

Special Article

ATTITUDES OF PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS AND THEIR CARE GIVERS TOWARD ASSISTED SUICIDE

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ABSTRACT

Background and Methods Amyotrophic lateral sclerosis (ALS) is a neuromuscular disease that causes gradual paralysis, respiratory failure, and death, usually within three to five years after it has been diagnosed. Between 1995 and 1997, we surveyed patients with this disease in Oregon and Washington, as well as their family care givers, in order to determine their attitudes toward assisted suicide. Patients were considered to be willing to contemplate assisted suicide if they agreed with the statement, "Under some circumstances I would consider taking a prescription for a medicine whose sole purpose was to end my life," and disagreed with the statement, "I would never request or take a prescription for a medication whose sole purpose was to end my life." The Oregon Death with Dignity Act, which legalized physician-assisted suicide, was approved by Oregon voters in 1994 but did not go into effect until October 1997, after data collection for this study had been completed.

Results Of 140 eligible persons with ALS, 100 (71 percent) agreed to participate in the study, as did 91 family care givers. The mean age of the patients with ALS was 54 years; the mean duration of illness since the diagnosis was 2.8 years. Fifty-six patients (56 percent) said they would consider assisted suicide, and 44 of the 56 agreed with the statement, "If physician-assisted suicide were legal, I would request a lethal prescription from a physician." One patient would have taken the medication immediately, and 36 would have kept it for future use. As compared with the patients who were opposed to assisted suicide, those who would consider it were more likely to be men, had a higher level of education, were less likely to be religious, had higher scores for hopelessness, and rated their quality of life as lower. In 66 of 91 instances (73 percent), care givers and patients had the same attitude toward assisted suicide.

Conclusions In Oregon and Washington, a majority of persons with ALS whom we surveyed would consider assisted suicide. Many would request a prescription for a lethal dose of medication well before they intended to use it. (N Engl J Med 1998;339:967-73.)

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AMYOTROPHIC lateral sclerosis (ALS) is a neuromuscular disease that causes gradual paralysis and respiratory failure and that results in death within three to five years, on average, after the diagnosis has been established.¹ There is currently no clearly effective treatment. Patients with ALS have participated in the debate over assisted suicide,^{2,3} yet their interest in obtaining a physician's aid to hasten death has not been studied. We examined the attitudes of patients with ALS and their family care givers toward assisted suicide.

METHODS**Respondents**

Potential subjects included all persons with ALS in western or north central Oregon, southwestern Washington, or Seattle who were patients in the ALS Clinic at Oregon Health Sciences University in Portland, Oregon; had participated in previous studies of ALS at the university; or had expressed an interest in participating in research on ALS in a survey conducted in 1996 on behalf of the university by the Muscular Dystrophy Associations of Oregon and Washington.

ALS was diagnosed by a neurologist at Oregon Health Sciences University's ALS Research Center or was confirmed by one of the investigators as a probable or definite diagnosis on the basis of a review of the medical record with the use of criteria developed by the World Federation of Neurology.⁴ We required that patients be able to communicate "yes" or "no" in response to questions and be fluent in English. Patients were excluded from the study if their primary physicians believed that participation would be detrimental, if the patients had other life-threatening medical illnesses or substantial cognitive impairment, or if they were unable to acknowledge that they had ALS and that it might result in death. Family care givers were defined as persons who were related to the patient or who had a relationship with the patient that was characterized by reciprocal affection and commitment. Paid, unrelated care givers were excluded. Patients and care givers were interviewed separately and (with the exception of those in Seattle) by different research assistants. The interviews were conducted between September 1995 and April 1997. The study was approved by the institutional review board at Oregon Health Sciences University. All subjects provided informed consent; if they could not write their names, they made a mark on the form.

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Measures

Instruments that require only “yes” or “no” responses were chosen, or instruments were modified in order to accommodate the patients’ communication impairments. Standardized instruments were used to measure social support,⁵ hopelessness,⁶ and depression.⁷ Low energy and psychomotor retardation were excluded as symptoms of depression. We revised three items from the Zarit Burden Inventory to determine whether the patients believed that their medical condition caused stress or was an emotional or financial burden for their families.⁸ Patients rated the importance of religion on a Likert scale and indicated church membership and frequency of religious practices.⁹ Subscales of the Sickness Impact Profile were used to assess eight aspects of functional status: mobility, body care and movement, household management, work (not assessed in the case of retirees), recreation and pastimes, ambulation, communication, and nutrition.¹⁰ Patients rated quality of life, pain, and suffering on Likert scales.^{11,12}

Patients were asked whether they agreed or disagreed with statements about refusing life-sustaining medical treatment, including cardiopulmonary resuscitation, mechanical ventilation, feeding tubes, and using adequate medication for pain, even if death was hastened as a result. Patients were classified as willing to consider assisted suicide if they agreed with the statement, “Under some circumstances I would consider taking a prescription for a medicine whose sole purpose was to end my life,” and disagreed with the statement, “I would never request or take a prescription for a medication whose sole purpose was to end my life.” Patients classified as willing to consider assisted suicide were asked whether they agreed or disagreed with a series of statements about requesting a prescription for a lethal dose of a medication from a physician, if it were legal to do so, and about a preference for self-administration or administration by another person.

Family care givers completed the same questionnaires about social support, depression, and religious beliefs and practices. We assessed the financial burden of the illness¹³ and its effect on the care givers’ social life, health, and level of stress.⁸ Care givers rated the patient’s quality of life, suffering, and severity of pain on Likert scales and indicated whether they would support or oppose the patient’s refusal of cardiopulmonary resuscitation, mechanical ventilation, or feeding tubes and the patient’s acceptance of pain medication, even if it might hasten death. Care givers were also asked whether they would support or oppose the patient’s decision to take a lethal dose of medication and what they thought the likelihood was that the patient would actually request such a prescription.

Statistical Analysis

Cronbach’s alpha was used to measure the internal reproducibility of the modified scales.¹⁴ The results were as follows: patients’ religious practices, 0.84; burden on family care givers, 0.89; and family care givers’ religious practices, 0.85.

Comparisons between patients who would consider assisted suicide and those who would not were performed for all variables. Chi-square statistics were used for categorical variables, and unpaired t-tests were used for continuous variables.¹⁵ All tests were two-tailed. The kappa statistic¹⁶ was used to test for agreement between the patient and the family care giver with respect to the patient’s willingness to consider taking a lethal dose of medication.

RESULTS

Subjects

Of 148 patients with ALS who were identified as candidates for participation in the study, 8 were excluded (1 did not speak English, 1 was unaware of the diagnosis, 4 had dementia, and 2 were excluded at the primary physician’s request). Of the 140 patients eligible to participate in the study, 100 (71 percent) agreed to do so. Their mean age was 54 years, and

TABLE 1. CHARACTERISTICS OF THE 100 PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS.

CHARACTERISTIC	VALUE*
Mean age — yr	54.0 (51.6–56.8)
Male sex — no. (%)	61 (61)
White — no. (%)	97 (97)
Married — no. (%)	78 (78)
Mean level of education — yr	14.4 (13.9–14.9)
Mean time since diagnosis — yr	2.8 (2.0–3.6)
Mean time since first symptoms — yr	4.0 (3.1–4.9)
Living at home — no. (%)	97 (97)
State of residence — no. (%)	
Oregon	74 (74)
Washington	26 (26)
Receiving hospice services — no. (%)†	20 (24)
Diagnosis of major depressive disorder — no. (%)‡	11 (11)
Mean score on Sickness Impact Profile§	33.1 (29.7–36.5)
Mean score for social support¶	
Affective	8.2 (7.9–8.5)
Confidant	12.9 (12.4–13.4)
Mean score on Beck Hopelessness Scale	4.8 (4.1–5.5)
Mean score for importance of religion**	73.8 (67.0–80.6)
Mean score for religious practices††	9.6 (9.0–10.2)
Mean score for quality of life‡‡	2.3 (2.0–2.6)
Mean score for effect of illness on quality of life§§	3.5 (3.2–3.8)
Mean score for severity of physical pain¶¶	2.2 (1.9–2.5)
Mean score for severity of suffering	2.4 (2.1–2.7)

*Mean values are given with 95 percent confidence intervals in parentheses.

†Information on hospice services was obtained from 85 of the 91 care givers.

‡Major depressive disorder was defined according to the criteria specified in the *Diagnostic and Statistical Manual* (fourth edition) of the American Psychiatric Association.

§The Sickness Impact Profile¹⁰ measures the impact of illness on functional status, with scores ranging from 0 (low impact) to 60 (high impact).

¶The Duke–University of North Carolina Functional Social Support Questionnaire was used to assess social support.⁵ Scores for affective (emotional) support range from 3 (low) to 9 (high); confidant scores (which reflect the extent to which important matters are discussed or shared) range from 3 (low) to 15 (high).

||Scores on the Beck Hopelessness Scale⁶ range from 0 (not hopeless) to 20 (very hopeless).

**The importance of religion was assessed on a Likert scale, with scores ranging from 0 (not important) to 100 (very important).

††Practices included praying, reading the Bible, reading devotional literature, viewing religious programs on television, and relying on religious leaders for decision making. For each practice, the score ranged from 1 (never) to 3 (frequently).

‡‡Scores ranged from 1 (quality of life is as good as it can be) to 6 (quality of life is very bad).

§§Scores ranged from 1 (health problems have not limited quality of life) to 6 (health problems have severely limited quality of life).

¶¶Scores ranged from 1 (no physical pain) to 6 (severe physical pain).

|||Scores ranged from 1 (not suffering) to 6 (suffering terribly).

TABLE 2. CHARACTERISTICS OF PATIENTS ACCORDING TO WHETHER THEY WOULD CONSIDER ASSISTED SUICIDE.

CHARACTERISTIC	WOULD NOT CONSIDER ASSISTED SUICIDE (N=44)	WOULD CONSIDER ASSISTED SUICIDE (N=56)	P VALUE
	mean (95% CI)*		
Level of education (yr)	13.5 (12.7–14.3)	15.0 (14.0–16.0)	0.02
Score for quality of life†	2.0 (1.6–2.4)	2.5 (2.3–2.8)	0.04
Score on Beck Hopelessness Scale‡	3.4 (2.4–4.4)	5.9 (4.9–6.9)	0.001
Score for importance of religion§	91.6 (85.5–97.7)	59.8 (50.0–69.6)	<0.001
Score for religious practices¶	11.5 (10.8–12.2)	8.0 (7.4–8.6)	<0.001
	no. (%)		
Male sex	20 (45)	41 (73)	0.005
Thought of committing suicide in previous 2 wk	0	8 (14)	0.009
Wanted to die in previous 2 wk	3 (7)	17 (30)	0.003
Church member	34 (77)	22 (39)	<0.001
Might refuse feeding tube	18 (41)	45 (80)	<0.001
Might refuse cardiopulmonary resuscitation or mechanical ventilation	32 (73)	54 (96)	0.001
Might take pain medication to be comfortable, even if death hastened	33 (75)	55 (98)	<0.001

*CI denotes confidence interval.

†Scores ranged from 1 (as good as it can be) to 6 (very bad).

‡Scores ranged from 0 (not hopeless) to 20 (very hopeless).

§Scores ranged from 0 (not important) to 100 (very important).

¶Scores ranged from 5 (no religious practices) to 15 (frequent religious practices).

they had attended school for a mean of 14.4 years (Table 1). Sixty-one percent were men, 97 percent were white, and 78 percent were married. The mean duration of illness was 4 years since the onset of symptoms and 2.8 years since the diagnosis. Seventy-four percent of the patients were residents of Oregon, and 26 percent were residents of Washington.

Ninety-seven percent of the patients lived at home. Of the 85 for whom information on hospice care was available, 20 (24 percent) received such services. Two patients were dependent on a ventilator. Eleven percent of the patients were clinically depressed. Ninety-one percent felt that their medical condition was a cause of stress for family members, and 65 percent felt that they were a burden to their families. Forty-eight percent thought that their medical condition resulted in financial hardship for their families. Other functional, social, psychological, and religious characteristics of the patients are shown in Table 1.

Fifty-six percent of the patients agreed with the statement, “Under some circumstances I would consider taking a prescription for a medicine whose sole purpose was to end my life,” and were therefore clas-

sified as willing to consider assisted suicide. As shown in Table 2, the patients who agreed with the statement were more likely to be men, had more years of education, had higher scores for hopelessness, were less likely to be religious (on all measures), and rated their quality of life as lower than those who disagreed with the statement. The willingness to consider assisted suicide was associated with a desire to die, recent thoughts of committing suicide, and possible refusal of life-saving treatment (Table 2). Other variables, including state of residence, time since the onset of symptoms or since the diagnosis, social support, use of hospice care, disability, pain, suffering, and perceived effects of illness on family did not differ significantly between the two groups of patients.

Although there was no difference in the prevalence of depression between the patients who would consider taking a lethal dose of medication and those who would not, patients who would consider assisted suicide had higher scores for hopelessness (Table 2). Hopelessness and depression were not synonymous. For example, the subgroup of patients with hopelessness scores of 9 or higher included 3 of

TABLE 3. ASSOCIATION BETWEEN RESPONSES ON BECK HOPELESSNESS SCALE AND WILLINGNESS TO CONSIDER ASSISTED SUICIDE.

RESPONSE	WOULD NOT CONSIDER ASSISTED SUICIDE (N=44)	WOULD CONSIDER ASSISTED SUICIDE (N=56)	P VALUE
	% of patients		
"I look forward to the future with hope and enthusiasm."	84	52	0.001
"My future seems dark to me."	11	54	<0.001
"When I look to the future I expect I will be happier than now."	66	25	<0.001
"I have great faith in the future."	89	59	<0.001

TABLE 4. CHARACTERISTICS OF 91 FAMILY CARE GIVERS.*

CHARACTERISTIC	CARE GIVERS
	no. (%)
Female sex	62 (68)
Relationship to patient	
Spouse	67 (74)
Child	11 (12)
Parent	4 (4)
Sibling	1 (1)
Other relative	3 (3)
Friend	5 (5)
	mean (95% CI)*
No. of activities of daily living in which patient requires assistance†	5.7 (5.0–6.4)
Period of acquaintance with patient — yr	30.2 (26.8–33.6)
Burden score‡	9.0 (7.9–10.1)
Social-support score§	
Affective	7.4 (7.1–7.7)
Confidant	12.1 (11.5–12.7)
Score for importance of religion¶	71.4 (64.7–78.1)
Score for religious practices	9.4 (8.8–10.0)
Score for assessment of patient's quality of life**	2.4 (2.1–2.7)
Score for assessment of patient's pain††	2.7 (2.4–3.6)
Score for assessment of patient's suffering‡‡	2.8 (2.5–3.1)

*Because of rounding, percentages do not total 100. CI denotes confidence interval.

†The number ranged from 0 to 10.

‡Scores ranged from 0 (never feels burdened) to 20 (nearly always feels burdened).

§The scale for social support was the same as that used for the patients, with scores ranging from 3 (low) to 9 (high) for the affective component and from 3 (low) to 15 (high) for the confidant component.

¶The scale was the same as that used for the patients, with the score ranging from 0 (not important) to 100 (very important).

||The scale was the same as that used for the patients, with the score ranging from 5 (no religious practices) to 15 (frequent religious practices).

**Scores ranged from 1 (as good as it can be) to 6 (very bad).

††Scores ranged from 1 (no physical pain) to 6 (severe physical pain).

‡‡Scores ranged from 1 (not suffering) to 6 (suffering terribly).

11 patients with a major depressive disorder (27 percent) and 16 of 89 patients without a major depressive disorder (18 percent) ($P=0.46$). Table 3 provides additional information about the relation between hopelessness and the willingness to consider taking a lethal dose of medication.

The 56 patients willing to consider assisted suicide were asked whether they agreed or disagreed with a series of statements about obtaining a prescription for a lethal dose of medication from a physician and about preferences for the route of administration. Fourteen of the 56 patients (25 percent) said they would prefer to administer the lethal medication themselves, 10 (18 percent) said they would prefer to have another person inject the medication, and 31 (55 percent) said they would accept either approach. Forty-four of the 56 patients (79 percent) agreed with the statement, "If physician-assisted suicide were legal, I would request a lethal prescription from a physician." Only one patient agreed with the statement, "If physician-assisted suicide were available now, I would request a lethal prescription today with the intention of taking it to cause my death within the next month." Thirty-six of the 44 patients who would request a lethal prescription if it were legal to do so agreed with the statement, "I would probably keep the prescription available to potentially use in the future."

Family Care Givers

Ninety-one family care givers completed the survey. Four refused to participate or did not complete the survey, four patients had no care givers, and one patient refused to allow the care giver to participate. Sixty-seven care givers were spouses, 11 were children, 5 were friends, 4 were parents, 3 were other relatives, and 1 was a sibling (Table 4). Their mean age was 53 years, and 68 percent were women; they had known the patient for a mean of 30.2 years. Additional characteristics of the care givers are shown in Table 4.

The social, economic, and psychological impact of care giving was substantial. Sixty-seven care givers (74 percent) provided assistance with shopping, 59 (65 percent) with dressing, 49 (54 percent) with transferring from bed to chair, 40 (44 percent) with bathing, and 34 (37 percent) with use of the toilet. Fifty-nine care givers (65 percent) indicated that the patient needed moderate or substantial help. Although 89 of the 91 patients (98 percent) whose care givers completed the survey had health insurance, 21 of the care givers for those 89 patients (24 percent) reported that the patient did not have adequate finances to cover expenditures for medical care and equipment. Thirty-four care givers (37 percent) had lost income because of care giving, 16 (18 percent) had quit work to care for the patient, 11 (12 percent) had become ill while caring for the patient,

and 26 (29 percent) had delayed plans for themselves or their families. Twenty-one (23 percent) reported that their social lives suffered frequently, 20 (22 percent) reported that they frequently did not have enough time for themselves, and 30 (33 percent) felt stressed frequently because of caring for the patient. Twenty-two care givers (24 percent) were clinically depressed. None of these factors were associated with the care giver's support of or opposition to the patient's request for assistance with suicide.

On the six-point Likert scales, 29 percent of the care givers rated the patient's suffering as 4 or higher, and 30 percent rated the patient's severity of pain as 4 or higher. The care givers' perception of the patients' pain, suffering, and quality of life were unrelated to their attitude toward a request for assistance with suicide.

In 66 of 91 instances (73 percent), the care giver and the patient had similar attitudes toward physician-assisted suicide ($\kappa=0.46$). Overall, 56 care givers (62 percent) said they would support the patient's decision to take a lethal dose of medication. Nine care givers of patients who would consider assisted suicide said they would oppose such a request. Care givers who opposed assisted suicide were more likely to be religious than those who supported it, on all measures of religious beliefs and practices, including church membership (77 percent vs. 41 percent, $P<0.001$), importance of religion (90 vs. 60 on the 100-point Likert scale, $P<0.001$), and the frequency of religious practices (11.7 vs. 8.0, $P<0.001$). Seventy-six percent of the care givers were able to predict accurately the patient's willingness to consider taking a lethal dose of medication. In seven instances, the care giver believed the patient would not consider assisted suicide, whereas the patient indicated a willingness to consider it. In 14 instances, the care giver thought the patient might consider assisted suicide, but the patient indicated that he or she would not consider it.

DISCUSSION

Our study was conducted in Oregon and Washington during a time of considerable legal and political activity with regard to physician-assisted suicide. An assisted-suicide initiative, the Oregon Death with Dignity Act, was approved by Oregon voters in November 1994 but was not implemented because of a series of legal challenges.¹⁷ In view of the media's attention to these issues during the study period, it is likely that seriously ill persons in the Pacific Northwest had thought about whether they would choose assisted suicide for themselves and had discussed it with family members. The Oregon Death with Dignity Act was enacted in October 1997, after the data for the study had been collected.

Throughout the study period, it was uncertain whether patients with ALS would qualify for assisted

suicide under the Oregon Death with Dignity Act.¹⁷ By the time patients with ALS have less than six months to live (one of the criteria for qualification), they may have lost the use of their hands and have such difficulty swallowing that taking oral medication without assistance is no longer possible. The *Oregon Health Law Manual*, however, points out that there is wide room for interpretation of the law. Although the law expressly prohibits lethal injection, the manual states, "Interpretation may also be needed to clarify whether intravenous equipment . . . may be used by the patient to deliver a slow infusion of medication. One might reasonably interpret a prescription for an 'infusion' as distinct from an 'injection' and therefore within the scope of the Act."¹⁸ If such an interpretation is upheld, "self-administration" may be possible with assistive devices. If not, persons with ALS will probably not qualify for assistance with suicide under the Oregon law because of their disability.

A majority of the study participants with ALS said they would consider assisted suicide, and 44 percent said they would request a prescription for a lethal dose of medication from a physician if it became a legal option. Only one patient, however, would take the medicine immediately; most of the patients would reserve it for future use. These findings support the notion that some seriously ill persons gain psychological comfort from knowing that taking a lethal dose of medication is an option. Having control over one's death may be especially important for persons with a disease such as ALS, in which the inability to work, engage in pleasurable activities, care for oneself, and communicate constitutes a formidable loss of autonomy.¹⁹

Patients and family care givers with strong religious beliefs and frequent religious practices were much less likely to consider assisted suicide an option than those who were less religious. Although there has been concern that poor persons would be more likely to choose physician-assisted suicide if it were legalized,²⁰ like other investigators,²¹ we found that persons with higher socioeconomic status (as measured by educational level) were more likely to desire this option. Other factors thought to be relevant, including extent of social support, degree of disability, presence or absence of the perception that one is a burden to others, and presence or absence of pain and suffering, were not associated with attitudes toward physician-assisted suicide.

We found that hopelessness, but not depression, was associated with a willingness to consider assisted suicide. In contrast, one study of patients with human immunodeficiency virus infection and two studies of patients with cancer found that depression was associated with an interest in hastening death.²¹⁻²³ Major depression is characterized by depressed mood or loss of interest or pleasure in activities. Associated

findings include feelings of worthlessness or guilt; thoughts of death or suicide; difficulty concentrating, making decisions, or thinking; and changes in sleep, energy, appetite, and psychomotor activity. Hopelessness is a way of thinking in which negative expectations about the future are pervasive. Many depressed patients express hopelessness, but patients may be hopeless without being depressed.

In patients with psychiatric disorders, hopelessness is a better predictor of suicidal intent and actual suicide than is depression.^{24,25} Although some persons with ALS in our study expressed hopelessness, many similarly disabled persons did not. Understanding psychological adaptations that allow persons with ALS to avoid hopelessness may help to improve the care of such patients. Pessimism, hopelessness, and other forms of existential despair in the absence of depression may best be addressed by cognitive therapies that help the patient find meaning in the future, reduce fears, and avoid focusing on the worst outcomes.^{26,27}

Fatigue on the part of family care givers has been implicated as a factor in requests for physician-assisted suicide. Cherny and colleagues²⁷ identified four components of such fatigue: persistently inadequate relief of the patient's suffering, inadequate resources to provide care without compromising the family's future welfare, unrealistic expectations of oneself as a care giver and of medical care, and emotional distress. In a study of 2661 seriously ill patients,²⁸ economic hardship was associated with family members' desire to forgo life-sustaining medical treatments. In our study, however, the care giver's perception of the patient's suffering, level of social support, emotional distress (depression), and economic burden were not associated with attitudes toward assisted suicide (data not shown).

Several shortcomings and limitations of our study should be noted. We did not investigate the factors that lead a person who desires or requests a lethal dose of medication to take it. The sample was small, and it consisted of a subgroup of patients with ALS who were interested in participating in research; whether the results were therefore biased is unknown. The majority of patients were white, college-educated, and male. Other investigators have found that these characteristics are correlated with favorable attitudes toward assisted suicide and euthanasia.^{21,22,29,30} The diagnosis of depression was not confirmed by a mental health professional. Because of potential impairments in the patients' oral and written communication, questions were asked in a yes-no format, which resulted in a diminished range of possible responses for several measures, including the key variable — willingness to consider taking a prescription for a lethal dose of medication.

Our study suggests that where physician-assisted suicide is legal, some terminally ill patients may re-

quest a prescription for a lethal dose of medication well before they intend to take it. Such requests may be prompted more by pessimism about the future than by current suffering. Physicians may be able to help patients by exploring their feelings of dread and enhancing their sense of control.

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REFERENCES

1. Ringel SP, Murphy JR, Alderson MK, et al. The natural history of amyotrophic lateral sclerosis. *Neurology* 1993;43:1316-22.
2. Milton N. Lessons from Rodriguez v. British Columbia. *Issues Law Med* 1995;11:123-48.
3. Hendin H. *Seduced by death: doctors, patients, and the Dutch cure*. New York: W.W. Norton, 1997.
4. Brooks BR. El Escorial World Federation of Neurology criteria for the diagnosis of amyotrophic lateral sclerosis. *J Neurol Sci* 1994;124(Suppl):96-107.
5. Broadhead WE, Gehlbach SH, de Gruy FV, Kaplan BH. The Duke-UNC Functional Social Support Questionnaire: measurement of social support in family medicine patients. *Med Care* 1988;26:709-23.
6. Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: the hopelessness scale. *J Consult Clin Psychol* 1974;42:861-5.
7. Robins LN, Helzer JE, Croughan J, Ratcliff KS. National Institute of Mental Health Diagnostic Interview Schedule: its history, characteristics and validity. *Arch Gen Psychiatry* 1981;38:381-9.
8. Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. *Gerontologist* 1980;20:649-55.
9. Moberg DO. The integration of older members in the church congregation. In: Rose AM, Peterson WA, eds. *Older people and their social world: the sub-culture of the aging*. Philadelphia: F.A. Davis, 1965:125-40.
10. Bergner M, Bobbitt RA, Carter WB, Gilson BS. The Sickness Impact Profile: development and final revision of a health status measure. *Med Care* 1981;19:787-805.
11. Bombardier C, Ware J, Russell IJ, Larson M, Chalmers A, Read JL. Auranofin therapy and quality of life in patients with rheumatoid arthritis: results of a multicenter trial. *Am J Med* 1986;81:565-78.
12. Pearlman RA, Uhlmann RF. Quality of life in elderly, chronically ill outpatients. *J Gerontol A Biol Sci Med Sci* 1991;46:M31-M38.
13. Covinsky KE, Goldman L, Cook EF, et al. The impact of serious illness on patients' families. *JAMA* 1994;272:1839-44.
14. Lord FM, Novick MR. *Statistical theories of mental test scores*. Reading, Mass.: Addison-Wesley, 1968.
15. Armitage P, Berry G. *Statistical methods in medical research*. 2nd ed. Oxford, England: Blackwell Scientific, 1987.
16. Fleiss JL. *Statistical methods for rates and proportions*. 2nd ed. New York: John Wiley, 1981.
17. Oregon Death with Dignity Act, *Oreg. Rev. Stat. §§ 127.800-.897* (1994).
18. Lee BC, Stutsman ED, Hagan KT. Physician assisted suicide. In: Billings J, ed. *Oregon health law manual: life and death decisions*. Vol. 2. Portland: Oregon State Bar, 1997.
19. Cassel C. Patient autonomy as therapy. In: Mulder DW, ed. *The diagnosis and treatment of amyotrophic lateral sclerosis*. Boston: Houghton Mifflin, 1980:325-32.
20. Physician-assisted suicide: toward a comprehensive understanding: report of the Task Force on Physician-assisted Suicide of the Society for Health and Human Values. *Acad Med* 1995;70:583-90.
21. Emanuel EJ, Fairclough DL, Daniels ER, Clarridge BR. Euthanasia and physician-assisted suicide: attitudes and experiences of oncology patients, oncologists, and the public. *Lancet* 1996;347:1805-10.
22. Breitbart W, Rosenfeld BD, Passik SD. Interest in physician-assisted suicide among ambulatory HIV-infected patients. *Am J Psychiatry* 1996;153:238-42.
23. Chochinov HM, Wilson KG, Enns M, et al. Desire for death in the terminally ill. *Am J Psychiatry* 1995;152:1185-91.
24. Beck AT, Brown G, Berchick RJ, Stewart BL, Steer RA. Relationship between hopelessness and ultimate suicide: a replication with psychiatric outpatients. *Am J Psychiatry* 1990;147:190-5.

25. Minkoff K, Bergman E, Beck AT, Beck R. Hopelessness, depression, and attempted suicide. *Am J Psychiatry* 1973;130:455-9.
26. Massie MJ, Gagnon P, Holland JC. Depression and suicide in patients with cancer. *J Pain Symptom Manage* 1994;9:325-40.
27. Cherny NI, Coyle N, Foley KM. The treatment of suffering when patients request elective death. *J Palliat Care* 1994;10:71-9.
28. Covinsky KE, Landefeld CS, Teno J, et al. Is economic hardship on the families of the seriously ill associated with patient and surrogate care preferences? *Arch Intern Med* 1996;156:1737-41.
29. Blendon RJ, Szalay US, Knox RA. Should physicians aid their patients in dying? The public perspective. *JAMA* 1992;267:2658-62.
30. Caralis PV, Davis B, Wright K, Marcial E. The influence of ethnicity and race on attitudes toward advance directives, life-prolonging treatments, and euthanasia. *J Clin Ethics* 1993;4:155-65.

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