

Euthanasia in Clinical Toxicology Perspective: Legal Aspects, Morality, and Health Risks

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Received: 14.08.2024

Revised: 10.09.2024

Accepted: 07.10.2024

ABSTRACT

This article examines the implications of clinical toxicology in the practice of euthanasia, focusing on aspects of law, morality and health risks. Euthanasia involving the use of toxic substances raises various dilemmas, including the patient's right to choose a proper death and the doctor's responsibility to protect life. Through a normative juridical method, this study examines the regulation of the use of toxic substances in euthanasia procedures in countries that legalize this practice. The results show the need for standardization of procedures, legal protection for medical practitioners, as well as stricter ethical guidelines to avoid abuse.

Keywords: Euthanasia, Clinical Toxicology, Law, Morality, Health Risks

INTRODUCTION

Euthanasia is a controversial practice that involves the deliberate termination of a person's life to prevent prolonged suffering, especially in patients with terminal illnesses or incurable conditions. The term "euthanasia" is derived from the Greek "eu" meaning good and "thanatos" meaning death, so it literally means "good death". Although the ultimate goal of euthanasia is to provide a peaceful death for suffering patients, the procedure raises complex legal, moral, and ethical debates in many countries. (Sener & Dikmen, 2023) One important aspect that is often discussed in the practice of euthanasia is the use of toxic substances. These substances, such as barbiturates, are used to cause quick and painless death by depressing the central nervous system and stopping vital functions. (Yun et al., 2022) Although the use of such toxic substances is considered efficient, they carry pharmacological risks that need to be carefully considered, including the potential for unforeseen health complications. This is where the role of clinical toxicology becomes important, namely to minimize risks and ensure procedures are performed safely. (Panayiotou, 2024)

In addition to the clinical aspects, the legal and ethical aspects of euthanasia practice are also complex issues. Countries that have legalized euthanasia, such as the Netherlands, Belgium, and Canada, impose strict regulations to oversee the use of toxic substances in this procedure. These regulations aim to protect patients from abuse, ensure valid consent, and protect doctors from criminal charges as long as they adhere to existing protocols. (Nichols et al., 2020) On the other hand, from an ethical perspective, euthanasia triggers a dilemma between the individual's right to determine his or her own death and the physician's obligation to preserve life, which necessitates an in-depth study of moral principles in the medical profession. Furthermore, the legal aspects, morality, and health risks related to the use of clinical toxicology in euthanasia procedures, as well as how regulations in different countries address these issues, are discussed.

Research Method

The method used in this research is normative juridical with the approach of legislation and conceptual approach. This approach is very useful to understand legal norms and provide a structured view of euthanasia in the perspective of clinical toxicology, legal perspective, morality, and health risks.

Research Result

This article discusses the application of clinical psychology in the practice of euthanasia, focusing on the legal, moral and health risks. The article highlights the need for regulations on the use of toxins in euthanasia, to ensure moral and ethical considerations in medical practice. This article uses normative juridical methods to analyze the regulations on euthanasia in different countries and recommends a more legal and ethical approach to euthanasia.

DISCUSSION

1. Definition and Classification of Euthanasia

Euthanasia, which comes from the Greek “Euthanatos” meaning good and “Thanatos” meaning death, is the act of intentionally ending a life for the benefit of that person.(Mani et al., 2023)It is defined as mercy killing of the terminally ill, injured, or incapacitated, and is regarded as the prevention of further suffering for those suffering from an illness.(Kollias et al., 2023)Euthanasia can be classified into passive, active, voluntary, involuntary, and involuntary. Passive euthanasia hastens death by altering some form, favoring properties, or administering a lethal substance.(Jessica et al., 2024)Active Euthanasia causes death through direct or indirect actions, such as injecting lethal substances or administering cyanide tablets.(Schultz et al., 2022)Voluntary euthanasia shortens the dying process with the consent and at the request of the patient, while involuntary euthanasia shortens death without the consent or request of the patient.(Riisfeldt, 2020)Non-Voluntary Euthanasia is carried out by the government in the case of infectious diseases to break the chain of transmission or limit the spread of the virus.(Grigoriță, 2023)Lumberton J.P. classifies euthanasia into three types: letting someone die, mercy death, and brain death. Mercy death is when the patient asks the doctor to end his/her life, while brain death is a medical declaration of death delivered by the doctor due to the inability of one's brain to organize human life.(Hughes, 2021)

2. Legal Aspects of Clinical Toxicology and Euthanasia

A. Regulation of the Use of Toxic Substances in Euthanasia

Patients are usually cared for in normal circumstances, but when a terminal disease reaches its severe or final stage, the patient may be permitted to die or may be kept in their current, excruciating conditions indefinitely. The conundrum of alternating between these two options is frequently a significant and contentious issue throughout history and in the future. Questions that arise under these circumstances from an ethical, social, legal, and medical standpoint must be handled judiciously and selflessly. The ethical dilemma of how we can take another person's life emerges when we are ready to end the life of an innocent patient who is in excruciating pain yet would rather live. This is unethical in the medical field. Another concern is if it is morally acceptable to keep him or her alive simply because we cannot allow them to pass away. Is the patient's life to be continued, or can his or her family insist on keeping the patient alive? What are the patient's and their family's legal rights? What role does the doctor have in delivering medical care? Is stopping the care permitted by law? Can the patient herself influence the decision taken regarding her future medical care? In this work, an attempt has been made to analyse these debatable issues which form the cornerstone of this work.

Each of the 49 countries answered every question, and where there was doubt explanations were given. A few national representatives consulted widely before re- plying. In the analysis, the decision taken by the respondents on any item was taken as final. In 12 of the 49 countries active euthanasia is thought to occur in practice In 10 of these 12, it occurs either secretly or the law chooses to ignore it. At the time of the study, active euthanasia was permit- ted only in two countries: the Netherlands and the Northern Territories of Australia, and then only in restricted circumstances. Since then, a decision taken by the Australian Senate to rescind the existing legislation in the Northern Territories has reduced this number to one. In eight countries (excluding the Netherlands and the Northern Territories), active euthanasia is not prosecuted either because the penal code does not deal with euthanasia or such a case has never been judged before the courts. In eight countries, nonvoluntary active euthanasia is believed to occur.

Passive euthanasia is a much more widely accepted condition, occurring in 23 countries. Nonvoluntary passive euthanasia occurs in a total of 30 countries. In 44 countries, assisted suicide is listed in the criminal code as a crime. At the time the study was carried out, the physician could legally assist and be present (without sanction) during patient suicides only in the Netherlands and the Northern Territories in Australia. In three countries, Germany, Sweden, and the United States, the matter is apparently not consid- ered in law. In 45 countries, the Medical Council investigates doctors who assist in suicide with the possible sanction of striking their names from the Medical Register; in the other four the matter is not considered. Here is the research conducted by Michael J Kelleher, Derek Chambers, Paul Corcoran, Helen S Keeley, Eileen Williamson, entitled “Euthanasia and Related Practices Worldwide(Kelleher et al., 1998).

Table 1: Occurrence of Euthanasia in IASP-Affiliated Countries

Argentina	Taiwan	Indonesia ^{3,4}
Bulgaria	Poland ¹	Israel ^{3,4}
China	Austria ³	New Zealand ^{3,4}
Cuba	Ireland ³	Slovenia ^{3,4}
Czech	Sweden ³	South Africa ^{3,4}
Colombia	Brazil ⁴	Sudan ^{3,4}
Republic Estonia	Hungary ⁴	Great Britain ^{3,4}
HongKong	India ⁴	Japan ^{1,2,4}
Iran	Korea ⁴	Australia ^{1,3,4}
Italy	Norway ⁴	Germany ^{1,3,4}
Lithuania	Romania ⁴	Switzerland ^{1,3,4}
Pakistan	Spain ⁴	United States ^{1,3,4}
Portugal	The Netherlands ^{1,3}	Yugoslavia ^{2,3,4}
Russia	Lichtenstein ^{1,4}	Belgium ^{1,2,3,4}
Greece ^{2,4}		Canada ^{1,2,3,4}
Turkey ^{2,4}		Denmark ^{1,2,3,4}
Finland ^{3,4}		Mexico ^{1,2,3,4}
France ^{3,4}		
Iceland ^{3,4}		
1Active euthanasia thought to occur (12 out of 49 countries)		
2Nonvoluntary active euthanasia thought to occur (8 out of 49 countries)		
3Passive euthanasia thought to occur (23 out of 49 countries)		
4Nonvoluntary passive euthanasia thought to occur (30 out of 49 countries)		

The use of toxic substances in the practice of euthanasia is regulated by different laws in each country. These regulations serve to regulate medical procedures and protect patient rights, as well as ensure that the use of toxic substances is done safely and responsibly. In countries where euthanasia is legalized, such as the Netherlands, Belgium and Canada, the use of toxic substances is strictly regulated through health and criminal law. In the Netherlands, euthanasia law is based on the *Wet toetsing levensbeënk en hulp bij zelfdoding*, which requires medical practices, procedures, and doctors to use drugs prescribed for rapid and minimal side effects. (Boer et al., 2020) In Belgium, since 2002, doctors must use clinically approved euthanasia procedures to ensure patients receive adequate care and avoid severe health risks. (Walraet, 2023) Regulations assist aspects of health law and criminal law, which set standards and guidelines for safe medical practice, including euthanasia, and include provisions prohibiting the misuse of harmful substances. The only Latin American nation where euthanasia is legal is Colombia. The Constitutional Court decriminalised it in 1997, although the Ministry of Health (Ministério do Saúde) did not explain how it might happen until April 2015. Prior to that time, it was categorised as "murder by compassion" under Article 326 of the Criminal Code. The contentious legislation and the absence of clear standards for its execution created ambiguity, divergent interpretations, and uncertainties about the issue (Dyer O, White C, 2015). The practice is currently governed by Resolution 12116/2015 of the Ministry of Health and Social Protection (Ministério do Saúde e Proteção Social), which lays forth standards and procedures to guarantee the right to die with dignity (JHR, 2015). Intravenous drugs can be administered by physicians, in hospitals, to adult patients with terminal diseases that cause intense pain and suffering that cannot be relieved. The patient must consciously request assisted death, which must be authorized and supervised by a specialist doctor, a lawyer, and a psychiatrist or psychologist. Moreover, the current legislation does not prohibit this procedure for foreign patients.

Although not yet regulated in Brazil, the topic has been widely discussed among physicians, philosophers, religious people and legal professionals who seek the best way to insert the issue in our legal system. Euthanasia is considered a crime of murder, according to the Article 121 of the Código Penal (Criminal Code), and, depending on the circumstances, the conduct of the agent can also be configured as a crime of inducement, instigation or assistance to suicide, as stated in Article 122. Furthermore, in accordance with Article 41 of the sixth Código de Ética Médica (Code of Medical Ethics), it is forbidden for physicians to shorten the patient's life, even if upon their request or that of their legal representative. The Code also points out that, in cases of incurable and terminal illness, the physician should offer all palliative care available without undertaking useless or obstinate diagnostic or therapeutic actions. It is noteworthy that, as claimed by Felix, Costa, Alves Andrade, Duarte and Brito, orthothanasia (sometimes used as a synonym for "passive euthanasia") is well secured by the Constitution, as it aims to ensure a dignified death for the terminal patient, who has the autonomy to refuse inhuman and degrading treatment (Felix ZC, Costa SFG, Alves AMPM, Andrade CG, Duarte MCS, 2013). The Conselho Federal de Medicina (Federal Council of Medicine) also made its position clear on the subject. Resolution 1805/2006 allows the physician to limit or suspend procedures and treatments that prolong

the life of terminally ill patients, respecting the will of the person or their legal representative. It also ensures that the patient continues to receive all the care necessary to relieve suffering, assuring them comfort, comprehensive care and right to be discharged (Santos DA, Almeida ERP, Silva FF, Andrade LHC, Azevêdo LA, 2014). Resolution 1995/2012, valuing the principle of patient autonomy, provides for an advance directive (or living will), ensuring its prevalence over any other non-medical opinion, including the wishes of the family. The directives are defined by the resolution as a set of desires, previously and expressly manifested by the patient, regarding the care and treatment they want, or do not want, to receive when they are unable to freely and autonomously express their will.

B. Legal Liability of Medical Practitioner

Doctor and medical practitioner play a key role in legally carrying out euthanasia procedures. (Mendz & Kissane, 2020) In countries such as the Netherlands and Belgium that legalize euthanasia, doctors must ensure the patient meets certain criteria before euthanasia is performed, including a clear and detailed prescription. They must also maintain proper medical care, especially when using toxicants. Legal experts must ensure the patient is in a terminal medical condition and avoid harmful effects. (Renckens et al., 2024) As part of their legal responsibilities, medical practitioners are also required to document every stage of the procedure, including the dosage of toxic substances used. (Tatzer et al., 2023) In some countries, specialized committees or health authorities are tasked with overseeing and examining this documentation to ensure that the practice of euthanasia has been carried out in accordance with the law.

C. Case Studies of Euthanasia Laws in Different States

A Dutch study investigates the regulation of euthanasia and toxic use. In 2019, a doctor performed euthanasia on a patient which led to a public outcry. The doctor used legal instruments, but the patient's decision was deemed invalid. (Lemos Dekker, 2021) In Canada, a case involving Medical Assistance in Dying (MAID) regulated euthanasia for ALS patients, involving barbiturates and procedures. Post-mortem results showed higher doses of the drugs, leading to debate about the dosage and effectiveness of the barbiturates. (Gromadzki & Christie, 2024) This case study shows that although there are strict regulations regarding the use of toxic substances in euthanasia, their application can vary and depend on the individual circumstances of the patient and the doctors involved. (Mahnoor et al., 2024) The legal system continues to develop rules to ensure the safety of procedures, but ethical and legal challenges will continue to arise, especially when it comes to the use of hazardous substances in a medical context.

3. Morality and Ethics in Toxicology-Based Euthanasia

A. Ethical Dilemmas in the Use of Toxic Drug

Euthanasia, a psychological approach that uses drugs to improve a person's life, raises moral issues. It involves striking a balance between individual rights and doctor-patient responsibilities. Euthanasia is illegal in countries such as the Netherlands, Belgium and Canada, where the law allows individuals to make the decision. (Piękoś-Lorenc et al., 2021) The doctor, a medical professional, has an ethical responsibility to maintain a healthy lifestyle, adhering to the Hippocratic principle of "causing no harm" and addressing issues related to the patient's needs and wishes, thereby promoting good health. (Balducci & Colloca, 2020)

B. Moral Conflicts in the Use of Hazardous Substance

Clinical toxicology focuses on the use of chemicals for medical purposes, including toxic drugs in appropriate doses to alleviate symptoms or disease, and is ethically complex, raising ethical questions. (Sihite, 2023) Moral quandaries arise from the fact that substances designed for therapeutic purposes in the medical world, and euthanasia, their function to end life, contradict traditional moral values in the medical profession, and create moral ambiguity. (Udwadia et al., 2023) Legalizing euthanasia may increase mental health benefits, as the use of toxicants in euthanasia is not immoral if done properly and without outside interference.

C. Perspectives on Medical Ethics and Religion

Different religious and ethical perspectives differ on using toxicants for euthanasia. Some argue that euthanasia is an ethical "aid in dying" in cases where palliative care is not used. (Hofmann, 2024) Euthanasia, a term used in various religious traditions such as Christianity, Islam, and Hinduism, is considered a moral principle that respects the fundamental aspects of human life, excluding the divine. The ethical view opposes euthanasia and is based on the principle of non-maleficence in medical ethics, emphasizing intentional acts to cause death, suffering, and harm, violating the principle of causing no harm. (Balaj et al., 2024) Some progressive religious and ethical groups argue that the extreme circumstances of the teachings can make a person who performs euthanasia a shaman and a threat to humanity.

4. Health Risks in Euthanasia Procedure

A. Pharmacological Risks of Drug Use in Euthanasia

Euthanasia procedures involve drugs or chemicals with toxic effects to end a patient's life quickly. However, the use of drugs in any context comes with pharmacological risks. Commonly used drugs in procedures, there is a risk of side effects. The risk of drug abuse is the potential for uncontrolled reactions to the drugs used. Everyone has a different response to drugs, which can lead to complications and hinder treatment. Certain medical conditions can also affect drug metabolism and side effects. (Saikia et al., 2024) Another possible complication is interactions with other medications that the patient is currently taking. Patients with chronic illnesses who are undergoing treatment with multiple types of medications may have a higher risk of experiencing unexpected side effects, due to interactions between the medications used in the euthanasia procedure and other medication.

B. Effectiveness of Toxic Substances in Euthanasia Procedure

Clinical toxicology is that the effectiveness of a toxic substance in achieving a quick and painless death depends largely on the dose and method of administration, with the ultimate goal in euthanasia procedures being a peaceful death with minimal suffering. Determining the correct dose is essential to avoid procedure failure or overdose which may lead to a more prolonged and painful death. A dose that is too low may not cause a quick death, but rather prolong the patient's suffering. On the other hand, an uncontrolled overdose can cause unexpected bodily reactions, such as seizures that can make the procedure more traumatic for the patient and family. Clinical toxicologists play an important role in assessing and calculating the correct dosage based on the patient's weight, health condition, and medical history. They must also consider factors such as the patient's tolerance to certain drugs, interactions with other drugs being taken, and the body's ability to process the chemical substance. There is a risk of failure for procedures involving toxic substances if there is an error in the dosage calculation or if the patient has resistance to the drugs used. (Subali et al., 2024)

C. Psychological Impact on Patients and Family

Clinical toxicology is the biological and chemical aspects of the use of toxic substances, which should not be overlooked. The decision to perform euthanasia is emotionally and profoundly distressing for both the patient and family members, and is procedure-related fear, anxiety and doubt. Families supporting the euthanasia decision face significant emotional challenges, especially if they are involved in the consent process, which exacerbates the emotional state following the procedure, and the process of witnessing the euthanasia procedure. Psychological support is essential for both the patient and family before, during and after the euthanasia procedure. Psychological counseling can help reduce anxiety and provide an opportunity for all parties to openly discuss their feelings. Such interventions can also help families understand and accept the decision that has been made, as well as process their emotions after losing a loved one. (Sun et al., 2024)

5. Legal and Ethical Recommendations on the Use of Clinical Toxicology in Euthanasia

A. Standardization of Euthanasia Procedures Based on Clinical Toxicology

The euthanasia procedure is the application of strict and uniform legal standards, related to the use of toxic substances, which are used such as barbiturates or neuromuscular drugs, should be clearly regulated in law. Clinical toxicology of euthanasia procedures can help define international guidelines for dosage, administration methods, and protocols, ensuring proper dosage based on the patient's health condition and other medical factor. Countries that have legalized euthanasia, such as the Netherlands, Belgium and Canada, can serve as models for the development of standards for this procedure. Their experience shows that good regulation is able to minimize risks and maintain a balance between patients' rights and doctors' responsibilities. Thus, standardization of euthanasia procedures should cover all aspects from patient consent to the method of using toxic substances to ensure that the process runs in accordance with the principles of justice, safety and human dignity. (Earp et al., 2024)

B. Legal Protection for Medical Practitioner

The legal framework for medical practitioners using euthanasia is essential to ensure that they can act without breaking the law, as doctors and therapists deal with both legal and moral issues, to ensure ethical practice. The law prohibits doctors from harming patients by ignoring established standards and protocols. In Belgium and Belgium, euthanasia laws allow doctors to conduct legal proceedings without legal supervision, to ensure fairness and transparency. With clear and firm legal protection, doctors will feel safer to carry out their responsibilities, and patients can feel more confident that the procedures they undergo are professionally supervised. Furthermore, these protections can also reduce the risk of abuse or malpractice, as doctors working within a clear legal framework will be more likely to follow existing guidelines rather than acting recklessly. (Muyskens et al., 2024)

C. Ethical Guidelines in the Practice of Euthanasia

Ethical guidelines should establish key principles in the medical profession, such as patient autonomy, non-

maleficence, beneficence, and justice. In the context of euthanasia, there is an urgent need to ensure that doctors and medical personnel respect patients' rights. Doctors should ensure patients who request euthanasia fully understand the consequences of their decision, the euthanasia process should be conducted with transparency, and the patient's consent should be recorded in writing, witnessed by a neutral party. Ethical guidelines should include prohibitions and restrictions on the use of euthanasia in vulnerable patients, those who are mentally ill and under conditions, and physicians should prioritize the safety and well-being of patient. The psychological environment for individuals and groups should be part of ethical decision-making, so that they can understand their feelings better and ensure that their groups support and help them. (Khoiri et al., 2022)

CONCLUSION

This article discusses euthanasia from a clinical toxicology perspective, focusing on the legal aspects, morality, and health risks associated with the use of toxic substances in the procedure. Euthanasia, although recognized in some countries, such as the Netherlands and Belgium, remains a controversial and dilemma-filled topic, especially regarding the use of lethal toxic chemical. From a legal perspective, various countries have enacted strict regulations to ensure that euthanasia procedures are performed safely, with strict supervision of drug dosage and clear patient consent. Legal liability for medical practitioners is crucial in ensuring patient safety and avoiding abuse of the procedure. Legal protection is needed to prevent criminal charges for doctors who adhere to medical and ethical guideline. From a moral and ethical perspective, this procedure poses a dilemma between respecting the patient's autonomy to choose a suitable death and the physician's obligation to preserve life. Clinical toxicology reveals ethical conflicts related to the use of harmful substances designed to kill, and this requires in-depth ethical review to prevent misuse, especially for vulnerable patients. Finally, standardization of clinical toxicology-based procedures is urgently needed to ensure that drug dosages, administration methods, as well as the overall process are conducted in accordance with the principles of fairness and patient safety.

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