factors that influence the physician's decision regarding the practice of euthanasia in palliative care, Lavoie et al. (2015) identified perceived behavioral control, attitude (cognitive attitude contributes to physician's decision to perform euthanasia, but not affective attitude), moral norm, and patient's autonomy to be of importance for them.

Given the fact that medical professionals are faced with important ethical challenges, it is important to track and understand their views starting from medical school. Medical student are future doctors and their attitudes during their studies may shape their views as practicing professionals. End-of-life issues are an important part of the medical profession and students should be given specialized education concerning these matters.

Palliative care

When discussing topics such as euthanasia and PAS, palliative care (PC) should not be overlooked in order to better understand the bioethical landscape. Berger et al. (2018) argue that an informed opinion concerning euthanasia and PAS can be attained only after understanding the benefits and limitations of medical interventions, including PC.

The World Health Organization (WHO, 2018) defines palliative care as “an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual”.

Palliative care (WHO, 2018):

- provides relief from pain and other distressing symptoms;
- affirms life and regards dying as a normal process;
- intends neither to hasten or postpone death;

- integrates the psychological and spiritual aspects of patient care;
- offers a support system to help patients live as actively as possible until death;
- offers a support system to help the family cope during the patients' illness and in their own bereavement;
- uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated;
- will enhance quality of life, and may also positively influence the course of illness;
- is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications.

Given the complex nature of the discussion involving euthanasia, PAS and PC, Anneser et al. (2016) have the following suggestions:

- to introduce or integrate current educational activities in order to help students improve their knowledge of legal aspects (through cooperation between teachers of medical law, ethics and palliative medicine);
- to enhance students' communication skills by using video-based practice conversations with standardized patients as a way of helping them learn how to communicate in an adequate manner with patients and families about these topics;
- to associate ethical consideration and real-life experiences in the direction of helping students cultivate their own ethically reflected attitudes.

There is a need for medical students to improve their education concerning symptom control in palliative and supportive care of severe diseases (Karlsson et al, 2007). It is necessary to include PC in the medical curriculum given the fact that there is a high possibility for young doctors to encounter palliative care patients and students do not feel prepared to offer such care (Pieters et al, 2019).

Euthanasia and physician-assisted suicide: medical students' opinion

In South Africa, the study of Jacobs and Hendricks (2018) revealed that more than half of the medical student in their sample (52.7%) believed that euthanasia/PAS should be legalized. According to 57% of the participants, the patient should be the one to make the final decision concerning the end of their life. Also, almost half of the students (47.7%) believed that patients should be

helped by doctors to fulfil their requests. Although the general attitude towards euthanasia is positive, 63.5% of students would try to convince a patient to opt for a palliative treatment method instead of a life-ending intervention. Almost all students (90.6%), in the case of a patient with no known treatable medical illness, would not assist him/her with life-ending interventions. A little half of the students (54.2%) would not help a psychiatric patient to end their life. Half of the participants (50.2%) stated that they provide support for a loved one who decided to end their life because of some intractable disease. When deciding who receives euthanasia/PAS, most of the students (80.1%) would prefer a dedicated ethics committee.

Another study from South Africa revealed that, although 43% of medical students believed assisted dying should be legal (with clinical students more in favor - 54.5% - compared to preclinical students - 31.4%), only 36.2% would perform a procedure linked to assisted dying, while 45.3% would not be willing to perform such a procedure and 18.5% had a neutral attitude (Marais et al, 2017).

In Mexico, the study of Guttierrez & Guttierrez (2018) revealed that 44.4% of medical students favored active euthanasia, 52.1% of passive euthanasia, and 44.8% would ask their physician to help them die if they suffered from an incurable or painful disease (positive personal posture). Compared to women, men are more in favor of both active and passive euthanasia. Students who stated no religious beliefs were more in favor of active euthanasia, passive euthanasia, and personal posture compared with non-Catholics who had more negative views on all three aspects. The authors also found an important difference between participants who considered religion as strongly important and non-believers: the first group had a predominantly negative attitude towards the topic and the second had mainly a positive one.

In Brazil, living wills overcome any other non-medical opinion and doctors are under the obligation to respect the wishes of terminally ill patients, except for those who conflict with the Code of Medical Ethics. Silva et al. (2015) found that a low percentage of medical students (8%) had a clear understanding of the term "living will". However, when the term was explained to them, a vast majority of students (92%) stated that they would respect it. More recently, Kulicz et al. (2018) found a higher prevalence (23.5%) of students who declared they knew what living will was and chose the correct answer for it. However, the percentage of students who would respect the patient's living will is lower than the previous study (80.1%).

In the UK, Pomfret et al. (2018) conducted a study to investigate end-of-life decisions among medical students and the role of religion in this process. The results revealed that most of them did not agree with euthanasia and

physician-assisted suicide. Those who believed in god presented a higher chance of disagreeing with actions which expedite death, especially students from a Muslim background. The students were given six different scenarios and were asked to rate the level of their agreement (from strongly disagree to strongly agree) and to consider that the actions are legal. We present the results from these scenarios:

- “Mrs X is medically well. She is deemed competent. She wishes for the ventilator to be withdrawn. The consulting physician switches off the ventilator”. 9% of students strongly disagreed, 20% disagreed, 13% neither agreed nor disagreed, 44% agreed, and 14% strongly agreed.
- “Mrs X is medically well. She is deemed competent. She wishes to die. She asks her consulting physician to help her die. The physician agrees to assist death by personally, slowly, increasing her morphine dose”. 21% of students strongly disagreed, 36% disagreed, 15% neither agreed nor disagreed, 23% agreed, and 5% strongly agreed.
- “Mrs X develops a chest infection. She falls into septic shock and eventually into a coma. The doctors on ICU agree that she is brain dead and consult the family to switch off the ventilator. The consulting physician switches off the ventilator”. 3% of students strongly disagreed, 6% disagreed, 11% neither agreed nor disagreed, 51% agreed, and 29% strongly agreed.
- “Mrs X is medically well. She is deemed competent. She wishes to die. She asks her consulting physician to help her die. The physician agrees to assist death personally administering a lethal injection of potassium chloride”. 36% of students strongly disagreed, 35% disagreed, 13% neither agreed nor disagreed, 13% agreed, and 3% strongly agreed.
- “Mrs X is medically well. She has severe cognitive impairment as a result of her disease. She wishes for the ventilator to be withdrawn. The consulting physician switches off the ventilator”. 16% of students strongly disagreed, 38% disagreed, 23% neither agreed nor disagreed, 20% agreed, and 3% strongly agreed.
- “Do you think you, as a doctor, could administer a lethal injection (eg potassium chloride) to a competent patient, like Mrs X, who wishes to die? (Please again assume that such an action is legal)”. 24% agreed and 76% disagreed.

In Germany, Anneser et al. (2016) were interested in medical students' attitude and knowledge about physician-assisted suicide, euthanasia and palliative sedation and they surveyed 4th year medical students using fictitious case vignette (describing a 57-year-old patient with nasopharyngeal carcinoma) with

two versions: (1) subjectively unbearable physical suffering and (2) emotional suffering. The results showed that most students assessed palliative sedation as legal (81.2%) and euthanasia as illegal (93.7%), according to Germany's legal norms at that point in time. However, few students were aware that physician-assisted suicide did not constitute a criminal offense at that time. Palliative sedation along with simultaneously withholding artificial nutrition and hydration were considered ethically acceptable by most students (83.3%), a little over half of the students (51.2%) viewed physician-assisted suicide as an ethically legitimate action, and 19.2% thought of euthanasia as an ethically permissible act. Palliative sedation was considered legal more frequently in the first version of the scenario.

In Canada, Bator et al. (2017) found that the majority of undergraduate students (88%) in their study supported the Supreme Court's decision concerning the ban on medical assistance in dying (MAID), more than half of them (61%) would provide the means for a patient to end their life, and 38% would themselves administer a lethal medication. Educational training solicited by participants in order to prepare them for MAID included, in preferred order, medico-legal (91%), communication skills (80%), technical skills (75%), and religious (49%). The authors did not analyze students' freeform comments, but some of them indicated they would like more clinical exposure to end-of-life care and MAID. More recently, Falconer et al. (2019) found that 71% of medical students would provide MAID under a legal framework that allows it. concerning religion, Non-religious, atheist, or agnostic medical students reported the highest willingness to participate in MAID (89%), followed by Jewish (70%), Catholic (70%), Muslim (46%), and Other Christian religion other than Catholic (40%). Concerning the frequency of religious attendance, MAID is more likely to be reported among medical students who never attended religious services (89%) than among those who attend a few times per year or less (81%), about once per month (40%), or about once per week (14%).

In Sweden, Karlsson et al. (2007) found that a little over half (52%) of medical students had a negative attitude towards legalizing euthanasia, 34% had a positive one and a lower percentage (13%) was undecided. When asking questions such as 'Is there a situation when you would ask for euthanasia for yourself?', 18% answered no, almost half of them would take this scenario into consideration and 36% were undecided.

In Poland, Leppert et al. (2013) found that the legalization of euthanasia was supported by 29.59 % respondents, opposed by 47.11 %, and 23.30 % were undecided. Following palliative medicine courses, a vast majority of students (94.56 %) maintained their attitudes toward euthanasia. Most students (81.80 %) were worried that the legalization of euthanasia or PAS could lead to abuse.

A lower percentage (11.73 %) considered that the legalization would not lead to abuse, while 6.46 % declared that they did not know whether it would lead to abuse or not.

In Austria, a study spanning a period of 9 years tracked changes in medical students' attitudes toward euthanasia and the results showed an increase in rates of acceptance: from 16.3% (2001) to 29.1% (2003/04) to 49.5% (2008/09) (Stronegger et al, 2011).

Medical students' reasons for supporting and opposing euthanasia and PAS

The opinions expressed by medical students in favor or against euthanasia and PAS are not new and are like those presented in studies focusing on other professional categories. The study of Jacobs and Hendrick (2018) identified several arguments in favor and against euthanasia and PAS: students' arguments for *supporting* them are patient autonomy and relief of suffering; the arguments for *opposing* them are doctor's oath to preserve life, it is morally wrong – against personal/religious world view and constitutes a 'slippery slope' towards active involuntary euthanasia.

Karlsson et al. (2007) found the same arguments, but added a few more for opposing euthanasia, students mentioning the fear of possible negative effects on society, the strain it could cause physicians and doubts about the true wishes of the patients. Clemens et al. (2008) added circumstances that lack dignity and Leppert et al. (2013) added respect for patient's will and compassion to the list of reasons to proceed with euthanasia or PAS.

Differences between medical and non-medical students

In Spain, Rodríguez-Calvo et al. (2019) found, among medicine, nursing and law students, that their attitude was positive towards physician-assisted suicide (54%) and euthanasia (75%). Their attitude concerning their legalization was also positive. Medical students' attitude towards euthanasia and physician-assisted suicide were positive and did not differ from that of non-medical students. When asked about their attitude towards PAS, 31% of medical students strongly agreed, 32% agreed, 20% were undecided, 7% disagreed and 10% strongly disagreed. The results of nursing students are the following: 23% strongly agreed, 24% agreed, 38% were undecided, 11% disagreed and 4% strongly disagreed. Law students' percentages are as follows: 31% strongly agreed, 23%

agreed, 35% were undecided, 4% disagreed and 7% strongly disagreed. Concerning their attitude towards euthanasia, 49% of medical students strongly agreed, 32% agreed, 12% were undecided, 4% disagreed and 3% strongly disagreed. The results of nursing students are the following: 36% strongly agreed, 30% agreed, 23% were undecided, 7% disagreed and 4% strongly disagreed. Law students' percentages are as follows: 40% strongly agreed, 39% agreed, 13% were undecided, 4% disagreed and 4% strongly disagreed. However, the result also indicate that medical students place a higher value on patients' autonomy.

In Pakistan, Kumar et al. (2017) found that medical students (57.6%), compared to non-medical students (42.9%) favored continuing maximum medical treatment including CPR. Most non-medical students (83%) and less than half of medical students (46%) believed euthanasia is an acceptable practice. Also, the authors found significant difference between male and female students: the former seem to be more in favor of euthanasia while the latter are more in favor of providing maximum medical treatment.

Gruber et al. (2008) found several differences between medical and non-medical students and between senior and junior medical students. More specifically, more non-medical students believed that cardiopulmonary resuscitation must always be provided than medical students. Also, more first year medical students felt cardiopulmonary resuscitation must always be provided than fifth year students. Interrupting life-support therapy had a higher acceptance rate among senior medical students compared to junior medical and non-medical students. 64% of non-medical students and half of year 1 medical students considered acceptable the administration of fatal doses of drugs to patients with limited prognosis. Students with more years of training were less accepting of euthanasia. When taking into consideration the limitation of life-support therapy, students believed patients (98%), doctors (92%) and families (73%) should be involved, but fewer believed nurses should be involved (38%).

Differences between medical students and experienced physicians

In a study conducted among Polish medical students and physicians, Leppert et al. (2013) found most of both categories were against euthanasia (82 % and 90 %, respectively). Concerning the legalization of euthanasia, most of them were against it (67 % of students and 75 % of physicians). Low percentages of both students and physicians would provide full information to patients with advanced cancer (28 % students and 24 % physicians). Natural death was chosen by most students and physicians (70%) in the case of diseases without cure.

Alminoja et al. (2019) found, exploring the difference between medical students and general practitioners (GPs) regarding end of life (EOL) care decisions, that the former was more unwilling to withhold and withdraw therapies than were the latter. More specifically, GPs withdrew antibiotics and nasogastric tubes and withheld resuscitation, blood transfusions and pleural drainage more often than did the students. Also, in students' opinion, euthanasia was less reprehensible. Ethical decisions among GPs were more strongly associated with religion than in the case of students. Most of both students and GPs rated their own health as excellent, did not experience burnout and being a doctor gave them satisfaction.

Conclusion

Given the complexity and challenging nature of euthanasia and physician-assisted suicide, it is important to know and understand medical professionals' opinions on these aspects, starting from medical school. Of equal importance, attitudes and knowledge on palliative care should be tracked among physicians, nurses and medical students. Medical students should acquire important knowledge on these issues and ethics education could help them improve the care provided to their patients. Also, it might help them to better adjust to their future roles as doctors.

REFERENCES

- Alminoja, A., Piili, R. P., Hinkka, H., Metsanoja, R., Hirvonen, O., Korhonen, K. T., Kerola, J. K., Saarto, T., Kellokumpu-Lehtinen, P. K. I., & Lehto JT. (2019). Does Decision-making in End-of-life Care Differ Between Graduating Medical Students and Experienced Physicians? *In Vivo*, 33(3): 903–909.
- Anneser, J., Jox, R. J., Thurn, T., & Borasio, G. D. (2016). Physician-assisted suicide, euthanasia and palliative sedation: attitudes and knowledge of medical students. *GMS Journal for Medical Education*, 33(1): Doc 11.
- Bator, E.X., Philpott, B., & Costa, A. P. (2017). This moral coil: a cross-sectional survey of Canadian medical student attitudes toward medical assistance in dying. *BMC Medical Ethics*, 18: 58.
- Burger, H., Gwyther, L., Krause, R., Ratshikana-Moloko, M., & Hellenberg, D. (2018). Medical students' perceptions on euthanasia and physician-assisted suicide: Are they fully informed? *South African Medical Journal*, 108(9): 705.

- Clemens, K. E., Klein, E., Jaspers, B., & Klaschik, E. (2008). Attitudes toward active euthanasia among medical students at two German universities. *Support Care Cancer, 16*(6): 539-45.
- Falconer, J., Couture, F., Demir, F. K., Lang, M., Shefman, Z., & Woo, M. (2019). Perceptions and intentions toward medical assistance in dying among Canadian medical students. *BMC Medical Ethics, 20*: 22.
- Gutierrez Castillo, A., Gutierrez Castillo, J. (2018). Active and Passive Euthanasia: Current Opinion of Mexican Medical Students. *Cureus, 10*(7): e3047.
- Jacobs, R. K. & Hendricks, M. (2018). Medical students' perspectives on euthanasia and physician-assisted suicide and their views on legalising these practices in South Africa. *South African Medical Journal, 108*(6): 484-489.
- Karlsson, M., Strang, P., Milberg, A. (2007). Attitudes toward euthanasia among Swedish medical students. *Palliative Medicine, 21*(7): 615-22.
- Kranidiotis, G., Ropa, J., Mprianas, J., Kyprianou, T., & Nanas, S. Attitudes towards euthanasia among Greek intensive care unit physicians and nurses. *Heart & Lung, 44*: 260e263.
- Kumar, A., Naqvi, S., Giyanwani, P., Yousuf, F., Masnoon, A., Bai, K., & Kumar, D. (2017). Euthanasia: A Controversial Entity among Students of Karachi. *Cureus, 9* (7): e1510.
- Lavoie, M., Godin, G., Vézina-Im, L. A., Blondeau, D., Martineau, I., & Roy, L. (2015). Psychosocial determinants of physicians' intention to practice euthanasia in palliative care. *BMC Medical Ethics, 16*: 6.
- Leppert, W., Gottwald, L., Majkowicz, M., Kazmierczak-Lukaszewicz, S., Forycka, M., Cialkowska-Rysz, A., Kotlinska-Lemieszek, A. (2013). A Comparison of Attitudes toward Euthanasia Among Medical Students at Two Polish Universities. *Journal of Cancer Education, 28*(2): 384-391.
- Leppert, W., Majkowicz, M., & Forycka, M. (2013). Attitudes of Polish physicians and medical students toward breaking bad news, euthanasia and morphine administration in cancer patients. *Journal of Cancer Education, 28*(4): 603-10.
- Materstvedt, L.J., Clark, D., Ellershaw, J., Førde, R., Gravgaard, A. M., Müller-Busch, H. C., Porta i Sales, J., Rapin, C. H.; EAPC Ethics Task Force. (2003). Euthanasia and physician-assisted suicide: A view from an EAPC Ethics Talk Force. *Palliative Medicine, 17*(2): 97-101.
- Naseh, L., Rafiei, H., & Heidari, M. (2015). Nurses' attitudes towards euthanasia: a cross-sectional study in Iran. *International Journal of Palliative Nursing, 21*(1): 43-8.
- Pesut, B., Greig, M., Thorne, S., Storch, J., Burgess, M., Tishelman, C., Chambaere, K., & Janke, R. (2019). Nursing and euthanasia: A narrative review of the nursing ethics literature. *Nursing Ethics: 969733019845127*.
- Pieters, J., Dolman, D. H. J. M., Verstegen, D. M. L., Warmenhoven, F. C., Courtens, A. M., & van den Beuken-van Everdingen, M. H. J. (2019). Palliative care education in the undergraduate medical curricula: students' views on the importance of, their confidence in, and knowledge of palliative care. *BMC Palliative Care, 18*: 72.

- Piili, R. P., Lehto, J. T., Luukkaala, T., Hinkka, H., & Kellokumpu-Lehtinen, P. L. (2018). Does special education in palliative medicine make a difference in end-of-life decision-making? *BMC Palliat Care*, 17: 94.
- Pomfret, S., Mufti, S., & Seale, C. (2018). Medical students and end-of-life decisions: the influence of religion. *Future Healthcare Journal*, 5 (1): 25–9.
- Rodríguez-Calvo, M. S., Soto, J. L., Martínez-Silva, I. S., Vázquez-Portomeñe, F., & Muñoz-Barús, J. I. (2019). Attitudes towards physician-assisted suicide and euthanasia in Spanish university students. *Revista Bioética*, 27(3): 490-499.
- Sepúlveda, C., Marlin, A., Yoshida, T., & Ullrich, A. (2002). Palliative Care: the World Health Organization's global perspective. *Journal of Pain and Symptom Management*, 24(2): 91-6.
- Silva, J. A. C. da, Souza, L. E. A. de, Costa, J. L. F., & da Costa, M. H. (2015). Knowledge of medical students regarding living wills. *Revista Bioética*, 23(3): 563-571.
- Stronegger, W. J., Schmolzer, C., Rasky, E., & Freidl, W. (2011). Changing attitudes towards euthanasia among medical students in Austria. *Journal of Medical Ethics*, 37: 227e229.
- World Health Organization (2018). Integrating palliative care and symptom relief into primary health care: a WHO guide for planners, implementers and managers. <https://apps.who.int/iris/bitstream/handle/10665/274559/9789241514477-eng.pdf?ua=1>
- Zenz, J., Tryba, M., & Zenz M. (2015). Palliative care professionals' willingness to perform euthanasia or physician assisted suicide. *BMC Palliative Care*, 14: 60.