



What medical conditions lead to a request for euthanasia? A rapid scoping review

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Abstract

Background and Aims: Euthanasia is a controversial issue related to the right to die. Although euthanasia is mostly requested by terminally sick individuals, even in societies where it is legal, it is unclear what medical conditions lead to euthanasia requests. In this scoping review, we aimed to compile medical conditions for which euthanasia has been requested or performed around the world.

Methods: The review was preferred reporting items for systematic reviews and meta-analysis for scoping reviews (PRISMA-ScR) checklist. Retrieved search results were screened and unrelated documents were excluded. Data on reasons for conducting or requesting euthanasia along with the study type, setting, and publication year were extracted from documents. Human development index and euthanasia legality were also extracted. Major medical fields were used to categorize reported reasons. Group discussions were conducted if needed for this categorization. An electronic search was undertaken in MEDLINE through PubMed for published documents covering the years January 2000 to September 2022.

Results: Out of 3323 records, a total of 197 papers were included. The most common medical conditions in euthanasia requests are cancer in a terminal phase (45.4%), Alzheimer's disease and dementia (19.8%), constant unbearable physical or mental suffering (19.8%), treatment-resistant mood disorders (12.2%), and advanced cardiovascular disorders (12.2%).

Conclusion: Reasons for euthanasia are mostly linked to chronic or terminal physical conditions. Psychiatric disorders also lead to a substantial proportion of euthanasia requests. This review can help to identify the features shared by conditions that lead to performing or requesting euthanasia

KEYWORDS

assisted suicide (AS), bioethics, euthanasia, mercy killing, right to die

1 | INTRODUCTION

Euthanasia is a challenging issue that has sparked numerous controversies around the world over the past couple of decades.¹ Globally, about 200 million people have access to euthanasia and other forms of assisted dying.² Euthanasia is legal in some countries, such as the Netherlands, Belgium, Luxembourg, Colombia, Canada, some states in the United States, Spain, Australia, and New Zealand.^{3–6} Also, new legislation is being crafted in some countries such as Portugal.⁷ The literal meaning of euthanasia is good death or easy death^{8,9} and it has been defined as “the termination of the life of the terminally ill patients at their request”.¹⁰ According to this definition, euthanasia should only be received by patients who suffer from end-stage diseases, but in a few countries, such as Belgium, Netherlands, and Canada people may also request euthanasia even though they are not terminally ill.^{11–13}

Some countries, such as Denmark, France, or Sweden, report relatively high public acceptance of euthanasia; however, it is not possible there to undergo euthanasia. On the contrary, in most European countries, the acceptance is low to moderate.¹⁴ Opponents of euthanasia argue that it violates medical ethics and physicians' responsibilities.^{15,16} Proponents claim that euthanasia is a form of palliative care that respects the autonomy of terminally ill patients and allows them to die peacefully.^{17–19}

Two types of euthanasia can be differentiated. Active euthanasia consists of deliberately administering a life-ending substance or procedure.²⁰ Conversely, in a type of euthanasia which is not active, a person's life is intentionally ended by withholding life-sustaining treatment.^{20,21} The public acceptance of these two types varies largely.^{22,23}

Various physical and mental conditions can increase the likelihood of requesting euthanasia among patients.^{24,25} Contrary to the increasing number of euthanasia requests around the world, no consensus about criteria for recognizing conditions in which patients can request euthanasia as palliative care has been reached around the world. Informing about all medical conditions that increase the likelihood of requesting euthanasia can help health policymakers as well as clinicians to reach a more precise decision about the acceptance or the rejection of requests made by patients when face by such requests. In this study, we searched all medical conditions that make patients request euthanasia through an examination of scientific literature.

2 | MATERIALS AND METHODS

A literature review was conducted to see whether there is any reason for any type of euthanasia to be requested regardless of whether the euthanasia request was accepted or not. This review was done according to the preferred reporting items for systematic reviews and meta-analysis for scoping reviews (PRISMA-ScR) checklist.²⁶

In this scoping review, the population comprised all patients who requested euthanasia according to published studies. The concept is

What is already known about the topic?

- Euthanasia is a challenging issue that has sparked numerous controversies around the world over the past decades.
- There is no consensus about the criteria or guidelines that have been set for identifying a patient eligible for euthanasia in different countries.

What this paper adds?

- To our knowledge, this is the first scoping review to systematically list and categorize published records of euthanasia requests around the world into five broad groups.
- We provide a picture of all euthanasia requests' frequencies in each broad group.
- This study facilitates informing scientists and researchers about the trends of euthanasia requests during different years and in different countries around the world.

How this study might affect research, practice, or policy?

- This review can provide information to help clinicians and health policymakers to reach a more precise decision about the acceptance or the rejection of requests made by patients.
- This review informs readers about all medical conditions that increase the likelihood of requesting euthanasia. Researchers should consider these conditions and conduct further research on each condition in detail.

made by medical conditions underlying euthanasia requests, and the context was delimited by countries with published data on euthanasia requests.

2.1 | Search strategy

After conducting a preliminary trial, search terms were defined through consensus. Only published studies were considered. The search strategy was set to be very broad and sensitive as follows: ((euthanasia[Title] OR (assisted suicide[Title])) OR (medical assistance in dying[Title])). As euthanasia has become a reality in recent years, documents with a publication date of January 1, 2000 onwards were searched. The initial search was conducted on July 30, 2019 and updated on September 11, 2022. The language was restricted to English, and no geographical restriction was considered. All papers were imported to Endnote X8 software (Clarivate Analytics), and duplicates were removed. In the next step, the first screening was carried out by the first author, and after evaluating titles and

abstracts, irrelevant publications for the aim of the study were excluded. Then, Zahra Rahimian and Leila Rahimian independently gathered eligible studies by examining full texts. All disagreements were discussed and consulted with a third party (Hossein M. Vardanjani).

2.2 | Eligibility criteria

There were no filters or limitations for the type of paper or their methodological design. All English records that described at least one potential condition for which euthanasia was allowed, received, or just requested (without necessarily being performed) were included. We also included studies discussing theoretical conditions or authors' opinions linked to euthanasia requests. Articles were excluded if they did not fulfill the above conditions. Publications did not present medical conditions, articles about euthanasia for animals, and studies describing COVID-19 cases were also excluded.

2.3 | Data extraction

A data spreadsheet was used to collect the required information. After reading some articles by these two authors, existing defects in the data collection form were detected and fixed through discussion. Therefore, the final version of the spreadsheet for data collection was created to gather all the required information. The data extraction

process was carried out by two independent authors (Zahra Rahimian and Leila Rahimian) and any disagreements were discussed in to reach a consensus. The extracted data included the first author's name, publication year, type of study, country or state assigned to the corresponding author, human development index (HDI) of the country,²⁷ the legal status of euthanasia in the country,²⁸ and reasons or conditions that could lead to euthanasia request. We continued to extract data until the number of extracted items reached saturation, that is data extraction was stopped when the last 10 publications of all assessed articles did not add any new items to the list of euthanasia requests. After updating the PubMed search, only one article containing new euthanasia items was added. A list of all conditions leading to euthanasia can be seen in Table 1.

2.4 | Evidence synthesis

We merged all conditions into major groups by consulting two internists. First, all items were categorized into adult and pediatric groups. Items included in the adult group were categorized according to major medical fields, including "internal medicine diseases," "neurological and neurocognitive diseases," and "psychiatric disorders." In the adult group, items that fell outside these categories were embedded in the "nonspecific" category (Table 1). Being rare, items in the pediatric group were not divided into different subgroups and this group, itself, was considered as another major medical field. All methodological steps are provided in Figure 1.

TABLE 1 Euthanasia request items in each major classification.

Internal medicine diseases	Cancer in a terminal phase, advanced cardiovascular disorders, advanced respiratory disease, acquired immune deficiency syndrome (AIDS), multiple morbidities from different physical conditions, severe rheumatologic and musculoskeletal disorders, chronic organ failure, sepsis, systemic phase of mycosis fungicides, chronic vascular inflammatory disease, multidrug-resistant tuberculosis (MDR-TB), diabetes mellitus, and Pickwickian syndrome.
Neurological and neurocognitive diseases	Alzheimer's disease and dementia, motor neuron diseases, paralysis, stroke/CVA, multiple sclerosis (MS), persistent vegetative state (PVS), severe brain damage/injury, coma, extensive cerebral hemorrhage, Parkinson's disease, autism spectrum disorder (ASD), Huntington disease, Locked-in syndrome, brain failure, severe mental retardation, spinal cord injury (SCI), Duchenne muscular atrophy.
Psychiatric and mental illnesses	Alzheimer's disease and dementia, treatment-resistant depression, comorbid psychiatric conditions, personality disorders, posttraumatic stress or anxiety disorder (PTSD), end-stage anorexia nervosa, generalized anxiety disorder, chronic schizophrenia, comorbidity of mental and physical conditions, addiction especially when all therapeutic measures have failed (alcohol and substance abuse), chronic pain syndrome/disorder, severe persistent mental illness, being abused in childhood.
Pediatric diseases	Spina bifida, severe brain abnormalities or damage, chromosomal abnormalities, multiple or severe congenital abnormalities, extremely premature infants, severe epidermolysis bullosa, cerebral palsy, osteogenesis imperfecta, critically ill or disabled newborns, trachea-esophageal fistula (TEF), deformities of the limb or head, inborn errors of metabolism, severe lung hypoplasia, HIV-infected infants, Tay-Sachs, hemophilia, extensive organ damage.
Nonspecific conditions	Constant unbearable physical or mental suffering without definite treatment (with no prospect of improvement), high probability for early death, uncontrollable continuous pain, being tired of life, advanced state of irreversible decline in capability and quality of life, condition of old age, feeling lonely, refractory symptoms of terminal illness, loss of mental capacity due to terminal illness, irreversible loss of circulatory, respiratory or brain function and other conditions (including meaningless, fear of losing close ones, fear of losing autonomy).



FIGURE 1 Summary of method steps.

3 | RESULTS

In PubMed, a total of 3323 records were found. After screening the abstracts and assessing the eligibility of the papers we selected 197 publications (Figure 2). A description of each publication can be found in Table 2, temporal trends are shown in Figure 3.

Out of 197 publications, a total of 184 (93.40%) articles were written in developed countries and 118 (59.89%) in regions where euthanasia is legal. About half of the studies were original (53.80%), one in five was a review (20.30%), and one in four was a letter or editorial (25.90%).

The frequency of publications reported euthanasia in all major categories is provided in Figure 4.

4 | DISCUSSION

4.1 | Summary of main findings

There is no consensus about the criteria or guidelines that have been set for identifying a patient eligible for euthanasia in different countries although some authors have previously outlined general or nonspecific conditions for euthanasia requests. In this study, we have listed and categorized all published records of euthanasia

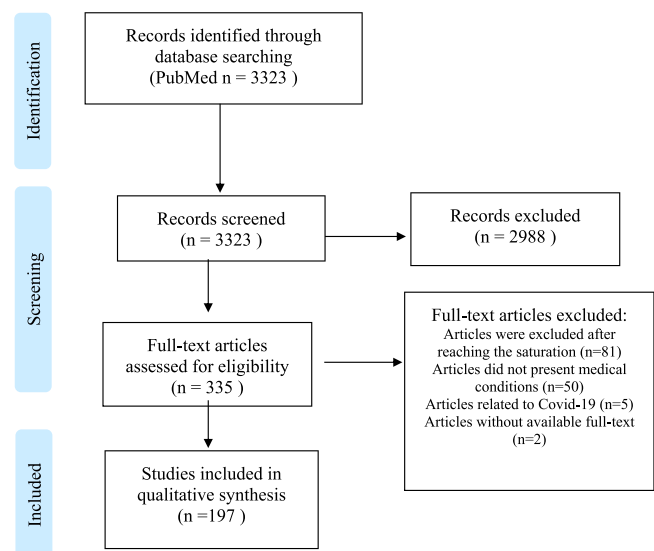


FIGURE 2 Preferred reporting items for systematic reviews and meta-analysis for scoping reviews (PRISMA-ScR) flow diagram.

requests around the world into five broad groups. Internal medicine diseases were the most common conditions for which euthanasia was requested or allowed, whereas pediatric diseases were the least common.

TABLE 2 Euthanasia request items reported in each publication.

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
1	Abarshi ²⁹	2009	Terminal phase of cancer, being tired of life	Original report	Netherlands	0.94	Legal
5	Adams ³⁰	2003	Being tired of life, terminal phase of cancer, constant unbearable suffering without treatment (incurable or irreversible condition), coma, dementia	Review	Belgium	0.93	Legal
2	Adchalingam ³¹	2005	Terminal phase of cancer, cerebral palsy, unbearable suffering without treatment	Original report	Malaysia	0.80	Illegal
3	Adeyemo ³²	2004	Terminal phase of cancer	Review	Nigeria	0.54	Illegal
4	Ahmed ³³	2006	Constant unbearable suffering without treatment	Original report	Sudan	0.51	Illegal
6	Akabayashi ³⁴	2002	Unbearable suffering without treatment (incurable or irreversible condition), extensive cerebral hemorrhage, terminal phase of cancer, sepsis	Original report	Japan	0.91	Illegal
7	Albaladejo ³⁵	2019	Advanced cardiovascular disorders, dementia, unbearable suffering without treatment	Review	USA (Los Angeles)	0.92	Illegal
8	Alvargonzález ³⁶	2012	Alzheimer's disease	Review	Spain	0.89	Legal
9	Andraghetti ³⁷	2001	Acquired immunodeficiency syndrome (AIDS)	Original report	Belgium	0.93	Legal
10	Anquinet ³⁸	2013	Terminal phase of cancer	Original report	Belgium	0.93	Legal
11	Appel ³⁹	2004	Motor neuron disease (Amyotrophic lateral sclerosis [ALS]), severe or treatment-resistant depression	Editorial	Netherlands	0.94	Legal
12	Asai ⁴⁰	2001	Constant unbearable suffering without treatment (incurable or irreversible condition), uncontrollable continuous pain	Original report	Japan	0.91	Illegal
13	Au ⁴¹	2007	Uncontrollable continuous pain	Editorial	Hong Kong	0.94	Illegal
14	Aubry ⁴²	2016	Severe brain damage	Editorial	France	0.89	Illegal
15	Bahník ⁴³	2019	Terminal phase of cancer, dementia, uncontrollable pain, paralysis, treatment-resistant depression	Original report	Czech Republic	0.90	Illegal
16	Barilan ⁴⁴	2001	Constant unbearable suffering without treatment (incurable or irreversible condition), Alzheimer's disease	Review	Israel	0.90	Illegal
17	Barone ⁴⁵	2017	Constant unbearable suffering without treatment (with no prospect of improvement), extremely premature infants, high probability for early death, refractory symptoms associated with very advanced terminal	Editorial	USA (Maryland)	0.92	Illegal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
			illness, critically ill or disabled newborns				
18	Baumrucker ⁴⁶	2004	Advanced respiratory disease	Original report	USA	0.92	Illegal
19	Baumrucker ⁴⁷	2009	Pickwickian syndrome	Original report	USA	0.92	Illegal
20	Beardsley ⁴⁸	2018	Terminal phase of cancer, high probability for early death, constant unbearable suffering without treatment	Review	Australia	0.94	Legal
21	Beckwith ⁴⁹	2013	Spina bifida, comatose, chromosomal abnormalities, severe brain abnormalities, high probability for early death, Be in an advanced state of irreversible decline in capability and quality of life, trachea-esophageal fistula (TEF)	Review	USS (Illinois)	0.93	Illegal
22	Beernaert ⁵⁰	2018	High probability for early death, cancer	Original report	Belgium	0.93	Legal
23	Begley ⁵¹	2008	Uncontrollable continues pain	Original report	Ireland	0.95	Illegal
24	Benedict ⁵²	2009	Severe brain abnormalities, HIV-infected infants, terminal phase of cancer, spina bifida, paralysis	Review	USA (California)	0.93	Legal
25	Benrimoh ⁵³	2017	End-stage anorexia nervosa, motor neuron disease (ALS and spinal muscular atrophy), comorbid psychiatric conditions, autism spectrum disorder (ASD), constant unbearable suffering without treatment (with no prospect of improvement)	Original report	Canada	0.92	Legal
26	Bernheim ⁵⁴	2001	Terminal phase of cancer	Editorial	Belgium	0.93	Legal
27	Bernheim ⁵⁵	2014	Terminal phase of cancer, extensive cerebral hemorrhage, advanced cardiovascular disorders	Original report	Belgium	0.93	Legal
28	Berry ⁵⁶	2000	Uncontrollable continuous pain, massive bed sore	Editorial	UK	0.93	Illegal
29	Bishop ⁵⁷	2006	Terminal phase of cancer, multimorbidity of psychological and physical conditions	Editorial	France	0.89	Illegal
30	Blank ⁵⁸	2001	High probability for early death, Alzheimer's disease, coma	Original report	USA (Connecticut)	0.92	Illegal
31	Bodwal ⁵⁹	2019	Persistent vegetative state (PVS)	Original report	India	0.64	Illegal
32	Boer ⁶⁰	2018	Addiction, terminal phase of cancer, old age conditions	Editorial	Netherlands	0.94	Legal
33	Boisvert ⁶¹	2010	High probability for early death	Editorial	Canada	0.92	Legal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
34	Bollen ⁶²	2019	Unbearable suffering without treatment (incurable or irreversible condition)	Review	Belgium	0.93	Legal
35	Bolt ⁶³	2016	Diabetes mellitus, advanced cardiovascular disorders, cerebrovascular accident (CVA), terminal phase of cancer, advanced respiratory disease, severe rheumatologic and musculoskeletal disorders (arthritis)	Original report	Netherlands	0.94	Legal
36	Bolt ⁶⁴	2015	Being tired of life, terminal phase of cancer, dementia	Original report	Netherlands	0.94	Legal
37	Booij ⁶⁵	2013	Huntington's disease, motor neuron disease (ALS), dementia	Original report	Netherlands	0.94	Legal
38	Borgsteede ⁶⁶	2007	High probability for early death, terminal phase of cancer, advanced cardiovascular disorders (heart failure), advanced respiratory disease (COPD), multimorbidity of physical conditions	Original report	Netherlands	0.94	Legal
39	Bos ⁶⁷	2019	Constant unbearable suffering without treatment, terminal phase of cancer, advanced cardiovascular disorders (heart failure)	Original report	Netherlands	0.94	Legal
40	Bosshard ⁶⁸	2003	Paralysis	Original report	Switzerland	0.95	Legal
41	Brinkman- Stoppelenburg ⁶⁹	2014	Terminal phase of cancer, CVA, advanced respiratory disease (COPD), multiple sclerosis (MS), motor neuron disease (ALS), advanced cardiovascular disorders (heart failure)	Original report	Netherlands	0.94	Legal
42	Brits ⁷⁰	2009	Loss of mental capacity due to terminal illness, constant unbearable suffering without treatment (incurable or irreversible condition), be in an advanced state of irreversible decline in capability and quality of life	Original report	South Africa	0.70	Illegal
43	Brouwer ⁷¹	2018	Terminal phase of cancer	Review	Netherlands	0.94	Legal
44	Browne ⁷²	2006	Terminal phase of cancer	Editorial	Canada	0.92	Legal
45	Buiting ⁷³	2009	Unbearable suffering without treatment	Original report	Netherlands	0.94	Legal
46	Burgermeister ⁷⁴	2004	Constant unbearable suffering without treatment (incurable or irreversible condition)	Editorial	France	0.89	Illegal
47	Burgermeister ⁷⁵	2006	Dementia	Editorial	Belgium	0.93	Legal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
48	Burkhardt ⁷⁶	2006	Constant unbearable suffering without treatment (incurable or irreversible condition)	Review	Switzerland	0.95	Legal
49	Carter ⁷⁷	2016	Multiple congenital abnormalities, Inborn errors of metabolism, terminal phase of cancer, extremely premature infants	Editorial	Belgium	0.93	Legal
50	Carter ⁷⁸	2007	Terminal phase of cancer	Original report	Australia	0.94	Legal
51	Chao ⁷⁹	2002	Spina bifida, brain abnormalities, treatment-resistant depression, severe rheumatologic and musculoskeletal disorders (rheumatism), systemic phase of mycosis fungicides, PVS, Alzheimer's disease, coma, terminal phase of cancer	Review	Netherlands	0.94	Legal
52	Chavan ⁸⁰	2012	PVS	Editorial	India	0.64	Illegal
53	Cohen ⁸¹	2018	Terminal phase of cancer, stroke, advanced cardiovascular disorders	Original report	Belgium	0.93	Legal
54	Cohen-Almagor ⁸²	2002	Terminal phase of cancer	Original report	Netherlands	0.94	Legal
55	Cohen-Almagor ⁸³	2002	Alzheimer's disease, cancer, AIDS, severe congenital abnormality	Original report	Netherlands	0.94	Legal
56	Cohen-Almagor ⁸⁴	2009	Constant unbearable suffering without treatment (with no prospect of improvement)	Review	Belgium	0.93	Legal
57	Cohen-Almagor ⁸⁵	2015	Alzheimer's disease, dementia	Review	Belgium	0.93	Legal
58	Cohen-Almagor ⁸⁶	2018	Constant unbearable physical or mental suffering without treatment (with no prospect of improvement)	Editorial	Belgium	0.93	Legal
59	Comby ⁸⁷	2005	Terminal phase of cancer, AIDS	Original report	France	0.89	Illegal
60	Cuttini ⁸⁸	2004	Extremely premature infants, severe brain damage	Original report	Italy	0.88	Illegal
61	de Beaufort ⁸⁹	2016	Dementia, Alzheimer's disease, Huntington's disease, AIDS	Editorial	Netherlands	0.94	Legal
62	de Boer ⁹⁰	2010	Dementia	Original report	Netherlands	0.94	Legal
63	De Haan ⁹¹	2002	Constant unbearable suffering without treatment (incurable or irreversible condition)	Review	UK	0.93	Illegal
64	Dees ⁹²	2013	Terminal phase of cancer, chronic pain syndrome, advanced cardiovascular disorders, being tired of life	Original report	Netherlands	0.94	Legal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
65	Demedts ⁹³	2018	Unbearable mental suffering	Original report	Belgium	0.93	Legal
66	Denys ⁹⁴	2018	Treatment-resistant depression	Editorial	Netherlands	0.94	Legal
67	Deschepper ⁹⁵	2014	Terminal phase of cancer, unbearable mental suffering	Original report	Belgium	0.93	Legal
68	Dierickx ⁹⁶	2015	CVA, terminal phase of cancer, advanced respiratory disease, advanced cardiovascular disorders	Original report	Belgium	0.93	Legal
69	Dierickx ⁹⁷	2016	Motor neuron disease, terminal phase of cancer, AIDS, advanced cardiovascular disorders	Original report	Belgium	0.93	Legal
70	Dierickx ⁹⁸	2017	Dementia, comorbid psychiatric conditions	Original report	Belgium	0.93	Legal
71	Dierickx ⁹⁹	2019	High probability for early death, terminal phase of cancer	Original report	Belgium	0.93	Legal
72	Dimond ¹⁰⁰	2000	Terminal phase of cancer, severe rheumatologic and musculoskeletal disorders (rheumatism)	Editorial	UK	0.93	Illegal
73	Dimond ¹⁰¹	2004	Multimorbidity of physical conditions, paralysis, motor neuron disease	Editorial	UK	0.93	Illegal
74	Downie ¹⁰²	2000	Constant unbearable physical suffering without treatment (with no prospect of improvement), severe congenital abnormalities	Editorial	Netherlands	0.94	Legal
75	Draper ¹⁰³	2010	Alzheimer's disease, Huntington's disease, comorbid psychiatric conditions	Review	Australia	0.94	Legal
76	Emanue ¹⁰⁴	2017	Cancer, AIDS, motor neuron disease (ALS)	Editorial	USA (Philadelphia)	0.92	Illegal
77	Emanuel ¹⁰⁵	2005	Terminal phase of cancer	Editorial	USA (Philadelphia)	0.92	Illegal
78	Emanuel ¹⁰⁶	2000	Terminal phase of cancer	Original report	USA (Philadelphia)	0.92	Illegal
79	Emanuel ¹⁰⁷	2016	Terminal phase of cancer, high probability for early death, severe congenital abnormalities, advanced cardiovascular disorders, advanced respiratory disease	Review	USA (Philadelphia)	0.92	Illegal
80	Erdek ¹⁰⁸	2015	Terminal phase of cancer	Editorial	USA (Maryland)	0.92	Illegal
81	Evenblij ¹⁰⁹	2019	Constant unbearable suffering without treatment (incurable or irreversible condition), personality disorders	Original report	Netherlands	0.94	Legal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
82	Evenblij ¹¹⁰	2019	Terminal phase of cancer, advanced cardiovascular disorders, dementia, advanced respiratory disease	Original report	Netherlands	0.94	Legal
83	Fitzgerald ¹¹¹	2004	Chronic vascular inflammatory disease	Editorial	USA (California)	0.92	Legal
84	Frenkel ¹¹²	2000	Tay-Sachs, coma, motor neuron disease (ALS)	Review	Israel	0.90	Illegal
85	Friedel ¹¹³	2018	High probability for early death, unbearable suffering without treatment (incurable or irreversible condition)	Editorial	Belgium	0.93	Legal
86	Gamester ¹¹⁴	2009	Chronic organ failure	Editorial	Belgium	0.93	Legal
87	Garrard ¹¹⁵	2005	Constant suffering without definite treatment	Review	UK	0.93	Illegal
88	Gastmans ¹¹⁶	2010	Be in an advanced state of irreversible decline in capability and quality of life	Review	Belgium	0.93	Legal
89	Georges ¹¹⁷	2007	Terminal phase of cancer, treatment-resistant depression, being tired of life	Original report	Netherlands	0.94	Legal
90	Georges ¹¹⁸	2005	Terminal phase of cancer	Original report	Netherlands	0.94	Legal
91	Gordijn ¹¹⁹	2001	Alzheimer's disease	Review	Ireland	0.95	Illegal
92	Gorsuch ¹²⁰	2007	Chromosomal abnormalities, hemophilia	Editorial	USA (Colorado)	0.92	Legal
93	Guirimand ¹²¹	2014	Terminal phase of cancer, motor neuron disease (ALS)	Original report	France	0.89	Illegal
94	Guo ¹²²	2006	Terminal phase of cancer, PVS, severe brain damage, uncontrollable continuous pain, be in an advanced state of irreversible decline in capability and quality of life	Review	UK	0.93	Illegal
95	Hall ¹²³	2018	Terminal phase of cancer, constant unbearable physical or mental suffering without definite treatment (with no prospect of improvement), addiction especially when all therapeutic measures have failed (alcohol and substance abuse)	Editorial	Australia	0.94	Legal
96	Hanson ¹²⁴	2016	Severe epidermolysis bullosa, chromosomal abnormalities, spina bifida	Editorial	USA (Kentucky)	0.92	Illegal
97	Hanssen-de Wol ¹²⁵	2008	Unbearable suffering without treatment (incurable or irreversible condition), terminal phase of cancer	Original report	Netherlands	0.94	Legal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
98	Haverkate ¹²⁶	2000	Treatment-resistant depression	Original report	Netherlands	0.94	Legal
99	Hayashi ¹²⁷	2002	Paralysis, treatment-resistant depression, generalized anxiety disorder, terminal phase of cancer, high probability for early death, constant unbearable suffering without treatment (incurable or irreversible condition), uncontrollable pain	Review	Japan	0.91	Illegal
100	Hertogh ¹²⁸	2009	Stroke, dementia	Original report	Netherlands	0.94	Legal
101	Hodel ¹²⁹	2016	Severe persistent mental illness, chronic schizophrenia, end-stage anorexia nervosa	Editorial	Switzerland	0.95	Legal
102	Hurst ¹³⁰	2003	Motor neuron disease	Review	Switzerland	0.95	Legal
103	Jacobs ¹³¹	2018	Multimorbidity of physical conditions, terminal phase of cancer, multidrug-resistant tuberculosis (MDR-TB)	Original report	South Africa	0.70	Illegal
104	Jansen-van der Weide ¹³²	2005	Terminal phase of cancer, motor neuron disease (ALS), MS, advanced respiratory disease, advanced cardiovascular disorders (heart failure), be in an advanced state of irreversible decline in capability and quality of life, depression	Original report	Netherlands	0.94	Legal
105	Johansen ¹³³	2005	Terminal phase of cancer	Original report	Norway	0.95	Illegal
106	Kakuk ¹³⁴	2007	Motor neuron disease, PVS, paralysis	Review	UK	0.93	Illegal
107	Kanchan ¹³⁵	2016	PVS	Editorial	India	0.64	Illegal
108	Karlsson ¹³⁶	2007	Cancer, Huntington's disease, dementia, CVA, severe brain damage, AIDS, advanced cardiovascular disorders (heart failure), Duchenne muscular atrophy, motor neuron disease (ALS), MS, spinal cord injury (SCI), paralysis	Original report	Sweden	0.93	Illegal
109	Kelly ¹³⁷	2009	Terminal phase of cancer	Original report	Australia	0.94	Legal
110	Kioko and Requena ¹³⁸	2018	Constant unbearable suffering without treatment	Editorial	Italy	0.88	Illegal
111	Kissane ¹³⁹	2000	Systemic phase of mycosis fungicides	Original report	Australia	0.94	Legal
112	Klein ¹⁴⁰	2004	Terminal phase of cancer, paralysis	Review	Germany	0.93	Illegal
113	Kompanje ¹⁴¹	2007	Locked-in syndrome, extensive cerebral hemorrhage	Original report	Netherlands	0.94	Legal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
114	Koopman ¹⁴²	2016	Terminal phase of cancer, advanced cardiovascular disorders, advanced respiratory disease	Original report	Netherlands	0.94	Legal
115	Kouwenhoven ¹⁴³	2013	Treatment-resistant depression, dementia, terminal phase of cancer, feeling lonely	Original report	Netherlands	0.94	Legal
116	Kouwenhoven ¹⁴⁴	2015	Dementia	Original report	Netherlands	0.94	Legal
117	Kouwenhoven ¹⁴⁵	2014	Terminal phase of cancer, treatment-resistant depression, dementia, feeling lonely	Original report	Netherlands	0.94	Legal
118	Kuschner ¹⁴⁶	2009	Terminal phase of cancer, extensive cerebral hemorrhage, chronic organ failure	Original report	USA	0.92	Illegal
119	Lavery ¹⁴⁷	2001	AIDS	Original report	Canada	0.92	Legal
120	Leenaars ¹⁴⁸	2001	Terminal phase of cancer, high probability for early death, constant unbearable suffering without treatment (incurable or irreversible condition)	Editorial	Ireland	0.95	Illegal
121	Legemaate ¹⁴⁹	2013	Dementia, cancer, being tired of life	Review	Netherlands	0.94	Legal
122	Levy ¹⁵⁰	2013	Locked-in syndrome, motor neuron disease (ALS), cancer, severe mental retardation, chronic schizophrenia	Original report	Israel	0.90	Illegal
123	Lewis ¹⁵¹	2009	Cancer, multimorbidity of physical conditions, motor neuron disease (ALS), MS	Review	UK	0.93	Illegal
124	Loewy ¹⁵²	2004	Terminal phase of cancer	Editorial	USA (California)	0.92	Legal
125	Lopez-Castroman ¹⁵³	2017	Constant unbearable suffering without treatment (incurable or irreversible condition)	Editorial	France	0.89	Illegal
126	Maessen ¹⁵⁴	2014	Motor neuron disease (ALS)	Original report	Netherlands	0.94	Legal
127	Maessen ¹⁵⁵	2010	Motor neuron disease (ALS), cancer, advanced cardiovascular disorders (heart failure)	Original report	Netherlands	0.94	Legal
128	Maggiore ¹⁵⁶	2005	Extensive cerebral hemorrhage	Original report	Italy	0.88	Illegal
129	Mak ¹⁵⁷	2003	Terminal phase of cancer	Editorial	Hong Kong	0.94	Illegal
130	Mak ¹⁵⁸	2005	AIDS	Original report	UK	0.93	Illegal
131	Malpas ¹⁵⁹	2013	Depression, uncontrollable continuous pain, personality disorders, generalized anxiety disorder, posttraumatic stress or anxiety, alcohol and substance abuse, comorbid psychiatric	Editorial	New Zealand	0.93	Legal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
			conditions, chronic schizophrenia, locked-in syndrome				
132	Manninen ¹⁶⁰	2006	Constant unbearable suffering without treatment (incurable or irreversible condition), chromosomal abnormalities, TEF, spina bifida, severe brain abnormalities, motor neuron disease (ALS)	Editorial	Netherlands	0.94	Legal
133	Marcoux ¹⁶¹	2005	Treatment-resistant depression, being tired of life, constant unbearable suffering without treatment, uncontrollable continuous pain	Original report	Netherlands	0.94	Legal
134	McGlade ¹⁶²	2000	Terminal phase of cancer, Parkinson's disease, MS, stroke, severe rheumatologic and musculoskeletal disorders (arthritis)	Original report	Ireland	0.94	Illegal
135	Miljkovic ¹⁶³	2013	Terminal phase of cancer	Review	USA (Texas)	0.92	Illegal
136	Miller ¹⁶⁴	2019	Alzheimer's disease	Original report	Netherlands	0.94	Legal
137	Miller ¹⁶⁵	2017	Parkinson's disease, stroke, Alzheimer's disease, terminal phase of cancer, multimorbidity of physical conditions, comorbid psychiatric conditions, CVA, Severe rheumatologic and musculoskeletal disorders	Review	Netherlands	0.94	Legal
138	Moody ¹⁶⁶	2003	Paralysis, motor neuron disease	Original report	UK	0.93	Illegal
139	Moynier-Vantieghem ¹⁶⁷	2010	Advanced cardiovascular disorders, advanced respiratory disease (COPD), Parkinson's disease, dementia, severe rheumatologic and musculoskeletal disorders (Arthritis), treatment-resistant depression	Original report	Switzerland	0.95	Legal
140	Mukhida ¹⁶⁸	2007	Cerebral palsy	Original report	Canada	0.92	Legal
141	Nair-Collins ²¹	2017	Anoxic encephalopathy, coma, multiple congenital abnormalities, deformities of the limb or head, multimorbidity of physical conditions	Review	USA (Florida)	0.92	Illegal
142	Nathanson ¹⁶⁹	2001	AIDS, terminal phase of cancer	Editorial	UK	0.93	Illegal
143	Nicolini ¹⁷⁰	2019	Treatment-resistant depression, personality disorders, posttraumatic stress disorder (PTSD), comorbid psychiatric conditions, anxiety disorder,	Original report	Belgium	0.93	Legal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
			multimorbidity of physical and psychological conditions, constant unbearable suffering without treatment, chronic pain disorders, severe rheumatologic and musculoskeletal disorders				
144	Norwood ¹⁷¹	2009	Terminal phase of cancer, stroke, advanced cardiovascular disorders	Original report	Netherlands	0.94	Legal
145	Novaković ¹⁷²	2009	Chronic organ failure	Original report	Bosnia	0.78	Illegal
146	Nuland ¹⁷³	2000	Terminal phase of cancer	Editorial	USA (New Haven)	0.92	Illegal
147	Oehmichen ¹⁷⁴	2000	AIDS, terminal phase of cancer, dementia, extremely premature infants, PVS, severe brain damage	Review	Germany	0.93	Illegal
148	Okishiro ¹⁷⁵	2009	Motor neuron disease	Original report	Japan	0.91	Illegal
149	Olić ¹⁷⁶	2016	Personality disorder, posttraumatic stress or anxiety, ASD	Review	France	0.89	Illegal
150	Onwuteaka-Philipsen ¹⁷⁷	2012	Terminal phase of cancer, advanced cardiovascular disorders	Original report	Netherlands	0.94	Legal
151	Onwuteaka-Philipsen ¹⁷⁸	2010	Terminal phase of cancer, motor neuron disease (ALS), treatment-resistant depression	Original report	Netherlands	0.94	Legal
152	Pacheco ¹⁷⁹	2003	Terminal phase of cancer	Original report	USA (Ohio)	0.92	Illegal
153	Pasman ¹⁸⁰	2009	Severe rheumatologic and musculoskeletal disorders (Rheumatism), Parkinson's disease, stroke, paralysis	Original report	Netherlands	0.94	Legal
154	Perreault ¹⁸¹	2019	Constant unbearable suffering without treatment (incurable or irreversible condition), be in an advanced state of irreversible decline in capability and quality of life, high probability for early death, advanced respiratory disease (COPD), severe rheumatologic and musculoskeletal disorders (advanced stage of erosive osteoarthritis, Sjogren's syndrome), ASD, posttraumatic stress or anxiety, major depression	Original report	Canada	0.92	Legal
155	Picard ¹⁸²	2019	Dementia	Original report	Belgium	0.93	Legal
156	Pope ¹⁸³	2016	Brain failure, coma, irreversible loss of circulatory, respiratory or brain function	Original report	USA (Minnesota)	0.92	Illegal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
157	Poredi ¹⁸⁴	2013	PVS, severe brain damage (brain death)	Original report	India	0.64	Illegal
158	Portacolone ¹⁸⁵	2019	Alzheimer's disease	Original report	Switzerland	0.95	Legal
159	Quill ¹⁸⁶	2018	Dementia	Editorial	Netherlands	0.94	Legal
160	Roscoe ¹⁸⁷	2001	AIDS, terminal phase of cancer, advanced cardiovascular disorders, advanced respiratory disease, MS, depression	Original report	USA (Florida)	0.92	Illegal
161	Ruijs ¹⁸⁸	2014	Constant unbearable suffering without treatment	Original report	Netherlands	0.94	Legal
162	Rurup ¹⁸⁹	2005	Terminal phase of cancer, motor neuron disease (ALS), advanced respiratory disease (COPD), advanced cardiovascular disorders (heart failure)	Original report	Netherlands	0.94	Legal
163	Rurup ¹⁹⁰	2005	Multimorbidity of physical conditions, terminal phase of cancer, advanced cardiovascular disorders, severe rheumatologic and musculoskeletal disorders (painful arthritis)	Original report	Netherlands	0.94	Legal
164	Salib ¹⁹¹	2001	Brain failure, terminal phase of cancer	Original report	UK	0.93	Illegal
165	Schäfer ¹⁹²	2006	Terminal phase of cancer	Editorial	Germany	0.93	Illegal
166	Schuermans ¹⁹³	2019	Dementia	Original report	Netherlands	0.94	Legal
167	Seear and Fraser ¹⁹⁴	2018	Addiction especially when all therapeutic measures have failed (alcohol and substance abuse)	Editorial	Australia	0.94	Legal
168	Shah ¹⁹⁵	2014	PVS, uncontrollable continuous pain, unbearable suffering without treatment (incurable or irreversible condition)	Editorial	Pakistan	0.56	Illegal
169	Sharp ¹⁹⁶	2012	Dementia	Editorial	USA (Ohio)	0.92	Illegal
170	Shaw ¹⁹⁷	2007	Terminal phase of cancer	Editorial	Australia	0.94	Legal
171	Shekhar ¹⁹⁸	2013	Severe brain damage, paralysis	Editorial	India	0.64	Illegal
172	Simillis ¹⁹⁹	2008	PVS	Review	UK	0.93	Illegal
173	Sinha ²⁰⁰	2012	Terminal phase of cancer, AIDS	Editorial	India	0.64	Illegal
174	Sleeboom-faulkner ²⁰¹	2006	Terminal phase of cancer, chronic organ failure, severe brain abnormalities or damage, Alzheimer's disease	Review	China	0.75	Illegal
175	Smets ²⁰²	2010	Terminal phase of cancer, MS	Original report	Belgium	0.93	Legal
176	Snijdwind ²⁰³	2014	Parkinson's disease, AIDS, dementia, terminal phase of cancer, MS,	Original report	Netherlands	0.94	Legal

(Continues)

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
			condition of old age, advanced cardiovascular disorders (heart failure), advanced respiratory disease (COPD)				
177	Sprung ²⁰⁴	2018	Being tired of life, terminal phase of cancer, unbearable suffering without treatment (incurable or irreversible condition)	Review	Israel	0.90	Illegal
178	Thienpont ²⁰⁵	2015	ASD, personality disorder, treatment-resistant depression, anorexia nervosa	Original report	Belgium	0.93	Legal
179	Thomas ²⁰⁶	2006	Cerebral palsy, chromosomal abnormalities, deformities of the limb or head, mental retardation, severe brain abnormalities, spina bifida	Review	Canada	0.92	Legal
180	Tomlinson ²⁰⁷	2015	Dementia	Original report	UK	0.93	Illegal
181	Tuffery-Wijne ²⁰⁸	2018	ASD, multimorbidity of physical conditions, multimorbidity of mental and physical conditions, comorbid psychiatric conditions, personality disorder, constant unbearable suffering without treatment, being abused in childhood	Original report	Netherlands	0.94	Legal
182	van Alphen ²⁰⁹	2010	Terminal phase of cancer, treatment-resistant depression, advanced cardiovascular disorders, advanced respiratory disease (COPD), MS, motor neuron disease (ALS) and muscular atrophy	Original report	Netherlands	0.94	Legal
183	van den Berg ¹²	2022	Feeling lonely, irreversible decline in capability and quality of life, old age, being tired of life, meaningless, fear of dying close ones, fear of losing independence	Original report	Netherlands	0.94	Legal
184	van Heest ²¹⁰	2009	Terminal phase of cancer	Original report	Netherlands	0.94	Legal
185	van Tol ²¹¹	2012	Terminal phase of cancer	Original report	Netherlands	0.94	Legal
186	van Wijngaarden ²¹²	2016	Treatment-resistant depression	Original report	Netherlands	0.94	Legal
187	Veldink ²¹³	2002	Motor neuron disease (ALS), sepsis	Original report	Netherlands	0.94	Legal
188	Verhagen ²¹⁴	2013	Multiple or severe congenital abnormalities, constant unbearable suffering without treatment, osteogenesis imperfect (type 2)	Review	Netherlands	0.94	Legal

TABLE 2 (Continued)

Row	First author	Publication year	Euthanasia items	Article type	Country or state	Human development index	Euthanasia legality
189	Verhagen ²¹⁵	2014	Severe epidermolysis bullosa	Review	Netherlands	0.94	Legal
190	Verhagen ²¹⁶	2005	Severe brain abnormalities or damages, spina bifida, extensive organ damage	Editorial	Netherlands	0.94	Legal
191	Vermeersch ²¹⁷	2002	Multi morbidity of physical conditions, partial paralysis	Editorial	Belgium	0.93	Legal
192	Vincent ²¹⁸	2006	Terminal phase of cancer, severe rheumatologic and musculoskeletal disorders (painful arthritis)	Original report	Belgium	0.93	Legal
193	Vink ²¹⁹	2016	Dementia	Editorial	Netherlands	0.94	Legal
194	Virik ²²⁰	2002	Multimorbidity of physical conditions	Original report	Australia	0.94	Legal
195	Voultos ²²¹	2014	Extremely premature infants, critically ill or disabled newborns, severe epidermolysis bullosa, osteogenesis imperfecta, spina bifida, severe lung hypoplasia, chromosomal abnormalities, severe brain abnormalities or damage	Review	Greece	0.88	Illegal
196	Waals ²²²	2018	Paralysis	Original report	Belgium	0.93	Legal
197	Wand ²²³	2016	Multimorbidity of physical conditions	Original report	Australia	0.94	Legal

4.2 | What this study adds and implications for practice and research

The most-reported item was constantly unbearable physical or mental suffering without definite treatment. It is defined as a "profoundly personal experience of an actual or perceived impending threat to the integrity or life of the person that has a considerable duration and a central place in the person's life."²²⁴ Another frequently mentioned condition was the high risk of early death, which was generally defined as having a life expectancy of less than 6 months despite available treatments.⁵⁰ Some general definitions consider patients to have a life expectancy of less than 6 months if they meet the nondisease-specific deterioration in clinical status, signs, symptoms, and laboratory results.²²⁵ This kind of evidence suggests that it does not matter which disease a patient may suffer from, what is important is that his condition must be intolerable and incurable with a high probability of near-death that depends on the legal requirements.²²⁵

Cancer is among the main reasons for euthanasia requests in recent years. One of the motivations is the fear of becoming dependent or being a burden. The extreme pain and discomfort they may experience in the end-stage condition can also trigger

euthanasia requests.^{187,226} Euthanasia is most commonly requested by cancer patients with a life expectancy of fewer than 6 months and when there is no therapeutic treatment to extend the life span.⁵⁰ Information demands about euthanasia procedures are frequent in the early stages of cancer if the patients are in excruciating pain, fatigue, or nausea.⁵⁰ Pain, fatigue, loss of dignity, and dependency were the most commonly stated causes of suffering among patients with cancer.¹⁵⁵ Overall, extreme pain, loss of autonomy, decreased ability to do meaningful activities, extreme pain or other disease-related symptoms, and worrying about the future are common reasons that make patients request assisted death.²²⁷

Psychiatric and mental illnesses contribute significantly to the health-related global burden.²²⁸ The use of euthanasia in psychiatric diseases is controversial, and infrequent.⁶⁴ Clinicians are less inclined to recommend or perform euthanasia for patients suffering from psychiatric diseases than for patients with life-threatening somatic illnesses.^{64,143,229} Verhofstadt et al. divided psychiatric patients' unbearable suffering into five categories: medically related suffering, intrapersonal suffering, interpersonal suffering, suffering connected to patients' role and interaction in society, and existential suffering.²²⁴ The most common reason for the rejection of euthanasia requests in psychiatric illnesses is the

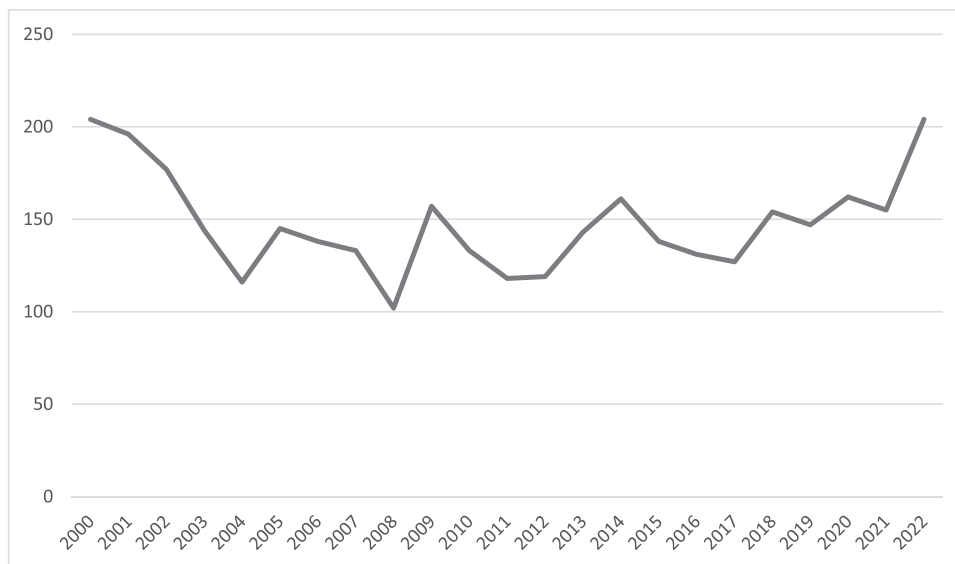


FIGURE 3 The time-trend of all publications about euthanasia.

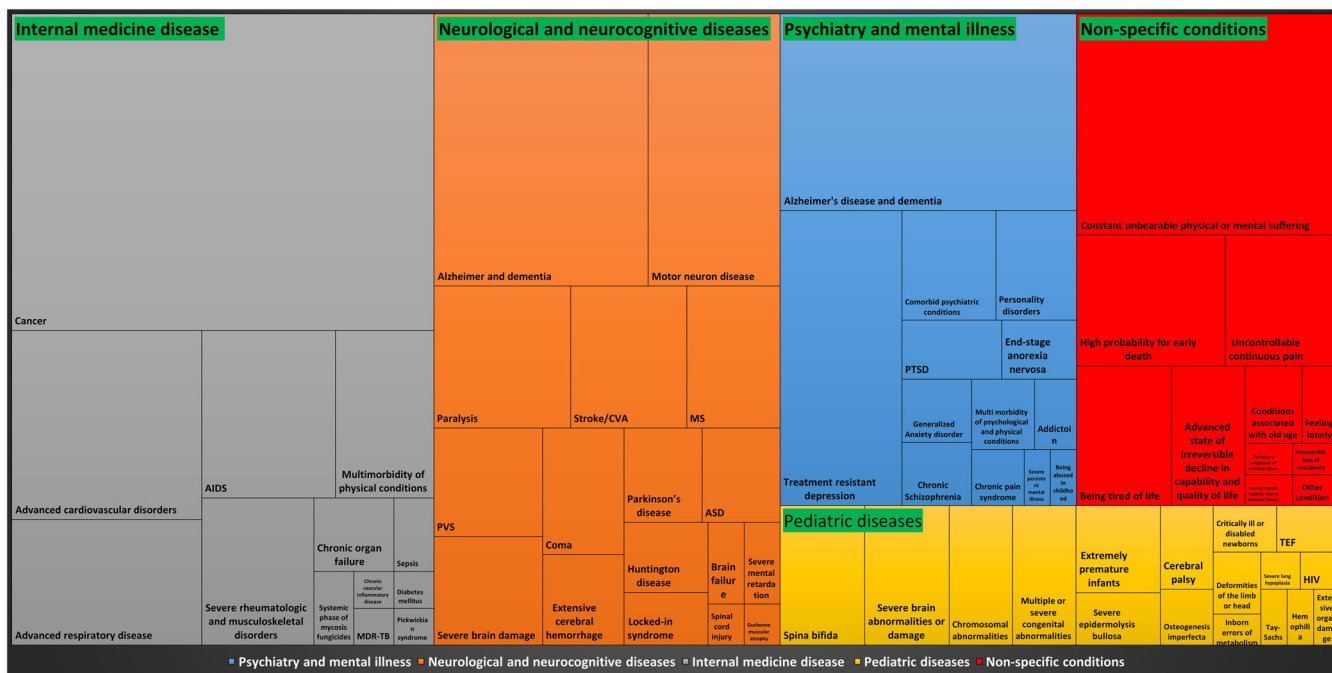


FIGURE 4 The frequency of publications reported euthanasia in all major categories (medicine disease, psychiatry and mental illnesses: psychiatry and mental illnesses: pediatric disease, and nonspecific conditions). AIDS, acquired immune deficiency syndrome; MDR-TB, multidrug-resistant tuberculosis; PTSD, posttraumatic stress or anxiety disorder. Neurological and neurocognitive diseases: ASD, autism spectrum disorder; MS, multiple sclerosis; PVS, persistent vegetative state; SCI, spinal cord injury/other conditions (meaningless, fear of Losing close ones, fear of losing autonomy).

concern about if the suffering is unbearable and if the request is well-considered.¹¹⁰ A study showed that 62% of Dutch psychiatrists who had received explicit euthanasia requests in their career course had refused them on at least one occasion; however, in some cases, psychiatrists referred patients who requested euthanasia to another physician following refusing their euthanasia request.¹⁰⁹

In some countries, euthanasia in terminally ill patients with neurological problems was requested or performed.^{230,231} Patients' quality of life can be severely impacted under these conditions. In the latter stages of various motor neuron illnesses, such as ALS, patients' capacity and quality of life can be drastically reduced, leading to hopelessness, depression, and anxiety.²³² These factors may increase the urge to die in people who are affected.

As demonstrated in the results, the frequency of euthanasia requests among children is lower than in adults. The issue of euthanasia is difficult to address in the pediatric field.²³³ Despite this difficulty, some countries have tried to legislate it during the last decade.²³⁴ Although there is no age limit in a few countries such as Belgium, in some nations, there is controversy over the age cutoff for children to be eligible.^{234,235} Some authors have stated that euthanasia could be received by infants under the age of 1 year to reduce the pain and suffering of severely ill newborns with fatal disorders.²³⁶ Also they claimed that children above the age of 12 can request euthanasia under certain circumstances.⁷¹ According to some authors, euthanasia should not be allowed under the age of 12 since children are unable to make suitable decisions about their lives.⁷¹ Another challenging issue about euthanasia request in children that is worth mentioning is that although, parents do not have an official right to request euthanasia for their children, some studies about end-of-life decisions reveal that some pediatricians receive an explicit request for euthanasia for children from their parents.^{237,238}

4.3 | Strengths and limitations

To the best of our knowledge, this study is the first that listed and categorized published records of euthanasia requests around the world into five broad groups besides reporting the frequency of each condition in each group. It facilitates informing scientists and researchers about the trends of euthanasia requests during different years and in different countries around the world.

This study presents some limitations. Only PubMed articles were selected due to the large number of available studies. Furthermore, we did not assess the legal status of each request in the countries they were made. The permissibility of the requests may vary depending on each country's legislation and policies. Additional updated research should be conducted to evaluate medical conditions for which euthanasia is accepted, and acceptance rates depending on the type of condition motivating the requests. In addition, the majority of articles were written in countries where euthanasia is legal, we may be biased towards the specific legislation of jurisdictions in which euthanasia is legal; however, we tried to minimize its impact through including documents (e.g., letters and commentary) written in countries where euthanasia is not legal.

Finally, it should be mentioned that some of our results may be rooted in publication biases.²³⁹ Cancer is a prevalent illness with a high impact on public opinion, probably facilitating the euthanasia demands.²⁴⁰ Indeed, both the general public and healthcare workers in many countries approve of the resort to euthanasia for cancer, especially in the terminal phases. On the contrary, some categories of euthanasia requests may be underrepresented because of contextual factors or the consequences of the illnesses.¹¹⁰ Patients suffering from psychiatric conditions may lack the emotional or volitional stability to navigate through the bureaucratic load of a euthanasia request.

5 | CONCLUSION

In summary, this study gathers and describes all conditions under which euthanasia has been requested or allowed. This information may serve as a roadmap for future research, clinical decision-making, and care policies.

AUTHOR CONTRIBUTIONS

Zahra Rahimian: Conceptualization; investigation; funding acquisition; writing—original draft; methodology; validation; visualization; writing—review and editing; software; formal analysis; data curation. **Leila Rahimian:** Investigation; funding acquisition; writing—original draft. **Jorge Lopez-Castroman:** Writing—original draft; writing—review and editing. **Jeyran Ostovarfar:** Investigation; funding acquisition. **Mohammad J. Fallahi:** Writing—review and editing. **Mohammad A. Nayeri:** Writing—original draft. **Hossein M. Vardanjani:** Writing—review and editing; writing—original draft; formal analysis; validation.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. All of the extracted data are represented within the manuscript.

TRANSPARENCY STATEMENT

The lead author Hossein Molavi Vardanjani affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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