

Review Article

Continuous Sedation (CS) Until Death: Mapping the Literature by Bibliometric Analysis

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Abstract

Context. Sedation at the end of life, regardless of the nomenclature, is an increasingly debated practice at both clinical and bioethical levels. However, little is known about the characteristics and trends in scientific publications in this field of study.

Objectives. This article presents a bibliometric analysis of the scientific publications on continuous sedation until death.

Methods. Four electronic databases (MEDLINE, PubMed, Embase, and PsycINFO[®]) were searched for the indexed material published between 1945 and 2011. This search resulted in bibliographic data of 273 published outputs that were analyzed using bibliometric techniques.

Results. Data revealed a trend of increased scientific publication from the early 1990s. Published outputs, diverse in type (comments/letters, articles, reviews, case reports, editorials), were widely distributed across 94 journals of varying scientific disciplines (medicine, nursing, palliative care, law, ethics). Most journals (72.3%) were classified under Medical and Health Sciences, with the *Journal of Pain and Symptom Management* identified as the major journal in the field covering 12.1% of the total publications. Empirical research articles, mostly of a quantitative design, originated from 17 countries. Although Japan and The Netherlands were found to be the leaders in research article productivity, it was the U.K. and the U.S. that ranked top in terms of the quantity of published outputs.

Conclusion. This is the first bibliometric analysis on continuous sedation until death that can be used to inform future studies. Further research is needed to refine controversies on terminology and ethical acceptability of the practice, as well as conditions and modalities of its use. *J Pain Symptom Manage* 2013;45:1073–1082. © 2013 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

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Key Words

Continuous sedation, end of life, bibliometric analysis

Introduction

Palliative sedation is the monitored use of medications intended to reduce levels of consciousness to relieve otherwise intractable suffering at the end of life in a manner that is ethically acceptable to the patient, family, and health care providers.¹ The practice has been described in a variety of ways including “terminal sedation,” “proportionate sedation,” or “palliative sedation to unconsciousness.”² For the purpose of this article, which maps the literature in the field by bibliometric analysis, we prefer to use the descriptive term “continuous sedation (CS) until death.”

The reported frequency of CS until death in the palliative care literature reveals considerable variation in prevalence, indications, and clinical practices.³ Prevalence rates in terminally ill patients vary from 5% to 52%^{4–11} depending on the type of setting studied and the definitions applied.^{12–15} The main indications for adopting CS until death include both physical (dyspnea, pain, and agitated delirium)^{4,5,7} and nonphysical symptoms (existential suffering and psychological distress).^{16–18} There is much debate concerning the conditions under which this practice is adequately performed^{19,20} and whether and to what extent it is medically indicated.^{19,21–24} The variation in techniques used to induce and maintain CS until death (sedating drugs, artificial nutrition, and hydration) has generated much discussion about conditions and modalities of its use.^{19,20,25}

An important aspect of the debate relates to the acceptability of the practice of CS until death on an ethical level. Despite the distinct differences in intentions and outcomes,²⁶ associations have been drawn between the practice of CS and euthanasia, with the former considered by some as the moral equivalent of euthanasia or euthanasia in disguise.²¹

The palliative care literature has produced a series of definitions and guidelines to account for such variations.^{19,27–29} Attempts have been made to create an ethical framework and a common language¹ to enable


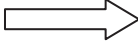
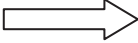
comparability among data from diverse settings.²⁰ This article aims to present a bibliometric analysis highlighting the geographical distribution and the temporal trends of articles published between 1945 and 2011. It also will identify major journals, disciplinary fields, participating authors, research methodologies, and country of research of such publications.

Methods

Data Sources and Search Strategy

A bibliometric review process was adopted to analyze the published output of CS until death during the period 1945–2011. Electronic databases searched comprised MEDLINE, PubMed, Embase, and PsycINFO®. A list of key words (initial classification) was developed by the first author with the help of a subject librarian using the thesaurus of Medical Subject Headings (MeSH). Preliminary searches conducted using this list showed that, although highly sensitive, this method lacked specificity mainly because of the problematic nature of a commonly accepted definition for sedation. For instance, “deep sedation,” although a MeSH term, was found not to be used consistently or in accordance with the other parameters set for this review, that is, continuous sedation and sedation until death. In consultation with the coauthors, the strategy was refined using existing publications on CS until death, which were manually scanned for key words. Key words that occurred at least twice were included in the final search. The final search was performed on October 26, 2011, using a mixture of MeSH terms and key words joined together by the Boolean operators (AND, OR). Each MeSH term was combined with either one or two of the key words shown in Table 1, applying AND for rows and OR for columns. Records retrieved were exported to Endnote. No critical appraisal of the content of these records was deemed necessary as the purpose of this article was to map the literature by bibliometric analysis.

Table 1
MeSH Terms, Key Words, and Boolean Operators Used for Final Search

MeSH Terms		Key Words			
OR 	Palliative sedation Terminal sedation Total sedation Palliative sedation therapy Palliative therapy Continuous sedation End-of-life sedation Deep sedation	AND 	Refractory Restlessness Symptom control Symptom relief Dying Death End-of-life	AND 	Slow euthanasia Artificial hydration Artificial nutrition Assisted suicide

MeSH = Medical Subject Headings.

Inclusion and Exclusion Criteria

Criteria relating to the objectives of the article, such as participant criteria, outcome measures, language, and time frame, were established and used to guide the literature search. These are detailed in Table 2.

Indices of Research Productivity

Records were analyzed to identify the distribution of the following indicators:

1. published outputs (biannually);
2. type of published outputs;
3. journal of publication;
4. journal subject (sub)fields; note that the definition of (sub)fields was based on a classification of scientific journals into categories developed by the Institute for Scientific Information/Thomson Scientific, which, although not perfect, provides a clear and “fixed” consistent field

definition suitable for the purposes of this bibliometric analysis;

5. authorship;
6. research activity vs. research productivity (per country); and
7. research methodologies.

Indicators 1–5 were applied to the total number of records retrieved, whereas indicators 6 and 7 were applied only to empirical research articles.

Results

A total number of 7065 records were retrieved. After exclusion of duplicates (957), an overall total of 6108 unique records remained, and all corresponding abstracts were manually reviewed. A final number of 273 published records met the inclusion criteria reported in the Methods section and were further evaluated (Appendix, available online at jpsmjjournal.com).

Published Outputs

A biennial analysis of published outputs between 1945 and 1990 revealed only one record published in 1963. A growing rate in publications was visible from the beginning of the 1990s, with two records retrieved for the period 1990–1991. Ten years after that (2000–2001), the records retrieved were more than 10 times as many (25 records), and the period between 2010 and October 26, 2011, was found to be the most productive (63 records). The constant growth observed in published outputs was interrupted by slight falls recorded for the periods 1992–1993 (one record) and 2006–2007 (33 records). Fig. 1 illustrates this distribution.

Table 2
Inclusion and Exclusion Criteria for Search

Included	Excluded
Patients: Adults	Patients: Children/adolescents
With advanced incurable disease	With early-stage or curable disease
Actively dying (i.e., death expected in hours or days)	Expected to survive
Focus on: CS	Focus on: Intermittent mild/moderate or conscious sedation
CS at the end of life	Pharmacokinetics of CS
Published output: Articles	Published output: Book chapters
Published in English	Non-English language
Published between January 1945 and October 2011	

CS = continuous sedation.

Continuous sedation until death: literature search

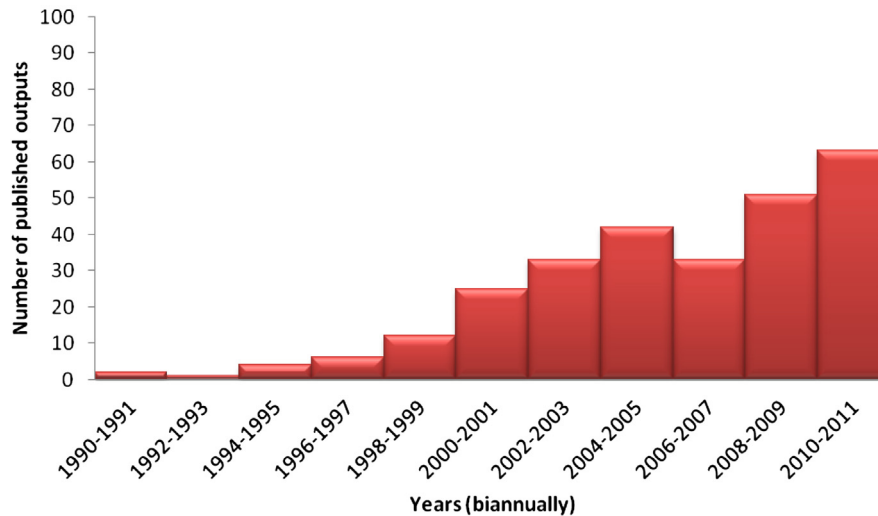


Fig. 1. Distribution of published outputs biannually.

Type of Published Outputs

Most of the published outputs retrieved were comments or letters to the editor (26.7%) or empirical research articles (23.8%), followed by conceptual/theoretical articles (18.7%), reviews (12.8%), case reports (8.0%), and editorials (5.0%). The remaining 4.4% comprised five news items, three legal cases, three patient handouts, and one brief report. Table 3 shows the distribution of published outputs according to genre.

Journal of Publication

A total number of 94 periodical titles were found, representing a wide range of scientific disciplines. The *Journal of Pain and Symptom Management* was the most frequent title, with 33 publications, followed by the *Journal of*

Palliative Medicine (17), *The American Journal of Bioethics: AJOB* (14), the *Annals of Internal Medicine* (14), the *American Journal of Hospice & Palliative Care* (14), the *Archives of Internal Medicine* (11), and *Palliative Medicine* (11). The top 12 journals in which publications were found are shown in Table 4. We included 12 rather than 10 journals because three of them shared the same number of publications. Published

Table 3
Type of Published Outputs

Type of Published Outputs	Number	% (N= 273)
Comments/letters	73	26.7
Empirical research articles	65	23.8
Conceptual/theoretical articles	51	18.7
Reviews	35	12.8
Case reports	22	8.0
Editorials	15	5.5
News items	5	1.8
Legal cases	3	1.1
Patient handout	3	1.1
Brief reports	1	0.4
Total	273	100.0

Table 4
Top 12 Journals in Which Articles Were Published

Name of the Journal	Number of Articles	% (N= 273)
<i>Journal of Pain and Symptom Management</i>	33	12.1
<i>Journal of Palliative Medicine</i>	17	6.2
<i>American Journal of Bioethics: AJOB</i>	14	5.1
<i>Annals of Internal Medicine</i>	14	5.1
<i>American Journal of Hospice & Palliative Care</i>	14	5.1
<i>Palliative Medicine</i>	11	4.0
<i>Archives of Internal Medicine</i>	11	4.0
<i>British Medical Journal</i>	9	3.3
<i>Journal of Palliative Care</i>	8	2.9
<i>Journal of Medical Ethics</i>	7	2.6
<i>International Journal of Palliative Nursing</i>	7	2.6
<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>	7	2.6
Total	152	55.6

outputs in these journals accounted for more than 50% of the total production.

Journal Subject Fields

Almost 73% of the periodicals identified were found to belong to Health & Medical Sciences. Medical titles (medicine, oncology, anesthesiology, critical care medicine, clinical neurology, psychiatry) outnumbered other health-related titles (health care sciences and services, nursing, primary health care, geriatrics and gerontology, biology) (44 and 24, respectively). In contrast, only 27.6% of the periodicals belonged to Arts & Social Sciences, with articles focusing on law and ethics. Fig. 2 illustrates the distribution of journals according to subject fields.

Authorship

Fifty-six percent of the published outputs retrieved were coauthored. Forty-three percent were produced by a single author, and in the remaining 1%, no author was mentioned.

Research Activity vs. Research Productivity (Per Country/Empirical Research Articles)

The empirical research articles came from 17 countries, indicating an international spread in the research on palliative sedation. The U.S. was found to be the dominant country in

research publications (25) followed by the U.K. (22), accounting for 72% of the total number of published outputs retrieved. The Netherlands ranked third with six publications, although it was the country where most studies were conducted (14) followed by Japan (13). European countries as a group ranked first both in research activity (34) and research publications (35). Ten countries were found to have contributed to research activity; the results of this research, however, were not published in national journals of these countries. Major continents such as Asia, Australia, and South America were shown to have no publication records, and Africa had only one recorded publication. Fig. 3 illustrates the distribution of research activity vs. research productivity per country.

Research Methodologies (Empirical Research Articles)

Most empirical research articles (76.93%) used quantitative methods, mainly descriptive statistics to analyze their results, whereas only seven were descriptive studies involving qualitative (content) analysis. Four reports used mixed methods, two reports involved secondary analyses of pre-existing data, and two were clinical trials. Table 5 illustrates the different types of research methodologies used by each empirical research article.

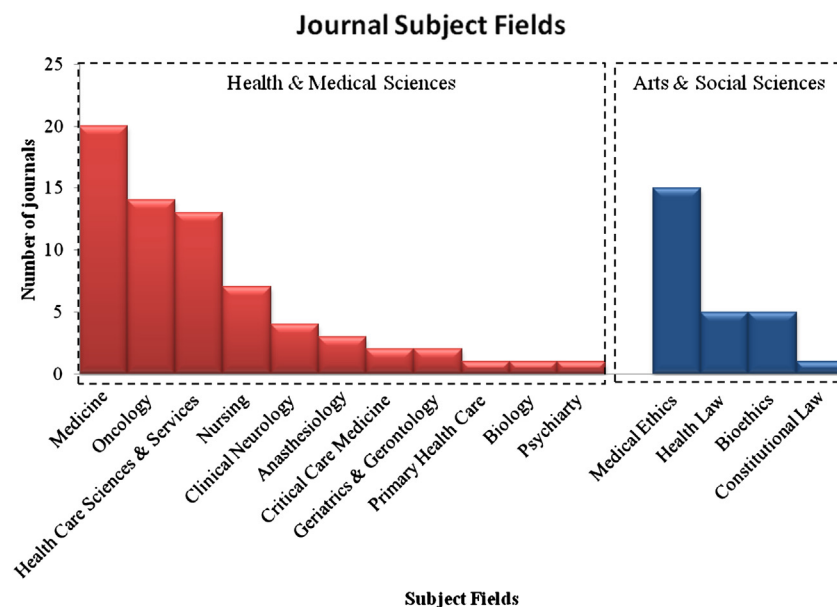


Fig. 2. Distribution of journals according to subject fields.

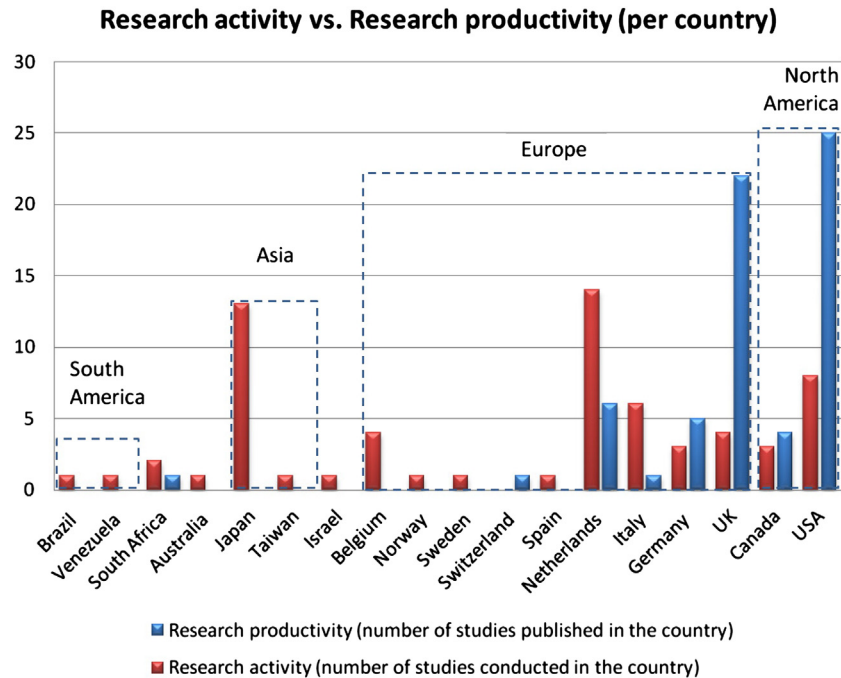


Fig. 3. Distribution of research activity vs. research productivity (per country).

Discussion

This bibliometric analysis has found that most research outputs on CS commenced at the beginning of the 1990s.^{30,31} There was evidence of some research activity before this, with the identification of a study in 1963 on a group of patients with severe chronic asthma at the end of life, which referred to the practice as “sedation” in status asthmaticus.³² This indicates that the whole concept of sedation for patients nearing death existed in the literature long before research increased in the 1990s. Still, there seems to be no plausible explanation to account for the gap in publications observed between 1963 and 1990.

Table 5

Types of Research Methodologies

Classification	Number of Empirical Research Articles	Percentage of Total Empirical Research Articles (n = 65)
Quantitative methods	50	76.93
Qualitative/descriptive studies	7	10.77
Mixed methods	4	6.16
Secondary analysis	2	3.07
Clinical trials	2	3.07
Total	65	100

The next article on CS was published in 1990 by Ventafridda et al. This focused on terminally ill cancer patients.⁴ This disease can generate the kind of symptoms (i.e., intractable and intolerable) that, despite aggressive efforts, cannot be controlled by any other means, allowing for CS until death to be considered. In such cases, the literature suggests that CS until death might act as an option of last resort.^{19,21,33}

However, 1991 was the year that initiated the debate that still perseveres on terms and definitions when the first review³⁴ was published, and attempts were made to develop a more precise name for the use of sedation for symptom relief in terminally ill patients.^{27,35–37} The failure of experts to reach a consensus with regard to a commonly accepted term led to greater confusion, and the adoption of alternative ways of describing sedation in terminally ill patients has raised a series of questions about the legality and the morality of the practice.^{38,39}

Such critical issues of law and ethics in combination with the increasing rates of cancer all over the world⁴⁰ might explain the rapid increase in research in the 1990s, when people from a wide range of scientific disciplines (medicine, nursing, palliative care, law, ethics)

started investigating, reporting, and publishing in the field.

Most of the published outputs retrieved were classified as letters or comments to editors sent either as correspondence or replies to preexisting publications, thus confirming the controversies over the practice. The ethical and legal considerations raised were viewed through conceptual/theoretical articles, legal cases, and review reports attempting to describe palliative sedation, give directions, provide guidelines, or develop frameworks for its use.^{1,6,41,42} The significance of the topic is highlighted through the ongoing research activity observed worldwide.^{11,43–48}

Our analysis revealed an international spread in the research of CS until death. Considering the different size and availability of resources among countries, some areas of excellence emerged. Japan and The Netherlands were found to have the best evidence of research productivity, whereas the U.S. and the U.K. ranked top in terms of the quantity of published articles. However, cautious interpretation is recommended because only articles written in English were retrieved and used in this analysis.

Another interesting finding had to do with the number and the subject fields of the journals in which articles were published. Ninety-four journal titles from diverse settings were identified, indicating the differing perspectives and disciplines involved in the practice of CS until death,^{2,49–51} which confirm the multidimensional aspect of the debate. The variation in subject fields attests to the range of scientific disciplines covered, with medicine being the leading discipline.

In relation to research methodologies used for empirical research articles, a dominance of quantitative methods was observed, with descriptive statistics used to analyze data collected through surveys, questionnaires, interviews, and focus groups. Study designs varied between prospective^{4,11,52–55} and retrospective.^{7,12,13,56–59} The sensitive nature of the topic and the restricted amount of time available to monitor and record sedated patients could account for the limited number of clinical trials found in our analysis.^{44,60}

Finally, this analysis showed no major differences in the number of participating authors per publication. Coauthored contributions

were observed to outnumber single-authored ones but not to the extent one might expect considering the diverse scientific nature of the topic and the varied backgrounds of participating authors. A possible explanation for such an observation might be the type of documents retrieved being mostly letters, comments, brief reports, and news items that could be produced by a single individual and less research studies or clinical trials that might require more people to be involved.

This bibliometric analysis is subject to a series of limitations that should be addressed and accounted for in further research. The electronic search was limited to four databases (MEDLINE, Embase, PubMed, and PsycINFO), not all of which go back to 1945, which was set as the starting point for this study. MEDLINE, Embase, and PsycINFO are subscription based, and PubMed is freely available to everyone with an Internet browser; however, in many countries, this is still a formidable barrier to overcome. English was a priori set as a limit to our search. This could be an indication of the dominance of American and British authors writing from the perspectives of resource-rich regions, leaving out those countries that have a tradition of publishing in their own language journals. It is possible that some countries more than others, that is, Japan and The Netherlands (ranked top in terms of research productivity), suffered particularly in this respect. This analysis did not include manual searching or any studies published in the grey literature.

The purpose of this article was to present a bibliometric analysis that would enable the literature on CS until death to be mapped. The analysis has provided a fair representation of the general trends regarding the evidence and a baseline with which to compare future studies. The findings will feed into a historical narrative review of the terms and definitions of CS until death and the way they have changed over time.

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References

1. Cherny NI, Radbruch L. European Association for Palliative Care (EAPC) recommended framework for the use of sedation in palliative care. *Palliat Med* 2009;23:581–593.
2. Seymour J, Rietjens J, Brown J, et al. The perspectives of clinical staff and bereaved informal care-givers on the use of continuous sedation until death for cancer patients: the study protocol of the UNBIASED study. *BMC Palliat Care* 2011;10:1–8.
3. Hauser K, Walsh D. Palliative sedation: welcome guidance on a controversial issue. *Palliat Med* 2009;23:577–579.
4. Ventafridda V, Ripamonti C, De Conno F, Tamburini M, Cassileth BR. Symptom prevalence and control during cancer patients' last days of life. *J Palliat Care* 1990;6:7–11.
5. Fainsinger R, Miller MJ, Bruera E, Hanson J, Maceachern T. Symptom control during the last week of life on a palliative care unit. *J Palliat Care* 1991;7:5–11.
6. Cherny NI, Portenoy RK. Sedation in the management of refractory symptoms: guidelines for evaluation and treatment. *J Palliat Care* 1994;10:31–38.
7. Morita T, Inoue S, Chihara S. Sedation for symptom control in Japan: the importance of intermittent use and communication with family members. *J Pain Symptom Manage* 1996;12:32–38.
8. Fainsinger RL. Use of sedation by a hospital palliative care support team. *J Palliat Care* 1998;14:51–54.
9. Chater S, Viola R, Paterson J, Jarvis V. Sedation for intractable distress in the dying—a survey of experts. *Palliat Med* 1998;12:255–269.
10. Hardy J. Sedation in terminally ill patients. *Lancet* 2000;356:1866–1867.
11. Chiu TY, Hu WY, Lue BH, Cheng SY, Chen CY. Sedation for refractory symptoms of terminal cancer patients in Taiwan. *J Pain Symptom Manage* 2001;21:467–472.
12. Stone P, Phillips C, Spruyt O, Waight C. A comparison of the use of sedatives in a hospital support team and in a hospice. *Palliat Med* 1997;11:140–144.
13. Fainsinger RL, Waller A, Bercovici M, et al. A multicentre international study of sedation for uncontrolled symptoms in terminally ill patients. *Palliat Med* 2000;14:257–265.
14. Muller-Busch HC, Andres I, Jehser T. Sedation in palliative care—a critical analysis of 7 years experience. *BMC Palliat Care* 2003;2:1–9.
15. Sykes N, Thorns A. Sedative use in the last week of life and the implications for end-of-life decision making. *Arch Intern Med* 2003;163:341–344.
16. Morita T, Tsunoda J, Inoue S, Chihara S. Terminal sedation for existential distress. *Am J Hosp Palliat Care* 2000;17:189–195.
17. Morita T. Palliative sedation to relieve psycho-existential suffering of terminally ill cancer patients. *J Pain Symptom Manage* 2004;28:445–450.
18. Shaiova L. Case presentation: “terminal sedation” and existential distress. *J Pain Symptom Manage* 1998;16:403–404.
19. De Graeff A, Dean M. Palliative sedation therapy in the last weeks of life: a literature review and recommendations for standards. *J Palliat Med* 2007;10:67–85.
20. Goncalves JA. Sedation and expertise in palliative care. *J Clin Oncol* 2006;24:44–45.
21. Quill TE, Lo B, Brock DW. Palliative options of last resort: a comparison of voluntarily stopping

- eating and drinking, terminal sedation, physician-assisted suicide, and voluntary active euthanasia. *JAMA* 1997;278:2099–2104.
22. Quill TE, Lee BC, Nunn S. Palliative treatments of last resort: choosing the least harmful alternative. University of Pennsylvania Center for Bioethics Assisted Suicide Consensus Panel. *Ann Intern Med* 2000;132:488–493.
23. Rousseau P. Existential suffering and palliative sedation: a brief commentary with a proposal for clinical guidelines. *Am J Hosp Palliat Care* 2001;18:151–153.
24. Morita T, Tei Y, Inoue S. Ethical validity of palliative sedation therapy. *J Pain Symptom Manage* 2003;25:103–105.
25. Hasselaar JGJ, Reuzel RPB, Verhagen SC, et al. Improving prescription in palliative sedation: compliance with Dutch guidelines. *Arch Intern Med* 2007;167:1166–1171.
26. Douglas CD, Kerridge IH, Ankeny RA. Narratives of ‘terminal sedation’ and the importance of the intention-foresight distinction in palliative care practice. *Bioethics* 2013;27:1–11.
27. Morita T, Tsuneto S, Shima Y. Definition of sedation for symptom relief: a systematic literature review and a proposal of operation criteria. *J Pain Symptom Manage* 2002;24:447–453.
28. Cowan JD, Palmer TW. Practical guide to palliative sedation. *Curr Oncol Rep* 2002;4:242–249.
29. Eisenclas JH. Palliative sedation. *Curr Opin Support Palliat Care* 2007;1:207–212.
30. Claessens P, Menten J, Schotsmans P, Broeckkaert B. Palliative sedation: a review of the research literature. *J Pain Symptom Manage* 2008;36:310–333.
31. Olsen ML, Swetz KM, Mueller PS. Ethical decision making with end-of-life care: palliative sedation and withholding or withdrawing life-sustaining treatments. *Mayo Clin Proc* 2010;85:949–954.
32. Neder GA, Derbes VJ, Carpenter CL, Ziskind MM. Death in status asthmaticus. Role of sedation. *Dis Chest* 1963;44:263–267.
33. Lo B, Rubinfeld G. Palliative sedation in dying patients: “we turn to it when everything else hasn’t worked”. *JAMA* 2005;294:1810–1816.
34. Enck RE. Drug-induced terminal sedation for symptom control. *Am J Hosp Palliat Care* 1991;8:3–5.
35. Peruselli C, Di Giulio P, Toscani F, et al. Home palliative care for terminal cancer patients: a survey on the final week of life. *Palliat Med* 1999;13:233–241.
36. Krakauer EL, Penson RT, Truog RD, et al. Sedation for intractable distress of a dying patient: acute palliative care and the principle of double effect. *Oncologist* 2000;5:53–62.
37. Beel A, McClement SE, Harlos M. Palliative sedation therapy: a review of definitions and usage. *Int J Palliat Nurs* 2002;8:190–199.
38. Alpers A, Lo B. The Supreme Court addresses physician-assisted suicide. Can its rulings improve palliative care? *Arch Fam Med* 1999;8:200–205.
39. Raus K, Sterckx S, Mortier F. Is continuous sedation at the end of life an ethically preferable alternative to physician-assisted suicide? *Am J Bioeth* 2011;11:32–40.
40. World Health Organization. World cancer report 2008. Lyon, France: International Agency for Research on Cancer, 2008.
41. Morita T, Bito S, Kurihara Y, Uchitomi Y. Development of a clinical guideline for palliative sedation therapy using the Delphi method. *J Palliat Med* 2005;8:716–729.
42. Verkerk M, van Wijlick E, Legemaate J, de Graeff A. A national guideline for palliative sedation in the Netherlands. *J Pain Symptom Manage* 2007;34:666–670.
43. Fainsinger RI, Landman W, Hoskings M, Bruera E. Sedation for uncontrolled symptoms in a South African hospice. *J Pain Symptom Manage* 1998;16:145–152.
44. Morita T, Chinone Y, Ikenaga M, et al. Efficacy and safety of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan. *J Pain Symptom Manage* 2005;30:320–328.
45. Blondeau D, Dumon S, Roy L, Martineau I. Attitudes of Quebec doctors toward sedation at the end of life: an exploratory study. *Palliat Support Care* 2009;7:331–337.
46. Rietjens JA, van Zuylen L, van Veluw H, et al. Palliative sedation in a specialized unit for acute palliative care in a cancer hospital: comparing patients dying with and without palliative sedation. *J Pain Symptom Manage* 2008;36:228–234.
47. Mercadante S, Intravaia G, Villari P, et al. Controlled sedation for refractory symptoms in dying patients. *J Pain Symptom Manage* 2009;37:771–779.
48. Alonso-Babarro A, Varela-Cerdeira M, Torres-Vigil I, Rodriguez-Barrientos R, Bruera E. At-home palliative sedation for the end-of-life cancer patients. *Palliat Med* 2010;24:486–492.
49. Blondeau D, Roy L, Dumont S, Godin G, Martineau I. Physicians’ and pharmacists’ attitudes toward the use of sedation at the end of life: influence of prognosis and type of suffering. *J Palliat Care* 2005;21:238–245.
50. Hasselaar JGJ, Reuzel RPB, van den Muijsenbergh METC, et al. Dealing with delicate issues in continuous deep sedation. Varying practices among Dutch medical specialists, general

- practitioners, and nursing home physicians. *Arch Intern Med* 2008;168:537–543.
51. Inghelbrecht E, Bilsen J, Mortier F, Deliens L. Continuous deep sedation until death in Belgium: a survey among nurses. *J Pain Symptom Manage* 2011;41:870–879.
52. Morita T, Tsunoda J, Inoue S, Chihara S. Do hospice clinicians sedate patients intending to hasten death? *J Palliat Care* 1999;15:20–23.
53. Cameron D, Bridge D, Blitz-Lindeque J. Use of sedation to relieve refractory symptoms in dying patients. *S Afr Med J* 2004;94:445–449.
54. Kaldjian LC, Jekel JF, Bernene JL, et al. Internists' attitudes towards terminal sedation in end of life care. *J Med Ethics* 2004;30:499–503.
55. Simon A, Kar M, Hinz J, Beck D. Attitudes towards terminal sedation: an empirical survey among experts in the field of medical ethics. *BMC Palliat Care* 2007;6:4.
56. Kohara H, Ueoka H, Takeyama H, Murakami T, Morita T. Sedation for terminally ill patients with cancer with uncontrollable physical distress. *J Palliat Med* 2005;8:20–25.
57. Rietjens JAC, van der Heide A, Vrakking AM, et al. Physician reports of terminal sedation without hydration or nutrition for patients nearing death in the Netherlands. *Ann Intern Med* 2004;141:178–185.
58. Miccinesi G, Rietjens JAC, Deliens L, et al. Continuous deep sedation: physicians' experiences in six European countries. *J Pain Symptom Manage* 2006;31:122–129.
59. van der Heide A, Onwuteaka-Philipsen BD, Rurup ML, et al. End-of-life practices in the Netherlands under the Euthanasia Act. *N Engl J Med* 2007;356:1957–1965.
60. Morita T, Chinone Y, Ikenaga M, et al. Ethical validity of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan. *J Pain Symptom Manage* 2005;30:308–311.

Appendix

Published Outputs Included in the Analysis

Author(s), Year of Publication, Title	Journal of Publication
1. Neder et al., 1963, Death in status asthmaticus: role of sedation	<i>Diseases of the Chest</i>
2. Ventafridda et al., 1990, Symptom prevalence and control during cancer patients' last days of life	<i>Journal of Palliative Care</i>
3. Enck, 1991, Drug-induced terminal sedation for symptom control	<i>American Journal of Hospice & Palliative Care</i>
4. Enck, 1992, The last few days	<i>American Journal of Hospice & Palliative Care</i>
5. Cherny and Portenoy, 1994, Sedation in the management of refractory symptoms: guidelines for evaluation and treatment	<i>Journal of Palliative Care</i>
6. Craig, 1994, Is sedation without hydration or nourishment in terminal care lawful?	<i>The Medico-legal Journal</i>
7. Craig, 1994, On withholding artificial nutrition and hydration in the terminally ill: has palliative medicine gone too far?	<i>Journal of Medical Ethics</i>
8. Gillon, 1994, Palliative care ethics: non-provision of artificial nutrition and hydration to terminally ill sedated patients	<i>Journal of Medical Ethics</i>
9. Billings and Block, 1996, Slow euthanasia	<i>Journal of Palliative Care</i>
10. Craig, 1996, On withholding artificial hydration and nutrition from terminally ill sedated patient. The debate continuous	<i>Journal of Medical Ethics</i>
11. Morita et al., 1996, Sedation for symptom control in Japan	<i>Journal of Pain and Symptom Management</i>
12. Mount, 1996, Morphine drips, terminal sedation and slow euthanasia: definitions and facts, not anecdotes	<i>Journal of Palliative Care</i>
13. Rousseau, 1996, Terminal sedation in the care of dying patients	<i>Archives of Internal Medicine</i>
14. Orentlicher, 1997, The Supreme Court and terminal sedation: rejecting assisted suicide, embracing euthanasia	<i>Hastings Constitutional Law Quarterly</i>
15. Chater et al., 1998, Sedation for intractable distress in the dying—a survey of experts	<i>Palliative Medicine</i>
16. Cherny, 1998, Commentary: sedation in response to refractory existential distress: walking the fine line	<i>Journal of Pain and Symptom Management</i>
17. Fainsinger et al., 1998, Sedation for uncontrolled symptoms in a South African hospice	<i>Journal of Pain and Symptom Management</i>
18. Lynn, 1998, Terminal sedation	<i>The New England Journal of Medicine</i>
19. Rosen, 1998, Commentary: a case of terminal sedation in the family	<i>Journal of Pain and Symptom Management</i>
20. Shaiova, 1998, Case presentation: terminal sedation and existential distress	<i>Journal of Pain and Symptom Management</i>
21. Smith, 1998, Terminal sedation as palliative care: revalidating a right to good death	<i>Cambridge Quarterly of Healthcare Ethics: CQ: The International Journal of Healthcare Ethics Committees</i>
22. Tonelli, 1998, Terminal sedation	<i>The New England Journal of Medicine</i>
23. Alpers and Lo, 1999, The Supreme Court addresses physician-assisted suicide. Can its rulings improve palliative care?	<i>Archives of Family Medicine</i>
24. Hallenbeck, 1999, Terminal sedation for intractable distress	<i>Western Journal of Medicine</i>
25. Morita et al., 1999, The decision making process in sedation for symptom-control in Japan	<i>Palliative Medicine</i>
26. Morita et al., 1999, Do hospice clinicians sedate patients intending to hasten death?	<i>Journal of Palliative Care</i>
27. Enck, 2000, Terminal sedation	<i>American Journal of Hospice & Palliative Care</i>
28. Fainsinger et al., 2000, A multicentre international study of sedation for uncontrolled symptoms in terminally ill patients	<i>Palliative Medicine</i>
29. Hallenbeck, 2000, Terminal sedation: ethical implications in different situations	<i>Journal of Palliative Medicine</i>
30. Hardy, 2000, Sedation in terminally ill patients	<i>Lancet</i>
31. Krakauer, 2000, Responding to intractable terminal suffering	<i>Annals of Internal Medicine</i>

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Author(s), Year of Publication, Title	Journal of Publication
32. Krakauer et al., 2000, Sedation for intractable distress of a dying patient: acute palliative care and the principle of double effect	<i>The Oncologist</i>
33. Morita et al., 2000, Terminal sedation for existential distress	<i>American Journal of Hospice & Palliative Care</i>
34. Quill and Byock, 2000, Responding to intractable terminal suffering: the role of terminal sedation and voluntary refusal of food and fluids	<i>Annals of Internal Medicine</i>
35. Quill and Byock, 2000, Responding to intractable terminal suffering	<i>Annals of Internal Medicine</i>
36. Rousseau, 2000, The ethical validity and clinical experience of palliative sedation	<i>Mayo Clinic Proceedings. Mayo Clinic</i>
37. Sulmasy et al., 2000, Responding to intractable terminal suffering	<i>Annals of Internal Medicine</i>
38. Tannsjö, 2000, Terminal sedation—a possible compromise in the euthanasia debate?	<i>Bulletin of Medical Ethics</i>
39. Wein, 2000, Sedation in the immediately dying patient	<i>Oncology</i>
40. Cantor, 2001, Glucksberg, the putative right to adequate pain relief and death with dignity	<i>Journal of Health Law</i>
41. Chiu et al., 2009, Sedation for refractory symptoms of terminal cancer patients in Taiwan	<i>Journal of Pain and Symptom Management</i>
42. Cowan and Walsh, 2001, Terminal sedation in palliative medicine—definition and review of the literature	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
43. Emanuel, 2001, Ethics and pain management: an introductory overview	<i>Pain Medicine: the official journal of the American Academy of Pain Medicine</i>
44. Gauthier, 2001, Active voluntary euthanasia, terminal sedation and assisted suicide	<i>The Journal of Clinical Ethics</i>
45. Loewy, 2001, Terminal sedation, self starvation and orchestrating the end of life	<i>Archives of Internal Medicine</i>
46. Morita et al., 2001, Proposed definitions for terminal sedation	<i>Lancet</i>
47. Morita et al., 2001, Effects of high dose opioids and sedatives on survival in terminally ill cancer patients	<i>Journal of Pain and Symptom Management</i>
48. Rousseau, 2001, Existential suffering and palliative sedation: a brief commentary with a proposal for clinical guidelines	<i>American Journal of Hospice & Palliative Care</i>
49. Thorns and Sykes, 2001, The use of sedatives at the end of life	<i>Palliative Medicine</i>
50. Weinert et al., 2001, Sedating critically ill patients: factors affecting nurses' delivery of sedative therapy	<i>American Journal of Critical Care: an official publication, American Association of Critical-Care Nurses</i>
51. Williams, 2001, The principle of double effect and terminal sedation	<i>Medical Law Review</i>
52. Baumrucker, 2002, Sedation, dehydration and ethical uncertainty	<i>American Journal of Hospice & Palliative Care</i>
53. Beel et al., 2002, Palliative sedation therapy: a review of definitions and usage	<i>International Journal of Palliative Nursing</i>
54. Cowan and Palmer, 2002, Practical guide to palliative sedation	<i>Current Oncology Reports</i>
55. Cranford and Gensinger, 2002, Hospital policy on terminal sedation and euthanasia	<i>HEC Forum: An Interdisciplinary Journal on Hospitals' Ethics and Legal Issues</i>
56. Cutter, 2002, Terminal sedation: a Jewish perspective	<i>Update</i>
57. Hunt, 2002, Existential suffering and palliative sedation in terminal illness: a comment	<i>Progress in Palliative Care</i>
58. Jackson, 2002, Palliative sedation vs. terminal sedation: what's in a name?	<i>American Journal of Hospice & Palliative Care</i>
59. Jansen and Sulmasy, 2002, Sedation, alimentation, hydration and equivocation: careful conversation about care at the end of life	<i>Annals of Internal Medicine</i>
60. Morita et al., 2002, Practices and attitudes in Japanese oncologists and palliative care physicians concerning terminal sedation: a nationwide survey	<i>Journal of Clinical Oncology: official journal of the American Society of Clinical Oncology</i>

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Author(s), Year of Publication, Title	Journal of Publication
61. Morita et al., 2002, Preferences for palliative sedation therapy in Japanese general population	<i>Journal of Palliative Medicine</i>
62. Morita et al., 2002, Definition of sedation for symptom relief: a systematic literature review and a proposal of operational criteria	<i>Journal of Pain and Symptom Management</i>
63. Orr, 2002, Just put me to sleep ...please! Ethical issues in palliative and "terminal" sedation	<i>Update</i>
64. Quillen, 2002, Palliative sedation vs. assisted suicide	<i>Nursing</i>
65. Rousseau, 2002, Existential suffering and palliative sedation in terminal illness	<i>Progress in Palliative Care</i>
66. Rousseau, 2002, Palliative sedation	<i>American Journal of Hospice & Palliative Care</i>
67. Seymour et al., 2002, Good deaths, bad deaths: older people's assessments of the risks and benefits of morphine and terminal sedation in end of life	<i>Health, Risk and Society</i>
68. Thorns, 2002, Sedation the doctrine of double effect and the end of life	<i>International Journal of Palliative Nursing</i>
69. Valko, 2002, Should sedation be terminal?	<i>The National Catholic Bioethics Quarterly</i>
70. Walter, 2002, Terminal sedation: a Catholic perspective	<i>Update</i>
71. Walton and Weinstein, 2002, Sedation for comfort at the end of life	<i>Current Pain and Headaches Report</i>
72. Braun et al., 2003, Development of a clinical practice, guideline for palliative sedation	<i>Journal of Palliative Medicine</i>
73. Gevers, 2003, Terminal sedation: a legal approach	<i>European Journal of Health Law</i>
74. Lanuke et al., 2003, Two remarkable dyspneic men: when should terminal sedation be administered?	<i>Journal of Palliative Medicine</i>
75. Lynch, 2003, Palliative sedation	<i>Clinical Journal of Oncology Nursing</i>
76. McStay, 2003, Terminal sedation: palliative care for intractable pain, post Glucksberg & Quill	<i>American Journal of Law & Medicine</i>
77. Morita et al., 2003, Similarity and difference among standard medical care, palliative sedation therapy and euthanasia: a multidimensional scaling analysis on physicians' and the general population's opinions	<i>Journal of Pain and Symptom Management</i>
78. Morita et al., 2003, Ethical validity of palliative sedation therapy	<i>Journal of Pain and Symptom Management</i>
79. Muller-Busch et al., 2003, Sedation in palliative care—a critical analysis of 7 years experience	<i>BMC Palliative Care</i>
80. Peppin, 2003, Intractable symptoms and palliative sedation at the end of life	<i>Christian Bioethics</i>
81. Rousseau, 2003, Palliative sedation and sleeping before death: a need for clinical guidelines?	<i>Journal of Palliative Medicine</i>
82. Sheldon, 2003, "Terminal sedation" different from euthanasia; Dutch ministers agree	<i>British Medical Journal</i>
83. Sykes and Thorns, 2003, Sedative use in the last week of life and the implications for end of life decision making	<i>Archives of Internal Medicine</i>
84. Taylor, 2003, Is terminal sedation really euthanasia?	<i>Medical Ethics</i>
85. Anonymous, 2004, Sedation in dying patients	<i>South African Medical Journal</i>
86. Anonymous, 2004, Summaries for patients. Doctor's reports of terminal sedation without hydration or nutrition for patients nearing death in the Netherlands	<i>Annals of Internal Medicine</i>
87. Barilan, 2004, Terminal sedation, terminal elation and medical parsimony	<i>Ethics and Medicine: A Christian Perspective on Issues in Bioethics</i>
88. Boyle, 2004, Medical ethics and double effect: the case of terminal sedation	<i>Theoretical Medicine and Bioethics</i>
89. Cameron et al., 2004, Use of sedation to relieve refractory symptoms in dying patients	<i>South African Medical Journal</i>
90. Gillick, 2004, Terminal sedation: an acceptable exit strategy?	<i>Annals of Internal Medicine</i>
91. Glick, 2004, Terminal sedation in the Netherlands	<i>Annals of Internal Medicine</i>
92. Kaldjian et al., 2004, Internists' attitudes towards terminal sedation in the end of life care	<i>Journal of Medical Ethics</i>
93. Kaldjian et al., 2004, Medical house officers' attitudes towards vigorous analgesia, terminal sedation and physician assisted suicide	<i>American Journal of Hospice & Palliative Care</i>

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Author(s), Year of Publication, Title	Journal of Publication
94. Kress and Hall, 2004, Delirium and sedation	<i>Critical Care Clinics</i>
95. McIntyre, 2004, The double life of double effect	<i>Theoretical Medicine and Bioethics</i>
96. Morita, 2004, Differences in physician reported practice in palliative sedation therapy	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
97. Morita, 2004, Palliative sedation to relieve psycho-existential suffering of terminally ill cancer patients	<i>Journal of Pain and Symptom Management</i>
98. Morita et al., 2004, Concerns of family members of patients receiving palliative sedation therapy	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
99. Morita et al., 2004, Family experience with palliative sedation therapy for terminally ill cancer patients	<i>Journal of Pain and Symptom Management</i>
100. Morita et al., 2004, Emotional burden of nurses in palliative sedation therapy	<i>Palliative Medicine</i>
101. Muller-Busch et al., 2004, Attitudes on euthanasia, physician-assisted suicide and terminal sedation—a survey of the members of the German Association for Palliative Medicine	<i>Medicine, Health Care, and Philosophy</i>
102. Rietjens et al., 2004, Physician reports of terminal sedation without hydration or nutrition for patients nearing death in the Netherlands	<i>Annals of Internal Medicine</i>
103. Rousseau, 2004, The ethics of palliative sedation	<i>Caring: National Association for Home Care magazine</i>
104. Rousseau, 2004, Palliative sedation in the management of refractory symptoms	<i>The Journal of Supportive Oncology</i>
105. Rousseau, 2004, Palliative sedation in terminally ill patients	<i>Advances in Experimental Medicine and Biology</i>
106. Woods, 2004, Is terminal sedation compatible with good nursing care at the end of life?	<i>International Journal of Palliative Nursing</i>
107. Zyllicz, 2004, Terminal sedation in the Netherlands	<i>Annals of Internal Medicine</i>
108. Baumrucker et al., 2005, Case study: sedation for palliation of terminal symptoms (SPTS), and nutrition and hydration at the end of life	<i>American Journal of Hospice & Palliative Care</i>
109. Baumrucker et al., 2005, Sedation for palliation of terminal symptoms—how soon is too soon?	<i>American Journal of Hospice & Palliative Care</i>
110. Blondeau et al., 2005, Physicians' and pharmacists' attitudes toward the use of sedation at the end of life: influence of prognosis and type of suffering	<i>Journal of Palliative Care</i>
111. Bonito et al., 2005, The clinical and ethical appropriateness of sedation in palliative neurological treatments	<i>Neurological Sciences: official journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology</i>
112. Brender et al., 2005, Palliative sedation	<i>JAMA: The Journal of the American Medical Association</i>
113. Craig, 2005, Sedation without hydration can seriously damage your health	<i>International Journal of Palliative Nursing</i>
114. Davis and Ford, 2005, Palliative sedation, definition, palliative, outcomes and ethics	<i>Journal of Palliative Medicine</i>
115. Gonzalez-Baron et al., 2005, Sedation in clinical oncology	<i>Clinical & Transnational Oncology: official publication of the Federation of Spanish Oncology Societies and of the National Cancer Institute of Mexico</i>
116. Howland, 2005, Questions about palliative sedation: an act of mercy or mercy killing?	<i>Ethics and Medics</i>
117. Kohara et al., 2005, Sedation for terminally ill patients with cancer with uncontrollable physical distress	<i>Journal of Palliative Medicine</i>
118. Levy and Cohen, 2005, Sedation for the relief of refractory symptoms in the imminently dying: a fine intentional line	<i>Seminars in Oncology</i>
119. Lo and Rubenfeld, 2005, Palliative sedation in dying patients: “we turn to it when everything else hasn't worked”	<i>JAMA: The Journal of the American Medical Association</i>
120. Morita et al., 2005, Development of a clinical guideline for palliative sedation therapy using Delphi method	<i>Journal of Palliative Medicine</i>
121. Morita et al., 2005, Efficacy and safety of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan	<i>Journal of Pain and Symptom Management</i>

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Author(s), Year of Publication, Title	Journal of Publication
122. Morita et al., 2005, Ethical validity of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan	<i>Journal of Pain and Symptom Management</i>
123. Rousseau, 2005, Existential distress and palliative sedation	<i>Anaesthesia and Analgesia</i>
124. Rousseau, 2005, Palliative sedation in control of refractory symptoms	<i>Journal of Palliative Medicine</i>
125. Rousseau, 2005, Palliative sedation: the author's response	<i>Journal of Palliative Medicine</i>
126. Sheldon, 2005, Dutch doctors are given guidance on sedation	<i>British Medical Journal</i>
127. Beel et al., 2006, Palliative sedation: nurses' perceptions	<i>International Journal of Palliative Nursing</i>
128. Berger, 2006, Suffering in advanced dementia: diagnostic and treatment challenges and questions about palliative sedation	<i>The Journal of Clinical Ethics</i>
129. Cherny, 2006, Sedation for the care of patients with advanced cancer	<i>Nature Clinical Practice Oncology</i>
130. Cowan et al., 2006, Palliative sedation in a southern Appalachian community	<i>American Journal of Hospice & Palliative Care</i>
131. Del Fabbro and Bruera, 2006, Dying patients and palliative sedation	<i>JAMA: The Journal of the American Medical Association</i>
132. Diamond, 2006, Terminal sedation	<i>The Linacre Quarterly</i>
133. Gevers, 2006, Terminal sedation: between pain relief, withholding treatment and euthanasia	<i>Medicine and Law</i>
134. Goncalves, 2006, Sedation and expertise in palliative care	<i>Journal of Clinical Oncology: official journal of the American Society of Clinical Oncology</i>
135. Good, 2006, Re: Efficacy, safety and ethical validity of palliative sedation therapy	<i>Journal of Pain and Symptom Management</i>
136. Kuschner, 2006, Dying patients and palliative sedation	<i>JAMA: The Journal of the American Medical Association</i>
137. Miccinesi et al., 2006, Continuous deep sedation: physicians' experiences in six European countries	<i>Journal of Pain and Symptom Management</i>
138. Morita, 2006, Efficacy and safety of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan: comment reply	<i>Journal of Pain and Symptom Management</i>
139. Rietjens et al., 2006, Terminal sedation and euthanasia: a comparison of clinical practices	<i>Archives of Internal Medicine</i>
140. Rousseau, 2006, Palliative sedation and the fear of legal ramifications	<i>Journal of Palliative Medicine</i>
141. Anderson, 2007, Palliative sedation of the dying: ethics and realities	<i>Missouri Medicine</i>
142. Birnbacher, 2007, Terminal sedation, euthanasia and causal roles	<i>Medscape General Medicine</i>
143. Bulli et al., 2007, Continuous deep sedation in home palliative care units: case studies in the Florence area in 2000 and in 2003-2004	<i>Minerva anesthesiologica</i>
144. Cantor et al., 2007, The ethics of palliative sedation as a therapy of last resort	<i>American Journal of Hospice & Palliative Medicine</i>
145. De Graeff and Dean, 2007, Palliative sedation therapy in the last weeks of life: a literature review and recommendations for standards	<i>Journal of Palliative Medicine</i>
146. Del Fabbro et al., 2007, Palliative sedation: when the family and consulting service see no alternative	<i>Journal of Palliative Medicine</i>
147. Eisenclas, 2007, Palliative sedation	<i>Current Opinion in Supportive and Palliative Care</i>
148. Engstrom et al., 2007, Palliative sedation at the end of life—a systematic literature review	<i>European Journal of Oncology Nursing: the official journal of European Oncology Nursing Society</i>
149. Gallagher and Weinwright, 2007, Terminal sedation: promoting ethical nursing practice	<i>Nursing Standard</i>
150. Hasselaar et al., 2007, Improving prescription in palliative sedation: compliance with Dutch guidelines	<i>Archives of Internal Medicine</i>
151. Higgins and Altilio, 2007, Palliative sedation: an essential place for clinical excellence	<i>Journal of Social Work in End-of-Life and Palliative Care</i>

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Author(s), Year of Publication, Title	Journal of Publication
152. Legemaate et al., 2007, Palliative sedation in the Netherlands: starting points and contents of a national guideline	<i>European Journal of Health Law</i>
153. Pautex and Zulian, 2007, To sedate or not to sedate?	<i>Journal of Pain and Symptom Management</i>
154. Rietjens et al., 2007, Having a difficult time leaving: experiences and attitudes of nurses with palliative sedation	<i>Palliative Medicine</i>
155. Sheldon, 2007, Incidence of euthanasia in the Netherlands falls as that of palliative sedation rises	<i>British Medical Journal</i>
156. Simon et al., 2007, Attitudes towards terminal sedation: an empirical survey among experts in the field of medical ethics	<i>BMC Palliative Care</i>
157. Van Delden, 2007, Terminal sedation: source of a restless ethical debate	<i>Journal of Medical Ethics</i>
158. Verkerk et al., 2007, A national guideline for palliative sedation in the Netherlands	<i>Journal of Pain and Symptom Management</i>
159. Vissers et al., 2007, Sedation in palliative care	<i>Current Opinion in Anaesthesiology</i>
160. Batin, 2008, Terminal sedation: pulling the sheet over our eyes	<i>The Hastings Center Report</i>
161. Carr and Mohr, 2008, Palliative sedation as part of a continuum of palliative care	<i>Journal of Palliative Medicine</i>
162. Cellarius, 2008, Terminal sedation and the “imminence condition”	<i>Journal of Medical Ethics</i>
163. Cherny, 2008, Palliative sedation for the relief of refractory physical symptoms	<i>Progress in Palliative Care</i>
164. Claessens et al., 2008, Palliative sedation: a review of the research literature	<i>Journal of Pain and Symptom Management</i>
165. Craig, 2008, Palliative care in overdrive: patients in danger	<i>American Journal of Hospice & Palliative Medicine</i>
166. Cunningham, 2008, A review of sedation for intractable distress in the dying	<i>Irish Medical Journal</i>
167. Curlin et al., 2008, To die, to sleep: US physicians’ religious and other objections to physician-assisted suicide, terminal sedation and withdrawal of life support	<i>American Journal of Hospice & Palliative Care</i>
168. Harrison, 2008, Continuous deep sedation: please don’t forget ethical responsibilities	<i>British Medical Journal</i>
169. Hasselaar, 2008, Palliative sedation until death: an approach from Kant’s ethics of virtue	<i>Theoretical Medicine and Bioethics</i>
170. Hasselaar et al., 2008, Dealing with delicate issues in continuous deep sedation. Varying practices among Dutch medical specialists, general practitioners and nursing home physicians	<i>Archives of Internal Medicine</i>
171. Kassabian, 2008, Palliative sedation and physician assisted death	<i>Journal of Palliative Medicine</i>
172. Kreeger, 2008, Continuous deep sedation: good care at the end of life, not hastening death	<i>British Medical Journal</i>
173. Moyano et al., 2008, Palliative sedation in Latin America: survey on practices and attitudes	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
174. Murray et al., 2008, Continuous deep sedation in patients nearing death	<i>British Medical Journal</i>
175. Rietjens et al., 2008, Continuous deep sedation for patients nearing death in the Netherlands: descriptive study	<i>British Medical Journal</i>
176. Rietjens et al., 2008, Palliative sedation in a specialized unit for acute palliative care in a cancer hospital: comparing patients dying with and without palliative sedation	<i>Journal of Pain and Symptom Management</i>
177. Schuman-Olivier et al., 2008, The use of palliative sedation for existential distress: a psychiatric perspective	<i>Harvard Review of Psychiatry</i>
178. Stewart, 2008, “To sleep before we die...”when is palliative sedation an option for the dying person?	<i>Journal of Palliative Medicine</i>
179. Treloar, 2008, Continuous deep sedation: Dutch research reflects problems with the Liverpool care pathway	<i>British Medical Journal</i>

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Author(s), Year of Publication, Title	Journal of Publication
180. Venke Gran and Miller, 2008, Norwegian nurses' thoughts and feelings regarding the ethics of palliative sedation	<i>International Journal of Palliative Nursing</i>
181. Blondeau et al., 2009, Attitudes of Quebec doctors toward sedation at the end of life: an exploratory study	<i>Palliative & Supportive Care</i>
182. Boal and Smith, 2009, Line, please	<i>The Hastings Center Report</i>
183. Cherny, 2009, The use of sedation to relieve cancer patients' suffering at the end of life: addressing critical issues	<i>Annals of Oncology: official journal of the European Society for Medical Oncology / ESMO</i>
184. Cherny and Radbruch, 2009, European Association for Palliative Care (EAPC) recommended framework for the use of sedation in palliative care	<i>Palliative Medicine</i>
185. Davis, 2009, Does palliative sedation always relieve symptoms?	<i>Journal of Palliative Medicine</i>
186. Davis, 2009, Palliative sedation: four questions	<i>Progress in Palliative Care</i>
187. De Gendt et al., 2009, End of life decision making and terminal sedation among very old patients	<i>Gerontology</i>
188. Elsayem et al., 2009, Use of palliative sedation for intractable symptoms in the palliative care unit of a comprehensive cancer center	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
189. Hasselaar et al., 2009, Palliative sedation is not controversial	<i>The Lancet Oncology</i>
190. Hasselaar et al., 2009, When cancer symptoms cannot be controlled: the role of palliative sedation	<i>Current Opinion in Supportive and Palliative Care</i>
191. Hasselaar et al., 2009, Changed patterns in Dutch palliative sedation practices after the introduction of a national guideline	<i>Archives of Internal Medicine</i>
192. Hauser and Walsh, 2009, Palliative sedation: welcome guidance on a controversial issue	<i>Palliative Medicine</i>
193. Hulme and Cambell, 2009, Palliative sedation therapy	<i>British Journal of Hospital Medicine</i>
194. Koh et al., 2009, Palliative not terminal sedation	<i>Journal of Pain and Symptom Management</i>
195. Lubbe and Strange, 2009, Palliative sedation—reflections and considerations: a case study	<i>Progress in Palliative Care</i>
196. Maltoni et al., 2009, Palliative sedation therapy does not hasten death: results from a prospective multicentre study	<i>Annals of Oncology: official journal of the European Society for Medical Oncology / ESMO</i>
197. Marshall, 2009, Palliative sedation at the end of life. Exploring a conflict of duty	<i>Advance for Nurse Practitioners</i>
198. Materstvedt and Bosshard, 2009, Deep and continuous palliative sedation (terminal sedation): clinical, ethical and philosophical aspects	<i>The Lancet Oncology</i>
199. Meisel, 2009, Line, please	<i>The Hastings Center Report</i>
200. Mercadante et al., 2009, Controlled sedation for refractory symptoms in dying patients	<i>Journal of Pain and Symptom Management</i>
201. Morgan et al., 2009, Re: Palliative sedation at home	<i>Journal of Palliative Care</i>
202. Quill et al., 2009, Last resort options for palliative sedation	<i>Annals of Internal Medicine</i>
203. Rietjens et al., 2009, Deciding about continuous deep sedation: physicians' perspectives: a focus group study	<i>Palliative Medicine</i>
204. Rietjens et al., 2009, Re: Palliative sedation: the need for a descriptive definition	<i>Journal of Pain and Symptom Management</i>
205. Rosengarten et al., 2009, Palliative sedation at home	<i>Journal of Palliative Care</i>
206. Sanft et al., 2009, Physical pain and emotional suffering: the case of palliative sedation	<i>The Journal of Pain: official journal of the American Pain Society</i>
207. Sheldon, 2009, Guideline seeks to clarify difference between palliative sedation and euthanasia	<i>British Medical Journal</i>
208. Tendas et al., 2009, Palliative sedation therapy in a bone marrow transplant unit	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
209. Van Heest et al., 2009, Telephone consultations on palliative sedation therapy and euthanasia in general practice in the Netherlands in 2003: a report from inside	<i>Family Practice</i>
210. Alonso-Babarro et al., 2010, At home palliative sedation for end of life cancer patients	<i>Palliative Medicine</i>

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Author(s), Year of Publication, Title	Journal of Publication
211. Banja, 2010, When moral arguments become intractable	<i>Pain Medicine: the official journal of the American Academy of Pain Medicine</i>
212. Berger, 2010, Rethinking guidelines for the use of palliative sedation	<i>The Hastings Center Report</i>
213. Buiting et al., 2010, Physicians' labeling of end of life practices: a hypothetical case study	<i>Journal of Medical Ethics</i>
214. Cassell and Rich, 2010, Intractable end-of-life suffering and the ethics of palliative sedation	<i>Pain Medicine: the official journal of the American Academy of Pain Medicine</i>
215. Cassell and Rich, 2010, Responses to Commentaries by Jansen & Banja	<i>Pain Medicine: the official journal of the American Academy of Pain Medicine</i>
216. Cellarius and Henry, 2010, Justifying different levels of palliative sedation	<i>Annals of Internal Medicine</i>
217. Chambaere et al., 2010, Differences in the performance of euthanasia and continuous deep sedation by French- and Dutch-speaking physicians in Brussels, Belgium	<i>Journal of Pain and Symptom Management</i>
218. Chambaere et al., 2010, Continuous deep sedation until death in Belgium: a nationwide survey	<i>Archives of Internal Medicine</i>
219. Gillon et al., 2010, Review of phenobarbitone use for deep terminal sedation in a UK hospice	<i>Palliative Medicine</i>
220. Jansen, 2010, Disambiguating clinical intentions: the ethics of palliative sedation	<i>The Journal of Medicine and Philosophy</i>
221. Jansen, 2010, Intractable end-of-life suffering and the ethics of palliative sedation: a commentary on Cassell & Rich	<i>Pain Medicine: the official journal of the American Academy of Pain Medicine</i>
222. Juth et al., 2010, European Association for Palliative Care (EAPC) framework for palliative sedation: an ethical discussion	<i>BMC Palliative Care</i>
223. Kirk & Mahon, 2010, National Hospice and Palliative Care Organization (NHPCO): position statement and commentary on the use of palliative sedation in the imminently dying terminally ill patients	<i>Journal of Pain and Symptom Management</i>
224. Krishna, 2010, Consent in terminal sedation	<i>Indian Journal of Medical Ethics</i>
225. Lindblad et al., 2010, Continuous deep sedation, physician-assisted suicide and euthanasia in Huntigton's disorder	<i>International Journal of Palliative Nursing</i>
226. Muller, 2010, Re: NHPCO position statement on palliative sedation	<i>Journal of Pain and Symptom Management</i>
227. Olsen et al., 2010, Ethical decision making with end of life care: palliative sedation withholding or withdrawing life-sustaining treatments	<i>Mayo Clinic Proceedings. Mayo Clinic</i>
228. Porzio et al., 2010, Efficacy and safety of deep, continuous palliative sedation at home: a retrospective, single institution study	<i>Supportive Care in Cancer: official journal of the Multinational Association of Supportive Care in Cancer</i>
229. Quill et al., 2010, Justifying different levels of palliative sedation: response	<i>Annals of Internal Medicine</i>
230. Rady and Verheijde, 2010, Continuous deep sedation until death: palliation or physician assisted death?	<i>American Journal of Hospice & Palliative Care</i>
231. Rady and Verheijde, 2010, Sedation for the imminently dying: survey results from AAN Ethics Section	<i>Neurology</i>
232. Russell et al., 2010, Sedation for the imminently dying: survey results from AAN Ethics Section	<i>Neurology</i>
233. Seale, 2010, Continuous deep sedation in medical practice: a descriptive study	<i>Journal of Pain and Symptom Management</i>
234. Sulmasy et al., 2010, Justifying different levels of palliative sedation	<i>Annals of Internal Medicine</i>
235. Swart et al., 2010, Physicians' and nurses' experiences with continuous palliative sedation in the Netherlands	<i>Archives of Internal Medicine</i>
236. VanDeijck et al., 2010, The practice of continuous palliative sedation in elderly patients: a nationwide explorative study among Dutch nursing home physicians	<i>Journal of the American Geriatrics Society</i>

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Author(s), Year of Publication, Title	Journal of Publication
237. Visser and Hasselaar, 2010, Palliative sedation: need for consensus guidelines and standards: comment on "Continuous deep sedation until death in Belgium: a nationwide survey"	<i>Archives of Internal Medicine</i>
238. Anquetin et al., 2011, General practitioners' report of continuous deep sedation until death for patients dying at home: a descriptive study from Belgium	<i>The European Journal of General Practice</i>
239. Arnstein and Robinson, 2011, Is palliative sedation right for your patients?	<i>Nursing</i>
240. Baumann et al., 2011, The ethical and legal aspects of palliative sedation in severely brain-injured patients: a French perspective	<i>Philosophy, Ethics and Humanities in Medicine: PEHM</i>
241. Berger, 2011, Clarifying the ethics of continuous sedation	<i>American Journal of Bioethics: AJOB</i>
242. Bharadwaj and Ward, 2011, Palliative sedation for a patient with terminal illness	<i>American Family Physician</i>
243. Brassington, 2011, If suicide is painless, is painless suicide?	<i>The American Journal of Bioethics: AJOB</i>
244. Brinkkemper et al., 2011, Palliative sedation at home in the Netherlands: a nationwide survey among nurses	<i>Journal of Advanced Nursing</i>
245. Broeckaert, 2011, Palliative sedation, physician-assisted suicide and euthanasia: same, same but different?	<i>The American Journal of Bioethics: AJOB</i>
246. Broeckaert et al., 2011, What's in a name? Palliative sedation in Belgium. Reply to Chambaere et al	<i>Journal of Pain and Symptom Management</i>
247. Carvalho et al., 2011, Continuous deep sedation in the end of life care: disentangling palliation from physician assisted death	<i>The American Journal of Bioethics: AJOB</i>
248. Cellarius, 2011, Early terminal sedation is a distinct entity	<i>Bioethics</i>
249. Chambaere et al., 2011, Palliative sedation in Flemish palliative care units	<i>Journal of Pain and Symptom Management</i>
250. Claessens et al., 2011, Palliative sedation, not slow euthanasia. A prospective, longitudinal study of sedation in Flemish palliative care units	<i>Journal of Pain and Symptom Management</i>
251. Da Costa et al., 2011, Doctor, how long?	<i>European Journal of Cancer Care</i>
252. Feen, 2011, Consistent with physician's role as healer	<i>The American Journal of Bioethics: AJOB</i>
253. Ghafoor and Silus, 2011, Developing policy, standard orders and quality-assurance monitoring for palliative sedation therapy	<i>American Journal of Health System Pharmacy: AJHP : official journal of the American Society of Health-System Pharmacists</i>
254. Helgesson and Eriksson, 2011, Four themes in recent Swedish bioethics debate	<i>Cambridge Quarterly of Healthcare Ethics: CQ: The International Journal of Healthcare Ethics Committees</i>
255. Henry et al., 2011, To "sleep until death"	<i>The Hastings Center Report</i>
256. Inghelbrecht et al., 2011, Continuous deep sedation until death in Belgium: a survey among nurses	<i>Journal of Pain and Symptom Management</i>
257. Kirby, 2011, Ethically preferable alternative practice: "no"; a preferable head-to-head analytical approach: "maybe"	<i>The American Journal of Bioethics: AJOB</i>
258. Kon, 2011, Palliative sedation: its not a panacea	<i>The American Journal of Bioethics: AJOB</i>
259. LiPuma, 2011, The lacking of moral equivalency for continuous sedation and PAS	<i>The American Journal of Bioethics: AJOB</i>
260. Manzini, 2011, Palliative sedation: ethical perspectives from Latin America in comparison with European recommendations	<i>Current Opinion in Supportive and Palliative Care</i>
261. Martin et al., 2011, Assisted suicide is compatible with medical ethos	<i>The American Journal of Bioethics: AJOB</i>
262. Mercadante et al., 2011, Palliative sedation in patients with advanced cancer followed at home: a systematic review	<i>Journal of Pain and Symptom Management</i>
263. Oosten et al., 2011, Higher doses opioids in patients who need palliative sedation prior to death: cause or consequence?	<i>European Journal of Cancer</i>

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Author(s), Year of Publication, Title	Journal of Publication
264. Powers and McLean, 2011, The community speaks: continuous deep sedation as caregiving versus physician-assisted suicide as killing	<i>The American Journal of Bioethics: AJOB</i>
265. Raus et al., 2011, Is continuous sedation at the end of life an ethically preferable alternative to physician-assisted suicide?	<i>The American Journal of Bioethics: AJOB</i>
266. Rich, 2011, A death of one's own: the perils and pitfalls of continuous deep sedation as the ethical alternative to lethal prescription	<i>The American Journal of Bioethics: AJOB</i>
267. Seymour et al., 2011, The perspectives of clinical staff and bereaved informal care-givers on the use of continuous sedation until death for cancer patients: the study protocol of the UNBIASED study	<i>BMC Palliative Care</i>
268. Tsu, 2011, Elimination of pain versus elimination of suffering: why CDS is ethically preferable to PAS?	<i>The American Journal of Bioethics: AJOB</i>
269. van de Vathorst and Schermer, 2011, Additional reasons for not viewing continuous sedation as preferable alternative for physician assisted suicide	<i>The American Journal of Bioethics: AJOB</i>
270. Vogel, 2011, Framework urges physicians to proceed with caution on palliative sedation	<i>Canadian Medical Association Journal</i>
271. Von Roenn and von Gunten, 2011, Are we putting the cart before the horse?	<i>Archives of Internal Medicine</i>
272. White and Brody, 2011, Would accommodating some conscientious objections by physician promote quality in medical care?	<i>JAMA: The Journal of the American Medical Association</i>
273. Willems, 2011, The apparent gap between guidelines on palliative sedation and everyday practice. Commentary on: General practitioner's report on continuous deep sedation until death for patients dying at home: a descriptive study from Belgium	<i>The European Journal of General Practice</i>