Use of Advance Directives by Community-Dwelling Older Adults

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Objective: To ascertain the level of planning for end-of-life medical care in a population of community-dwelling older adults and to determine if there were demographic and health-related differences among those who had taken steps toward completing advance directives.

Design: Random-digit telephone survey.

Patients and setting: 571 nonurban community-dwelling older adults aged 62 years or older.

Measures and analysis: Three levels of advance directive planning as well as demographic, socioeconomic, and health-related variables were measured. Logistic regression analyses were performed, with the levels of advance directive planning as the outcome and the descriptive variables as the predictors.

Results: 571 patients were interviewed. Forty-seven percent had discussed their wishes with a member of their family, 13.5% had discussed their preferences with their doctor, and 16.1% had written advance directives. Persons who assessed their health as poor, were single, and had greater concerns about their overall health were significantly more likely to have discussed advance directives with a family member ($\chi^2 = 7.07, P = 0.008$). Those with greater worry about their health were more likely to have spoken with a physician, and those who were married were less likely to have spoken with someone or written advance directives.

Conclusions: Although many older adults have considered end-of-life care, few have actually written advance directives. These findings suggest that physicians should initiate discussions about advance directives, particularly among married individuals, who were less likely than others to have talked about or written advance directives.

Consumers and providers of health care have expressed the need for greater patient involvement in end-of-life care decisions. Eliciting and adhering to patient preferences regarding life-sustaining interventions has become an important part of caring for older adults and reflects both respect for patient autonomy as well as concerns about medical expenditures at the end of life [1]. In the United States, the Patient Self-Determination Act was passed in 1990 [2], mandating that health care facilities participating in Medicare or Medicaid provide patients with written information regarding their rights in the use of advance directives. Advance directives are documents that express a person’s wishes regarding medical care when very ill or near death. Examples of directives include “Do not resuscitate” orders, orders to forgo artificial nutrition, and orders forbidding intubated ventilation. Efforts are being made to have this policy extended to patients in ambulatory care settings [3].

Many older adults discuss their preferences about care near the end of life with family members, but written advance directives are used less often. Previous studies suggest that adults appreciate the opportunity to discuss end-of-life issues with their physician and that the majority of individuals prefer the physician to initiate the discussion [4–12]. However, physicians regard patients as uncomfortable with talking about issues of death and dying [13] and may themselves be uncomfortable with addressing the topic.

Most studies on advance directives have been conducted in health care settings, thus preventing generalizability of findings to nonclinical populations. A study by Lo et al that included participants from a community sample found no statistically significant difference between outpatients’ ($n = 405$) and community adults’ ($n = 102$) interest in planning for end-of-life care [8]. However, this study was not limited to older adults and did not report the participants’ actual behavior. The purpose of our study was to ascertain...
the level of planning for future medical care in a representa-
tive sample of community-dwelling older adults and to
determine if there were demographic and health-related dif-
terences between those who had taken steps toward plan-
ing and those who had not.

Methods
Sample and Procedures
The participants were a sample of subjects from a 5-year
study of an elderly population in northeast Ohio. In 1992, at
the third data collection point of the parent study, we added
questions regarding planning for the end of life. The data
were collected via telephone survey administered by trained
interviewers. For the parent study, a sample of households
was reached using proportional random-digit dialing in
3 nonmetropolitan counties (Columbiana, Carroll, and Tus-
carwaras). More than 90% of homes in these counties had
telephone service. Eligibility criteria included age greater
than 61 years and ability to participate in the telephone
survey. The investigation review board of Northeast Ohio
Universities College of Medicine approved the study.

Measures
Participant characteristics included age, race/ethnicity, sex,
marital status, and household income (above or below pov-
erty level). Health-related variables included self-reported
quality of life, self-reported health status, perceived quality
of medical care in the community, perceived control over future
health, and time spent worrying about health problems. These
were measured using a series of 4-point scales. For example,
quality of life, health status, and quality of medical care were
measured on a scale ranging from 1 (poor) to 4 (excellent).
Participants were also asked the number of months since their
last visit to a physician and whether they have a regular physi-
cian. The Determination of Need scale (DON), developed at
the University of Illinois–Chicago in conjunction with the
Illinois Departments on Aging and Public Aid [14], was used
to assess the degree of participant disability and the extent to
which needs were met. Higher DON scores indicated greater
functional limitations and less assistance available. Depres-
sion was measured by the Burnam depression scale.
Higher scores indicated a greater probability of major depres-
sion or dysphoria. The reported sensitivity of this mea-
sure for detecting depression within the past month in a gen-
eral household sample is 89%, with a specificity of 95% [15].

We assessed 3 levels of consideration about advance di-
rective planning with the following questions:

- Have you talked to someone about what type of medi-
cal care you would want if you were ill and unable to
make decisions for yourself?
- Have you talked with your doctor about what type of
medical care you would want if you were ill and unable
to make decisions for yourself?
- Have you made written plans about what type of medi-
cal care you would want if you were ill and unable to
make decisions for yourself?

Analysis
The focus of the analysis was to develop models to predict
the 3 advance-planning behaviors (ie, talking with someone,
talking with a doctor, and making written plans). The inde-
pendent variables were age, sex, marital status, health status,
quality of life, determination of need, depression, income,
perceived quality of medical care in the community, months
since last visit to a physician, control over future health, and
amount of worry about health. Three multivariate analyses
using logistic regression were conducted to examine which
variables were associated with performing each of the
advance-planning behaviors. Because of the exploratory
nature of the study, backward stepwise selection, based on
the likelihood ratio statistic, was used to reduce the number
of independent variables to allow the best model–data fit. All
analyses were conducted using SPSS statistical software.

Results
Five hundred seventy-one adults completed the telephone
survey. The mean age was 72 years (SD = 7.6 years). Ninety-
eight percent of the participants were non-Hispanic whites;
71.2% were female; 53% were married; 14.7% had incomes
below the poverty level.

Table 1 provides characteristics regarding use and atti-
dudes toward medical care and perceived health status and
physical and emotional functioning. Although almost half of
the participants had discussed their wishes for health care
with someone else, only 13.5% had spoken with their physi-
cian; 16.1% had made written plans.

Separate multiple logistic regression analyses were per-
formed on each of the 3 advance planning behaviors as an
outcome with the 12 predictor variables. After deletion of
99 cases with missing values, data from 472 participants
were available for analysis. No systematic pattern was asso-
ciated with the missing data.

Logistic regression testing of the full model with all
12 predictors was statistically significant for having talked
with someone ($\chi^2_{12} = 25.30, P = 0.013$), indicating that the pre-
dictors, as a set, distinguished between those who had talked
to someone about advance directives and those who had not.
The significant predictors were marital status, control over
future health, and time spent worrying about health. Table 2
provides regression coefficients and odds ratios (95% confi-
dence intervals) for predictors in the full model.
Logistic regression testing of the full model with all 12 predictors was not statistically significant for having talked with a doctor ($\chi^2 = 16.60, P = 0.165$) or having made written plans ($\chi^2 = 11.61, P = 0.478$). However, backward elimination of variables produced statistically significant models for these 2 outcomes. Standardized regression coefficients and odds ratios for the predictors in both models as well as the final model for predicting “talked to someone” ($\chi^2 = 7.07, P = 0.008$) are presented in Table 3.

Discussion

Findings from this cross-sectional study of white, middle-class community-dwelling older persons concur with those of other investigators who report that many older people do not plan for end-of-life care beyond discussing preferences with family members. A unique aspect of this study was the exploration of factors associated with various steps in planning for future medical care. For the lowest level of planning—having talked with someone—statistically significant associations were noted for lower quality of life, not being married, and greater worry about overall health. The only independent variable significantly associated with having talked with a physician was greater worry about overall health. Variables in the final model for participants who had completed a written advance directive were income above poverty level and not being married, but only marital status was statistically significant.

We did not identify any patterns associated with taking more definitive steps to execute a written directive. Married individuals were less likely to have spoken with someone or to have completed an advance directive. Individuals reporting a great deal of worry about overall health were more likely to have talked with a physician.

Limitations of this study include the generalizability of findings to other populations of older adults, especially...
those of lower socioeconomic status and minorities. However, the method of random-digit dialing does increase the reliability of results in this study [16]. Another limitation is the proportion of subjects who did not have complete data for the multivariate procedures. Although we did not find an obvious pattern to account for the missing data, listwise deletion of 17% of respondents raises concerns about the validity of results from the logistic regressions. The cross-sectional design only allows for measuring strength of association between independent and dependent variables, and causality and direction cannot be determined from survey data. Finally, potentially important constructs that could account for executing an advance directive such as self-determination, beliefs about various health states, and physician-initiated conversations were not included.

The low rates at which advance directives are implemented suggest that the completion of living wills should be an objective for physician intervention. Physicians should not assume that a patient’s spouse knows the patient’s preferences regarding end-of-life care; our findings suggest that married persons are less likely than unmarried persons to discuss issues relating to their own death. Older persons with low income levels also appear to be an important group to target for completing advance directives.

To enable the development of effective interventions to increase use of advance directives in the general population of older adults, future studies will need to investigate physician behavior. The lack of physician initiative in encouraging discussion and completion of directives is commonly cited by patients as a reason for not completing an advance directive [8]. Furthermore, it has been demonstrated that patients respond positively to physicians who raise concerns about advance directives [10,12]. Duffield and Podzamsky reported a much higher rate of completion of directives (45%) than we found. They concluded that when a simple advance directive form is presented by a caregiver in a primary care setting where the patient has a comfortable and sustained relationship, the rate of completion is high [17]. During a visit, physicians can influence patients’ normative beliefs about advance directives, discuss the pros and cons of completing an advance directive versus relying on others to make health care decisions for them, and reinforce patients’ efforts in planning for end-of-life care. Physicians need to review the ways that they initiate, conduct, and complete conversations about living wills.

### References


Table 3. Logistic Regression Models for Advance Planning Behaviors After Backward Elimination

<table>
<thead>
<tr>
<th>Behavior and Predictors</th>
<th>Coefficient (β)</th>
<th>Odds Ratio (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made written plans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income below poverty level</td>
<td>-0.76</td>
<td>0.48 (0.21-1.10)</td>
<td>0.083</td>
</tr>
<tr>
<td>Married</td>
<td>-0.50</td>
<td>0.60 (0.37-0.98)</td>
<td>0.042</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-1.24</td>
<td>-</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Talked with someone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td>-0.23</td>
<td>0.80 (0.65-0.98)</td>
<td>0.033</td>
</tr>
<tr>
<td>Married</td>
<td>-0.45</td>
<td>0.64 (0.44-0.93)</td>
<td>0.019</td>
</tr>
<tr>
<td>Control over future health</td>
<td>0.22</td>
<td>1.24 (0.99-1.57)</td>
<td>0.064</td>
</tr>
<tr>
<td>Worried about overall health</td>
<td>-0.24</td>
<td>0.79 (0.65-0.95)</td>
<td>0.015</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.97</td>
<td>-</td>
<td>0.042</td>
</tr>
<tr>
<td>Talked with doctor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worried about overall health</td>
<td>-0.31</td>
<td>0.71 (0.55-0.91)</td>
<td>0.008</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.81</td>
<td>-</td>
<td>0.031</td>
</tr>
</tbody>
</table>

CI = confidence interval.