Elderly Outpatients Respond Favorably To A Physician-Initiated Advance Directive Discussion

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Background: **Little is known about the emotional impact of physician-initiated advance directive discussions.**

Methods: **One hundred ambulatory patients aged 65 years and older were randomly assigned to receive either a physician-initiated discussion of advance directive choices or a discussion of health promotion issues. Prediscussion, immediate postdiscussion, and 1-week postdiscussion measures of positive and negative affect were measured for both groups.**

Results: **Neither discussion topic resulted in adverse emotional or attitudinal responses. Only the advance directive participants showed positive affective and attitudinal responses to the discussion, including an increase in positive affect, an increased sense of physician-patient understanding, and increased thought and discussion about life-support issues in the week following the discussion. For those participants receiving the advance directive discussion, longer physician-patient relationships and higher educational levels significantly predicted a more positive affective response. Lower scores on indices of mental and physical health and a stronger belief that physicians should discuss advance directive issues significantly predicted a more negative affective response to the advance directive discussion.**

***Conclusions*: Physicians should anticipate positive emotional responses when they initiate advance directive discussions with their elderly outpatients. Advance directive discussions will be received most positively by patients who enjoy good psychological and physical health and when initiated in the context of an established physician-patient relationship. (J Am Board Fam Pract 1993; 6:473-482.)**

Despite increasing acceptance of advance directives for medical care,[1-7] few patients have discussed life-support issues with their physicians,[8-17] and fewer still have executed a formal advance directive document.[13,15,18] Limited use of advance directives is curious in light of the overwhelming endorsement by physicians[12] and patients[8,9,14-17,19-21] of discussions of life-support issues. The routine discussion of advance directive issues might be hampered by uncertainty concerning the many practical issues surrounding advance directive discussions. Specifically, the emotional impact of advance directive discussions on healthy outpatients remains unclear. We explored this issue by examining the emotional and attitudinal reactions of healthy elderly outpatients to a physician-initiated advance directive discussion.

Many proponents of advance directives recommend routine physician-initiated advance directive discussions with healthy elderly outpatients.[1,16,17,22,23] While the Patient Self-Determination Act[7] should increase awareness and utilization of advance directives among hospitalized and institutionalized patients, its impact on outpatient discussion of advance directives is uncertain.[22] Most elderly patients believe that advance directive discussions should be initiated by physicians while patients are still healthy.[8,9,14-17,19,20] Physicians might hesitate to initiate advance directive discussions because they believe their patients will bring up the topic if they wish to discuss it. Alternatively, some physicians argue that treatment preferences elicited from a healthy patient might not reflect that patient's wishes when faced with a life-threatening illness.[24] Finally, physicians might avoid initiating advance directive discussions with healthy out-

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patients because of concerns that such an overture will engender anxiety or some other adverse emotional reaction.[19,25,26]

Previous studies have suggested that most patients respond positively to advance directive discussions.[9,11,17,20,24,25,27] Data from these studies are difficult to interpret for two reasons. First, most of the studies have one or more methodological limitations including (1) unvalidated single-item measures of attitude or affect, (2) measurements limited to negative affect, (3) measurements limited to the postdiscussion period, and (4) lack of a control discussion condition to equalize the possible positive emotional effects of any physician-initiated discussion.[9,11,17,20,25,27,28] Second, although previous studies have shown that most patients respond positively to advance directive discussions, some patients experience negative reactions.[17,20,25] These studies did not examine what, if any, characteristics of the patient, physician, or patient-physician relationship were associated with particularly positive or negative emotional reactions.

Our study examined the emotional and attitudinal reactions of ambulatory elderly outpatients to a physician-initiated advance directive discussion. In contrast to earlier research, we used well-validated measures of both positive and negative affective responses. Unlike previous researchers who measured only postdiscussion attitudes, we measured participants' responses at three times: prediscussion, immediately postdiscussion, and 1-week postdiscussion. To address concerns that a no-discussion control group might not provide the best comparison, we randomly assigned some participants to participate in a physician-initiated control discussion of health promotion recommendations. Finally, to find out which participants were likely to respond negatively to a physician-initiated advance directive discussion, measures of the participants' physical, psychological, and social functioning obtained from the prediscussion interview and participants' medical records were analyzed for their ability to predict affective responses.

Methods

Participant Selection

Participants eligible for the study were patients coming to the Family Practice Center of Akron (FPC) who were aged 65 years and older and who had completed at least one previous visit with their physician. The FPC is a university-affiliated, urban, community-based family practice residency. We reviewed during a 6-month period the medical records of all patients fitting this description who either (1) were scheduled for a routine visit at the FPC, or (2) had just completed a routine visit at the FPC. Exclusion criteria were spousal participation in the study or a charted diagnosis of dementia, depression, schizophrenia, severe communication disorder, or terminal illness. Eligible participants were contacted by telephone and invited to participate.

Sample Size Calculation

Multiple regression analyses planned for the advance directive discussion required the greatest number of participants. Assuming a maximum of 8 predictor variables for each regression equation and setting alpha at 0.05 and statistical power at 0.80, 75 participants can provide for adequate power to detect medium-to-small-sized effects ($R^2 = 0.20$).[29] Because our primary interest was to identify predictors of affective reactions to advance directive discussions, multiple regression analyses were planned for the advance directive discussion participants only. Accordingly, the control discussion group did not require an equal number of participants. Using numbers randomly assigned to all elderly FPC patients' charts, we assigned 85 participants to the advance directive discussion group and 15 participants to the control discussion group.

Prediscussion Interview

There were 103 participants who met the study criteria. Each patient was asked to arrive at the FPC 30 minutes before the appointed time for the physician visit to complete a prediscussion interview. This interview included the Short Portable Mental Status Questionnaire (SPMSQ),[30] the Center for Epidemiological Studies Depression Scale (CES-D),[31] the Positive and Negative Affect Schedule (PANAS),[32] questions measuring attitudes toward life support, the Multidimensional Health Locus of Control Scale (MHLC),[33] and the Medical Outcomes Study Short Form (MOS).[34]

Mental Status and Depression Screening

No participants were excluded on the basis of an SPMSQ[30] score greater than 5 (indicating pos-

sible dementia). Two participants with CES-D scores greater than 16 (indicative of possible depression)[31] were excluded. One additional subject was excluded because of inability to understand the interview questions.

Positive and Negative Affect
The PANAS has proven reliability and validity[32] and has been used in research on a variety of populations[35,36] as a measure of current mood or affective state. Respondents indicated how much each of 20 adjectives described "how you feel right now" on a 5-point scale. The PANAS generates conceptually distinct positive affect (e.g., enthusiastic, interested) and negative affect (e.g., upset, afraid) scores.

Life-Support Attitudes
Using 6-point Likert scales, participants rated their agreement with four statements about life support (e.g., "I believe my physician understands my wishes with respect to life-support measures," "Doctors should discuss the use of life support with their patients as part of their routine medical care").

Multidimensional Health Locus of Control Scale (MHLC)
The MHLC is an 18-item scale that measures control-related beliefs specific to health outcomes.[33,37,38]

Medical Outcomes Study Short Form (MOS)
The MOS is a 20-item index of health status that yields six subscores: physical functioning, social functioning, role functioning, mental health, bodily pain, and general health perceptions.[34]

Demographic and Medical Record Data
The following information was collected from the patients during the pre-examination interview or from the patients' medical records: age, sex, race, religion, years of education, number of hospitalizations in the last 5 years, number of medications, months with current physician, and number of visits with current physician.

Physician Visit
After completing the prediscussion interview, participants saw their physician for approximately 30 minutes to allow 15 minutes for a routine office visit and 15 minutes for the study discussion. All FPC physicians, 5 faculty and 15 residents, received training in the conduct of study discussions to improve standardization.

Advance Directive Discussion
Physicians provided the participants with scripted information about the purpose of advance directives and descriptions of cardiopulmonary resuscitation, mechanical ventilation, and artificial nutrition and hydration. Physicians expanded upon the written script as needed. Physicians then read two scenarios excerpted from Emanuel and Emanuel's medical directive document[39]: (1) coma with a low probability of recovery, and (2) an advanced stage of a progressive dementing illness. Participants stated their preferences for receiving cardiopulmonary resuscitation and artificial nutrition and hydration in each scenario based on a 5-point scale from 1 (definitely do not want) to 5 (definitely want).

Health Promotion Discussion
Physicians spent approximately 15 minutes discussing patient preferences about health promotion issues excerpted from the US Preventive Services Task Force.[40]

Postdiscussion Interview
Immediately after the physician visit, all participants were administered the PANAS and life-support attitude questions for a second time. Participants also indicated how much during the past week they had (1) thought about advance directive issues, (2) discussed advance directive issues with family members, and (3) discussed advance directive issues with friends.

Telephone Follow-up
One week after the physician visit, all participants were contacted by telephone and again administered the PANAS, life-support attitudes, and advance directive thought and discussion questions.

Institutional Review
This project was approved by the Institutional Review Board for Human Investigation at Akron City Hospital and the Kent State University Human Subjects Review Board. All patients and physicians gave informed consent prior to their participation.

Analysis
Cronbach alpha coefficients were calculated to assess the internal consistency of all scales. Cronbach

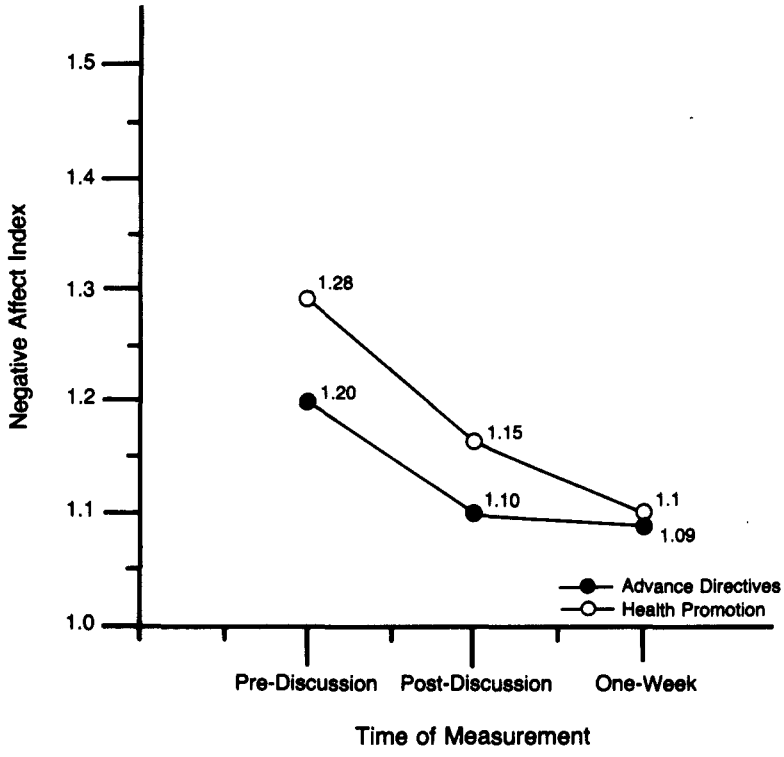

Figure 1. Mean scores on negative affect index for advance directive and health promotion discussion participants at prediscussion, immediate postdiscussion, and 1-week postdiscussion. Higher scores indicate more negative affect.

alpha coefficients for all scales and subscales were > 0.6 with the exception of the life-support attitude items. Accordingly, the life-support attitude items were examined individually in all analyses. All other individual items were combined into appropriate indices.

Chi-square analyses were conducted on all categorical variables, and the Student t-tests for independent samples were conducted to compare the advance directive and health promotion participants on demographic characteristics and prediscussion variables. We conducted 2 (advance directive versus health promotion discussion) × 3 (prediscussion versus immediate postdiscussion versus 1-week follow-up) mixed-design analyses of variance (ANOVAs) on the positive and negative affect indices and the four life-support attitude items. A 2 (advance directive versus health promotion discussion) × 2 (immediate postdiscussion versus 1-week follow-up) mixed-design ANOVA was conducted on the advance directive thought and discussion index.

For each independent measure, additional analyses of covariance (ANCOVAs) were conducted to control for those demographic and prediscussion variables found to be significantly different between discussion groups.

A series of ordinary least-squares hierarchical multiple regression analyses were conducted on the data from the 85 participants receiving the advance directive discussion. The participants' immediate postdiscussion positive and negative affect scores were the criterion variables. To index change in affect, pretest levels of the appropriate affect variable were entered into each equation first. The remaining variables were then entered based on the stepwise procedure.

Because of the large number of potential predictors, the regression analyses were done in two stages. For the initial set of analyses, variables were grouped into five categories: demographics, psychological health (CES-D score), physical health (MOS functional subscales), social and health relationships (months with physician), and preexisting views regarding advance directive issues (life-support attitude items). The significant predictors from each category (based on an inclusion criteria of $P < 0.15$) were then entered into the two final equations to determine their relative predictive power. The final regression equations used the more stringent inclusion criteria of $P < 0.05$.

Results

The mean age of the sample was 72.1 (range 65 to 89) years. The sample included 68 percent women, 48 percent married, 14 percent African-American, and 78 percent Protestant. The mean years of education was 11.9 (range 4 to 18). Most study participants had a well-established relationship with their physician, evidenced both by mean number of months with physician (29.6 months [range 1 to 192]) and mean number of visits to their physician (13.1 visits [range 1 to 73]). Although most members of the sample had recorded a will (71 percent), few had executed a living will (12 percent), durable power of attorney (6 percent), or any other sort of advance care document (3 percent).

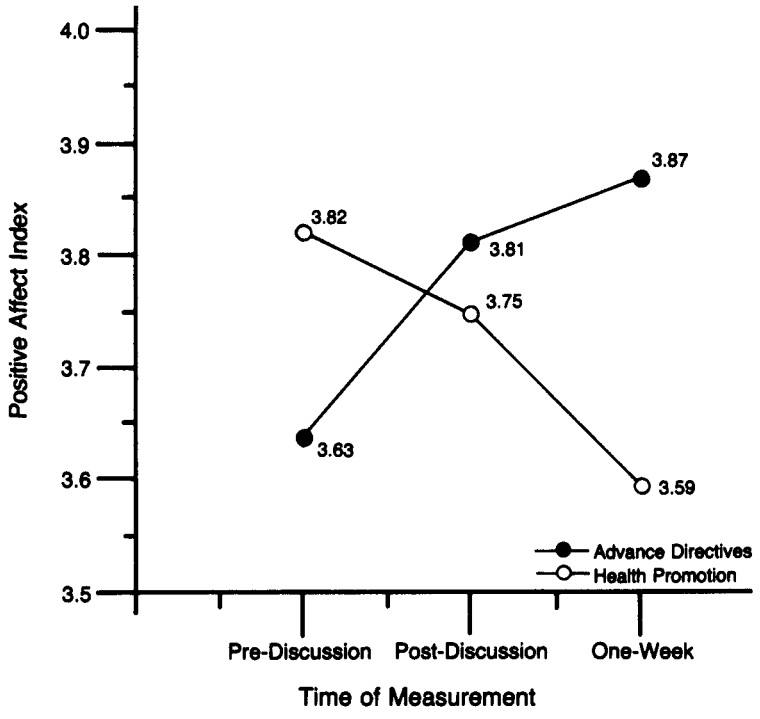

Figure 2. Mean scores on positive affect index for advance directive and health promotion discussion participants at prediscussion, immediate postdiscussion, and 1-week postdiscussion. Higher scores indicate more positive affect.

Three significant differences were found between participants assigned to the advance directive and health promotion discussion groups. Advance directive discussion participants had visited their physician more often ($t = 2.08$, $df = 98$, $P < 0.05$), reported higher levels of depressive symptomatology on the CES-D ($t = 2.35$, $df = 98$, $P < 0.05$), and more strongly endorsed the statement that their physician understood their life-support wishes ($t = 2.90$, $df = 98$, $P < 0.05$) than did health promotion discussion participants.

Comparison of Postdiscussion Reactions

For each ANOVA reported below, three ANCOVAs were also conducted in which self-reported depressive symptomatology, prediscussion level of the participants' beliefs that their physician understood their life-support wishes, and number of visits to physician were used as covariates. All ANCOVAs yielded results identical to those found in the corresponding ANOVA.

Negative Affect

Figure 1 shows that despite initially low negative affect scores, both the advance directive and health promotion discussion participants showed a decrease in negative affect immediately after the physician discussion that maintained itself at 1-week follow-up (time main effect $F[2, 196] = 7.39$, $P < 0.001$).

Positive Affect

Figure 2 shows that participants receiving the advance directive discussion showed an increase in self-reported positive affect from prediscussion ($\bar{X} = 3.63$) to immediate postdiscussion ($\bar{X} = 3.81$) to 1-week postdiscussion ($\bar{X} = 3.87$). In contrast, those receiving the health promotion discussion showed a decrease in self-reported positive affect from prediscussion ($\bar{X} = 3.82$) to immediate postdiscussion ($\bar{X} = 3.75$) to 1-week postdiscussion ($\bar{X} = 3.59$ (time × discussion topic interaction $F[2, 196] = 4.71$, $P < 0.05$). Advance directive discussion participants reported significantly greater positive affect immediately after the discussion than immediately before ($F[1, 84] = 15.15$, $P < 0.001$).

Life-Support Attitudes

ANOVAs conducted individually on each of the four life support attitude items revealed significant effects on only two items. Figure 3 shows a dramatic postdiscussion increase in the advance directive discussion participants' beliefs that their physician understood their life-support wishes (prediscussion $\bar{X} = 2.04$, immediate postdiscussion $\bar{X} = 5.96$). This increase did not occur in the health promotion discussion participants (time × discussion topic interaction $F[2, 196] = 62.29$, $P < 0.0001$).

Figure 4 shows that participants receiving both discussions expressed significantly stronger agreement with routine advance directive discussion during the immediate postdiscussion and 1-week follow-up interviews than at the prediscussion interview, $F(2, 196) = 5.18$, $P < 0.05$.

Thought and Discussion of Advance Directive Issues

Figure 5 illustrates that all participants tended to think about and discuss advance directive

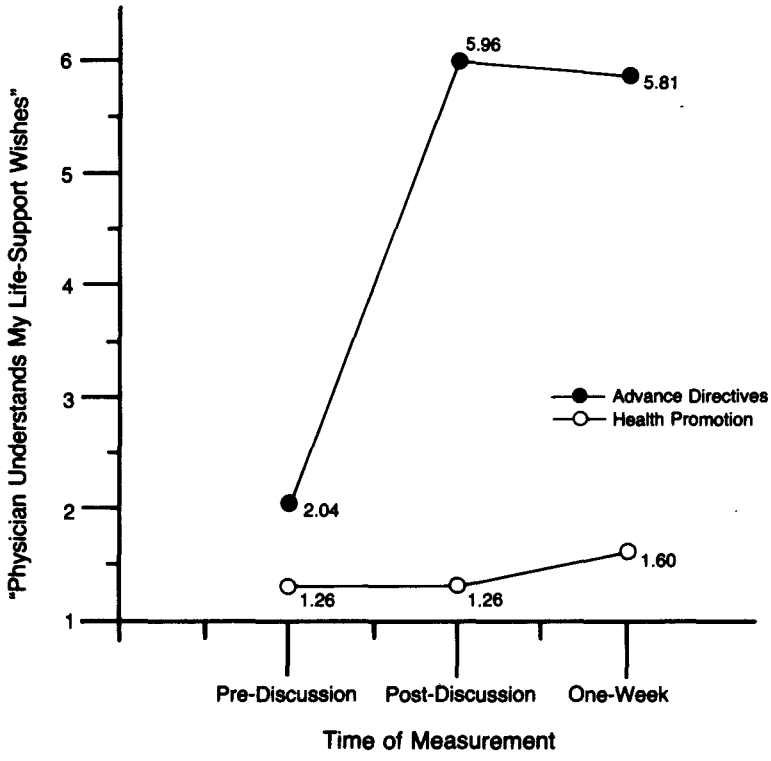

Figure 3. Mean perceived physician understanding of life-support wishes for advance directive and health promotion discussion participants at prediscussion, immediate postdiscussion, and 1-week postdiscussion. Higher scores indicate greater perceived understanding.

issues more often during the week after participation in the study than in the previous week (time main effect $F[1, 196] = 19.63$, $P < 0.0001$). This tendency was more pronounced in the advance directive discussion participants than in the health promotion discussion participants (time × discussion topic interaction $F[2, 196] = 17.50$, $P < 0.01$).

Predictors of Immediate Affective Reactions to the Advance Directive Discussion

Table 1 shows the results of the two final regression equations. The greater a patient's education level and the longer a patient had been with his or her physician, the more positive the affective response to the advance directive discussion (59 percent of the total variance). More hospitalizations, poorer physical and mental function (MOS), greater powerful others health locus of control, and stronger endorsement of advance directive discussions were associated with a more negative affective response to the advance directive discussion (63 percent of the total variance).

Discussion

This study examined the emotional and attitudinal reactions of healthy elderly outpatients to a physician-initiated advance directive discussion from two different perspectives. First, reactions of participants engaging in an advance directive discussion were compared with reactions of those involved in a control discussion about health promotion issues. Differences between prediscussion and postdiscussion levels of affective state and attitudes were examined to address whether a physician-initiated advance directive discussion, on average, produced positive or negative reactions. Second, multiple regression analyses were used to examine whether specific patient characteristics can predict particularly positive or negative emotional responses to a physician-initiated advance directive discussion.

Participants showed no evidence of adverse emotional or attitudinal reactions to the advance directive discussion. The current findings, combined with past research showing similar results,[9,11,16,17,20,24,25,27,28] make a strong empirical case that discussions of advance directive issues are not distressing for most elderly outpatients.

Participants of both the advance directive discussion and health promotion discussion showed a significant decrease in negative affect from prediscussion to immediate postdiscussion levels. This decrease was still evident at 1-week follow-up. In addition, the advance directive discussion participants showed an increase in positive affect from prediscussion to immediate and 1-week postdiscussion levels. The uniquely positive affective reaction of the advance directive discussion participants provides strong evidence against the existence of negative emotional reactions to physician-initiated advance directive discussions.

Positive and negative affects as measured by the PANAS are conceptually distinct and statistically independent aspects of affective state.[32] As such, they should not necessarily be expected to show similar, but inverse, responses to identical inter-

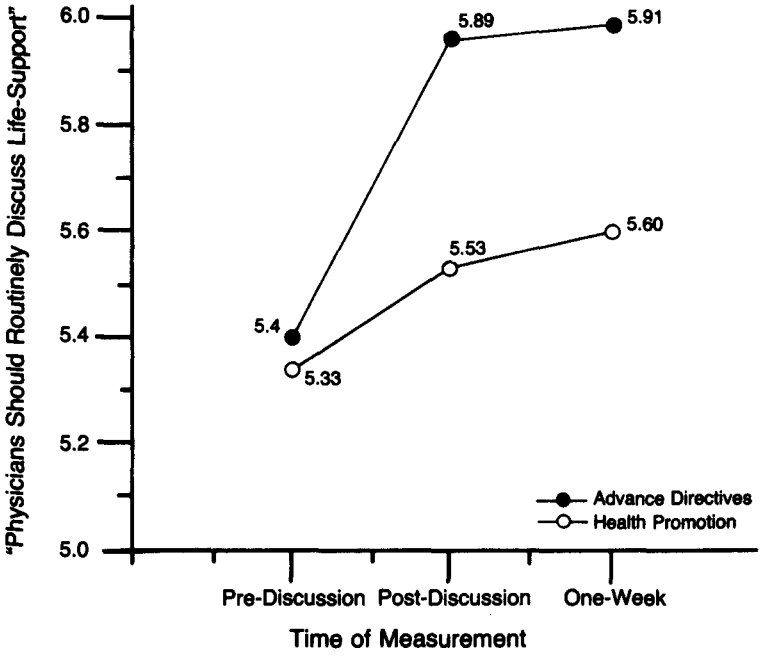

Figure 4. Mean endorsement of routine life-support discussions for advance directive and health promotion discussion participants at prediscussion, immediate postdiscussion, and 1-week postdiscussion. Higher scores indicate greater endorsement.

ventions. Negative affect is an amalgam of anxiety, fear, and negative self-evaluation. Positive affect is a measure of interest, enthusiasm, and feelings of empowerment. While both the advance directive and health promotion discussion participants showed a decrease in anxiety and fear after their physician visit, only the advance directive discussion piqued participants' interest and increased their sense of power and control.

It is unlikely that the more positive reactions of the advance directive participants were due to a Hawthorne effect. The only difference between the health promotion and advance directive discussion conditions was the content of the physician-initiated discussion. The health promotion discussion was intended to empower participants by informing them and allowing them to make choices about relevant health promotion issues.

Consistent with past research,[8,9,14-17,19-21] participants showed overwhelmingly positive attitudes toward routine advance directive discussion when interviewed before their physician visit (overall $\bar{X} = 5.4$). Even with high initial levels of agreement, participants from both groups showed increased agreement with this item immediately after their physician visit. This increase was still evident 1 week later. Eighty-nine percent of advance directive discussion participants indicated the strongest possible agreement that such discussions should be a routine part of medical care.

Advance directive discussion participants showed a dramatic postdiscussion increase in their belief that their physician understood their life-support preferences. Even though the advance directive discussion was highly structured and did not probe many of the personal and complex issues surrounding preferences for life-sustaining therapies, it still enhanced a strong sense of mutual understanding between patient and physician.

Evidence supporting the likelihood of continuing discussion of advance directive issues derives

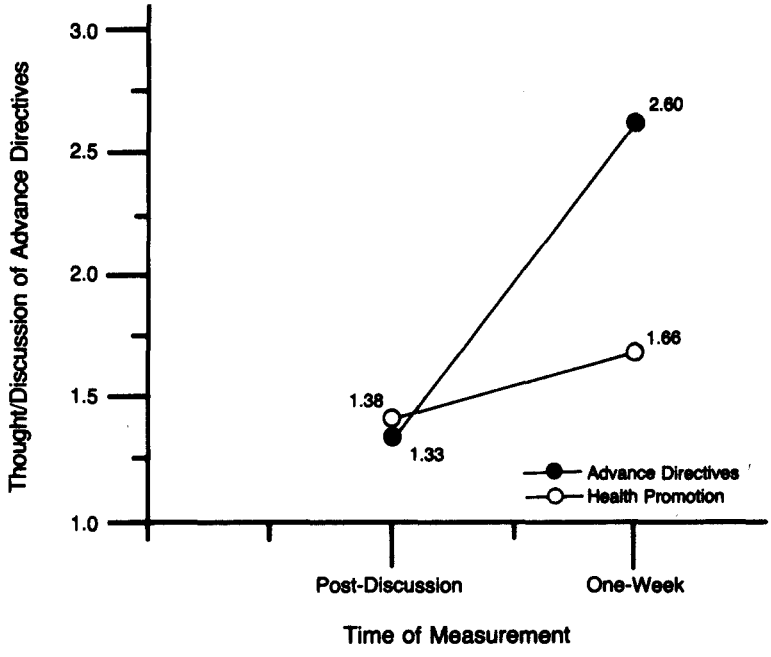

Figure 5. Mean scores of advance directive thought and discussion index for advance directive and health promotion discussion participants at immediate postdiscussion, and 1-week postdiscussion. Higher scores indicate more thought and discussion.

Table 1. Results of the Final Multiple Regression Analyses on Immediate Postdiscussion Positive and Negative Affect.

Variable	R^2	Beta	t^*
Positive affect equation			
Pretest positive affect	0.53	0.69	9.59
Years of education	0.56	0.18	2.51
Months with physician	0.59	0.16	2.23
Negative affect equation			
Pretest negative affect	0.41	0.44	5.29
Number of hospitalizations	0.51	0.21	2.83
Physical functioning	0.55	−0.16	−2.17
Mental health	0.58	−0.26	−3.05
Belief in powerful others	0.61	0.15	2.17
Physicians should discuss advance directives	0.63	0.15	2.04

*$P < 0.05$.

from the reports of the advance directive discussion participants in the week following their physician visit. The advance directive discussion inspired the participants to continue thinking about and discussing advance directive issues after the physician visit. Involvement of family members in such discussions is important because physicians frequently turn to family members to make decisions about life-sustaining treatments for patients who suffer decisional incapacity.[41] Encouragement of open discussions about advance directive issues among patients and family members could produce the most important long-term benefit of a physician-initiated advance directive discussion.

Our study went beyond earlier research by examining the specific demographic, psychological, physical, and social predictors of positive and negative emotional reactions to advance directive discussions.

Advance directive discussion participants reported a less negative and more positive immediate reaction to the advance directive discussion when they enjoyed good psychological and physical health. The effect of the physical health variable was confirmed by both subjective (self-reported functional status) and objective (number of hospitalizations) indices. A similar positive response was found for participants with higher educational levels and longer physician-patient relationships.

Participants who believed their health outcomes to be controlled by powerful others, such as health professionals, responded relatively negatively to the advance directive discussion. Perhaps these individuals became uncomfortable when the physician initiated a discussion that shifted control about an important health decision back to the individual. These negative emotional reactions do not necessarily indicate that such individuals did not want to talk about advance directive issues with their physician. Lo, et al.[17] found that even patients who had negative reactions to thinking or talking about life-sustaining treatments still expressed a desire to talk about the issues.

A paradoxical relation was found between attitudes about advance directive discussions and emotional reactions. Individuals who most strongly endorsed the routine discussion of advance directive issues had relatively negative reactions to these discussions. Explanations for this finding require further study.

The regression analyses show that the generalizability of the results is not compromised by the characteristics of the sample. Neither positive nor negative emotional reactions to the advance directive discussion were associated with sex, religion, race, age, or being cared for by faculty versus resident physicians.

Generalization of the study findings to routine outpatient practice might be limited by several factors. First, in practice, physicians would probably ask patients to agree to return for a longer visit to allow time for an advance directive discussion. The effect of an earlier agreement to discuss advance directive issues could change the dynamics of the discussion in unknown ways. Second, the emotional reactions of participants who refused to consent to a study about discussing health preferences remain unknown. It is conceivable that initiating an advance directive discussion with an unwilling patient could create negative emotional reactions. Third, variations in the enthusiasm, experience, and skill of physicians discussing advance directive issues could alter the emotional reactions of patients. Fourth, participants' increase in reported thought and discussion about advance directive issues might have been due to the demand characteristics of repeated questioning about advance directives, reflecting participants' desires to please the investigators. Finally, most of the statistically significant differences in mean affective and attitudinal scores reflect relatively small numerical differences that are unlikely to result in clinically important changes in patient affect.

Conclusions

Elderly outpatients experienced no adverse emotional or attitudinal effects following a physician-initiated advance directive discussion. In fact, the discussion produced a variety of positive effects. The multiple regression analyses showed that, in terms of optimal reactions, the "advance" in advance medical directives should be stressed. More positive emotional reactions can be anticipated when discussions of life-sustaining treatment preferences occur in the outpatient setting, before the patient's physical and psychological status deteriorates. Such discussions can lead to increased thought about advance directive preferences and increased discussion of advance directive issues with family and friends. Patients strongly endorse physician-initiated discussions about preferences for life-sustaining therapies. In addition to meeting patients' needs, these discussions can enhance established physician-patient relationships.

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References

1. Orentlicher D. From the Office of the General Counsel. Advance medical directives. JAMA 1990; 263:2365-7.
2. AGS position statement: medical treatment decisions concerning elderly persons. New York: American Geriatrics Society, May 1991.
3. Deciding to forego life-sustaining treatment: a report on the ethical, medical and legal issues in treatment decisions. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Washington, DC: US Government Printing Office, 1983.
4. Guidelines on the termination of life-sustaining treatment and the care of the dying. A report by the Hasting Center. Briarcliff Manor, NY: The Hasting Center, 1987.
5. American Association of Retired Persons. Tomorrow's choices: preparing now for future legal, financial, and health care decisions. Washington, DC: American Association of Retired Persons, 1988.
6. Mishkin B. United States Senate, Special Committee on Aging. A matter of choice: planning ahead for health care decisions. Washington, DC: American Association of Retired Persons, 1986.
7. The Omnibus Budget Reconciliation Act of 1990. Public Law 101-508, Section 4206, 42 USC 1395cc(a)(1). Medicare provider agreements assuring the implementation of a patient's right to participate in and direct health care decisions affecting the patients; Section 4751, 42 USC 1396a(a). Requirements for advanced directives under state plans for medical assistance. Washington, DC: US Government Printing Office, 1990.
8. Schonwetter RS, Teasdale TA, Taffet G, Robinson BE, Luchi RJ. Educating the elderly: cardiopulmonary resuscitation decisions before and after intervention. J Am Geriatr Soc 1991; 39:372-7.
9. Shmerling RH, Bedell SE, Lilienfeld A, Delbanco TL. Discussing cardiopulmonary resuscitation: a study of elderly outpatients. J Gen Intern Med 1988; 3:317-21.
10. Everhart MA, Pearlman RA. Stability of patient preferences regarding life-sustaining treatments. Chest 1990; 97:159-64.
11. Havlir D, Brown L, Rousseau GK. Do not resuscitate discussions in a hospital-based home care program. J Am Geriatr Soc 1989; 37:52-4.
12. Bedell SE, Delbanco TL. Choices about cardiopulmonary resuscitation in the hospital. When do physicians talk with patients? N Engl J Med 1984; 310:1089-93.
13. Cohen-Mansfield J, Rabinovich BA, Lipson S, Fein A, Gerber B, Weisman S, et al. The decision to execute a durable power of attorney for health care and preferences regarding the utilization of life-sustaining treatments in nursing home residents. Arch Intern Med 1991; 151:289-94.
14. Ebell MH, Smith MA, Seifert KG, Polsinelli K. The do-not-resuscitate order: outpatient experience and decision-making preferences. J Fam Pract 1990; 31:630-6.
15. Gamble ER, McDonald PJ, Lichstein PR. Knowledge, attitudes, and behavior of elderly persons regarding living wills. Arch Intern Med 1991; 151: 277-80.
16. Frankl D, Oye RK, Bellamy PE. Attitudes of hospitalized patients toward life support: a survey of 200 medical inpatients. Am J Med 1989; 86:645-8.
17. Lo B, McLeod GA, Saika G. Patient attitudes to discussing life-sustaining treatment. Arch Intern Med 1986; 146:1613-5.
18. High DM. All in the family: extended autonomy and expectations in surrogate health care decision-making. Gerontologist 1988; 28(Suppl):46-51.
19. Kohn M, Menon G. Life prolongation: views of elderly outpatients and health care professionals. J Am Geriatr Soc 1988; 36:840-4.
20. Finucane TE, Shumway JM, Powers RL, D'Alessandri RM. Planning with elderly outpatients for contingencies of severe illness: a survey and clinical trial. J Gen Intern Med 1988; 3:322-5.
21. Gunasekera NP, Tiller DJ, Clements LT, Bhattacharya BK. Elderly patients' views on cardiopulmonary resuscitation: Age Ageing 1986; 15: 364-8.
22. Greco PJ, Schulman KA, Lavizzo-Mourey R, Hansen-Flaschen J. The Patient Self-Determination Act and the future of advance directives. Ann Intern Med 1991; 115:639-43.

23. Saultz J. Routine discussion of advance health care directives: are we ready? An affirmative view. J Fam Pract 1990; 31:653-9.
24. Davidson KW, Hackler C, Caradine DR, McCord RS. Physicians' attitudes on advance directives. JAMA 1989; 262:2415-9.
25. Stolman CJ, Gregory JJ, Dunn D, Levine JL. Evaluation of patient, physician, nurse, and family attitudes toward do not resuscitate orders. Arch Intern Med 1990; 150:653-8.
26. Charlson ME, Sax FL, MacKenzie CR, Fields SD, Braham RL, Douglas RG Jr. Resuscitation: how do we decide? A prospective study of physicians' preferences and the clinical course of hospitalized patients. JAMA 1986; 255:1316-22.
27. Mitchell JM, Brummel-Smith K. DNR discussions with geriatric inpatients: psychological reactions. Presented at the American Geriatrics Society meeting, May 17-20, 1990, Atlanta, GA.
28. Amchin J, Perry S, Manevitz A, Cella D, Miller D. Interview assessment of critically ill patients regarding resuscitation decisions. A case study in ethics research. Gen Hosp Psychiatry 1989; 11:103-8.
29. Milton S. A sample size formula for multiple regression studies. Public Opinion Q 1986; 50:112-8.
30. Pfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. J Am Geriatr Soc 1975; 23:433-41.
31. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas 1977; 1:385-401.
32. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. J Pers Soc Psychol 1988; 54:1063-70.
33. Wallston KA, Wallston BS, DeVellis R. Development of the Multidimensional Health Locus of Control (MHLC) scales. Health Educ Monogr 1978; 6:161-70.
34. Stewart AL, Hays RD, Ware JE Jr. The MOS short-form general health survey. Reliability and validity in a patient population. Med Care 1988; 26:724-35.
35. Watson D, Clark LA, Carey G. Positive and negative affectivity and their relation to anxiety and depressive disorders. J Abnorm Psychol 1988; 97: 346-53.
36. Watson D, Clark LA, Tellegen A. Cross-cultural convergence in the structure of mood: a Japanese replication and a comparison with US findings. J Pers Soc Psychol 1984; 47:127-44.
37. Wallston BS, Wallston KA. Social psychological models of health behavior: an examination and integration. In: Baum A, Taylor SE, Singer JE, editors. Handbook of psychology and health. Vol 4. Social psychological aspects of health. Hillsdale, NJ: L. Erlbaum, 1984:23-53.
38. Wallston KA, Wallston BS. Who is responsible for your health? The construct of health locus of control. In: Sanders GS, Suls J, editors. Social psychology of health and illness. Hillsdale, NJ: L. Erlbaum, 1982:65-95.
39. Emanuel LL, Emanuel EJ. The medical directive. A new comprehensive advance care document. JAMA 1989; 261:3288-93.
40. Fisher M, editor. Guide to clinical preventive services. An assessment on the effectiveness of 169 interventions. Report of the US Preventive Services Task Force. Baltimore: Williams & Wilkins, 1989.
41. Emanuel EJ, Emanuel LL. Proxy decision making for incompetent patients: an ethical analysis. JAMA 1992; 267:2067-71.