The Influence of Default Options on the Expression of End-of-Life Treatment Preferences in Advance Directives

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BACKGROUND: Advance directives promise to preserve patient autonomy, but research indicates that end-of-life preferences can be influenced by the way in which questions are posed.

OBJECTIVE: To determine whether preferences expressed by geriatric patients on advance directives are influenced by the default response inherent in the question.

DESIGN: Mailed survey containing 1 of 3 versions of an advance directive.

SETTING: General internal medicine outpatient medical practice.

PARTICIPANTS: Outpatients aged 65 or older ($n=106$, response rate=27%).

INTERVENTIONS: In the “withhold” version of the survey, participants indicated situations where they would want treatments withheld (i.e., the default preference was in favor of treatment). In the “provide” version, participants indicated situations where they would want treatment provided (i.e., the default preference was against treatment). In the forced-choice control version, participants made an explicit decision to withhold or provide treatment for each situation.

MAIN OUTCOME MEASURE: Participants’ treatment preferences.

RESULTS: Preferences differed by condition, $F(2, 103)=3.61$, $MSE=0.09$, $\eta^2=.07$, $p=.03$. Participants tended to express the default preference, and thus, were more likely to favor treatment in the “withhold” condition than in the “provide” condition. Preferences in the forced-choice control condition were intermediate.

CONCLUSIONS: The default inherent in a question can impact preferences for medical treatment. This default effect limits the utility of advance directives.

KEY WORDS: end-of-life preferences; defaults; advance directives.
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Advance directives are considered essential tools for end-of-life planning¹, but recent research questions their effectiveness². Advance directives do not increase the ability of family members or physicians to predict a patient’s preferences^{3,4}. One reason may be that treatment preferences expressed in an advance directive are distorted by irrelevant features such as how the question is framed^{5,6} or the number of options available⁷. Past research has shown that preferences do not always reflect stable personal attitudes, but instead are constructed based on contextual features⁸.

Here, we focus on the influence of the default response implicit in a question—the preference inferred if the participant gives no explicit response. In a recent study of end-of-life preferences among college students⁹, 1 group was shown a list of medical treatments and asked to check the ones they would want withheld or withdrawn. Here, the default is a preference for treatment because if a participant does not check a particular treatment, it is assumed that she wants that treatment provided. A second group of participants was shown the same list and asked to check the treatments they would want provided or continued. Here, the default is a preference for no treatment because if a participant does not check a particular treatment, it is assumed that he does not want that treatment provided. The college students expressed a stronger preference for receiving treatment when that was the default response than they did in the condition where declining treatment was the default response. A similar default effect occurs in decisions about organ donation⁵ and retirement investment¹⁰. The default effect may result from conservation of cognitive effort, an omission bias¹¹, or inferences about policy maker’s recommendation¹². Regardless of its cause, a default effect in end-of-life preferences is troubling.

The current study examined the default effect in the end-of-life preferences of outpatients from a general internal medicine practice, aged 65 and older, a population for whom advance directives are a highly relevant issue. Whereas college students may endorse the default response to avoid giving thoughtful consideration to an uncomfortable issue, geriatric patients might be expected to have more well-formulated preferences for medical treatment, and thus, be less susceptible to a default effect.

METHOD

Subjects

Subjects were outpatients from the general internal medicine faculty practice of an academic hospital. In fall 2005, after

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receiving human subjects' approval, we mailed questionnaires and a personally addressed cover letter to 450 outpatients aged 65 or older without a diagnosis of dementia. Participants were offered a \$12 gift card for their participation. Non-responders were sent reminder postcards several weeks after the initial mailing. Forty-one questionnaires never reached their intended recipients (incorrect address or patient deceased). Of the 409 who received questionnaires, 109 (27%) completed them. Response rate did not differ between men (23%) and women (28%, $p=0.34$), but was associated with age ($p=.003$, 39% among participants in their 60s, 29% among those in their 70s, 9% among those in their 80s, and <1% among those over 90). Three participants were eliminated from analysis because of missing data (explained below), leaving 106 in the analysis. Table 1 shows demographic characteristics of these participants.

Materials

Participants read a glossary of end-of-life medical terms and completed a 13-item quiz to assess comprehension of these terms. They then completed 1 of 3 versions of an advance directive, the patient life support questionnaire (LSPQ)³, and indicated demographic information.

The advance directive, based on one used at an academic hospital, included 22 questions as shown in Table 2. Participants in the "withhold" condition were instructed to place a check next to treatments they would want withheld. Thus, for example, on question "a" (see Table 2), they would place a check mark if they wanted life-sustaining procedures to be withheld or withdrawn if

they become permanently unconscious, and they would place no mark if they wanted treatment provided in this event. The default response in this condition is a preference in favor of treatment because if an individual does not check a box, it is assumed that she wants that specific treatment provided. Participants in the "provide" condition were instructed to place a check in the box next to treatments they would want administered. Thus, for example, on question "e" they would place a check mark if they wanted to receive chest compressions, and they would place no mark if they did not want that treatment. This version of the advance directive has the opposite implicit default—a non-response indicates a preference for treatment to be withheld. In the forced choice control condition, there was no default, and participants had to indicate whether they would want a particular treatment administered or withheld. Three participants in the control condition were eliminated from analysis because they failed to check either response option on 10 or more of the 22 advance directive items.

The LSPQ³ consists of 9 hypothetical scenarios that describe health states including current health, Alzheimer's disease, emphysema, coma, stroke, and colon cancer. In each scenario, participants indicated their preferences for antibiotics, cardiopulmonary resuscitation, surgery, and artificial feeding and fluids. Responses range from 1 (definitely would not want treatment) to 5 (definitely would want treatment).

Analysis

Responses to each item in all 3 versions of the advance directive were coded as to whether the participant favored treatment (e.g., checking "provide" or not checking "withhold"). Logistic regression compared the "provide" and "withhold" conditions in terms of the percentage of participants favoring treatment on each item (Table 2). Analysis of variance (ANOVA) compared all 3 conditions on the mean percentage of items on which the participant favored treatment (Table 2) and on quiz scores and average responses on the LSPQ (Table 1).

RESULTS

Table 1 shows that the 3 default conditions did not differ on any demographic characteristic. Mean scores on the quiz and the LSPQ were similar across conditions.

Table 2 shows the percentage of participants in each condition favoring treatment on each advance directive item. The percentage favoring treatment was numerically higher in the withhold condition (where the default is to favor treatment) than it was in the provide condition (where the default is to decline treatment) on 21 of the 22 advance directive items and significantly higher on 7 items. The percentage of participants favoring treatment in the forced choice control condition was between the percentages for the withhold and provide conditions on 12 of the 22 items (higher than both on 6 items, lower than both on 4 items).

Participants in the withhold condition favored treatment on an average of 38% of the advance directive items compared to 28% in the control condition and 20% in the provide condition, $F(2,103)=3.61$, $MSE=0.09$, $\eta^2=.07$, $p=.03$. Pairwise comparisons indicated that the mean percentage in the "withhold" condition was significantly higher than that in the "provide" condition but that the forced choice control did not differ significantly from either of the other 2 groups.

Table 1. Patient Characteristics

Characteristic	Experimental condition			P value*
	Withhold condition (n=36) (default to provide treatment)	Forced choice (n=31) (no default option)	Provide condition (n=39) (default to withhold treatment)	
Women, no. (%)	28 (78%)	22 (71%)	23 (59%)	0.21
Married, no. (%)	16 (57%) [†]	18 (58%)	23 (59%)	0.99
White ethnicity, no. (%)	24 (86%) [†]	28 (90%)	37 (95%)	0.44
College education, no. (%)	15 (54%) [†]	19 (61%)	21 (55%) [‡]	0.86
Age, mean (SD), year [§]	76.64 (7.43)	76.03 (6.81)	76.53 (6.53)	0.93
Quiz score, out of 13, mean (SD)	10.93 (0.92)	10.84 (1.00)	10.82 (1.25)	0.87
LSPQ score, 1–5 scale, mean (SD)	2.74 (1.14)	2.65 (0.99)	2.73 (0.92)	0.92

*P value from a chi square ($df=2$) or ANOVA ($df=2,103$) comparing the three experimental conditions.

[†]For 8 of the 36 patients in the withhold condition, the demographic sheet was inadvertently omitted from the questionnaire. Thus, marital status, ethnicity, and education are based on an N of 28 for this group.

[‡]Based on an N of 38 because one patient in this condition did not provide education level.

[§]Age analysis based on total N of 105 because age unknown for one patient in the provide condition.

Table 2. Number (Percent) of Patients Favoring Treatment on Each Advance Directive Item

Advance directive item	Experimental condition			OR (95%CI)*
	Withhold condition (n=36) (default to provide treatment)	Forced choice (n=31) (no default option)	Provide Condition (n=39) (default to withhold treatment)	
I direct that life-sustaining procedures be withheld or withdrawn/provided or continued...				
a. if I become permanently unconscious	9 (25%)	2 (6%)	4 (10%)	1.71 (0.90–3.24)
b. if I have a terminal illness	17 (47%)	8 (26%)	4 (10%)	2.80 (1.52–5.16)
c. if treatment is experimental, futile, or will merely prolong imminent dying	14 (39%)	4 (13%)	3 (8%)	2.76 (1.40–5.44)
d. if I have a serious irreversible illness or condition and the risks and burdens associated with the treatment outweigh its benefits, or the treatment would be inhumane	8 (22%)	1 (3%)	7 (18%)	1.14 (0.64–2.01)
In an end of life situation, the medical procedures that I would want withheld or withdrawn/provided or continued include but are not limited to:				
e. chest compressions	16 (44%)	13 (45%) [†]	9 (23%)	1.63 (0.99–2.68)
f. mechanical ventilation	9 (25%)	9 (30%) [‡]	9 (23%)	1.05 (0.62–1.79)
g. tracheostomy	16 (44%)	10 (33%) [‡]	9 (23%)	1.63 (0.99–2.68)
h. chemotherapy	11 (31%)	11 (37%) [‡]	6 (15%)	1.56 (0.89–2.73)
i. radiation therapy	11 (31%)	11 (36%) [‡]	10 (25%)	1.13 (0.68–1.87)
j. blood transfusions	17 (47%)	15 (48%)	11 (28%)	1.51 (0.94–2.43)
k. artificially provided fluids	21 (58%)	10 (32%)	13 (33%)	1.67 (1.05–2.68)
l. artificially provided nutrition	15 (42%)	10 (32%)	11 (28%)	1.34 (0.83–2.18)
m. surgery	11 (31%)	8 (27%) [‡]	6 (15%)	1.56 (0.89–2.73)
n. dialysis	13 (36%)	9 (31%) [†]	8 (21%)	1.48 (0.88–2.48)
o. antibiotics	19 (53%)	15 (50%) [‡]	12 (31%)	1.59 (0.99–2.54)
p. intubation	14 (39%)	10 (33%) [‡]	6 (15%)	1.87 (1.08–3.24)
I would not like my life to be prolonged by medical treatment(s) if my quality of life is unacceptable to me. The following are conditions that are acceptable/unacceptable to me:				
q. depending on a machine to keep me alive (for example, a ventilator or dialysis)	8 (22%)	8 (26%)	10 (26%)	0.91 (0.53–1.55)
r. depending on artificial feeding to keep me alive (for example, a stomach tube or intravenous line)	13 (36%)	8 (26%)	7 (18%)	1.61 (0.94–2.74)
s. being permanently unconscious (for example, in a coma)	5 (14%)	2 (6%)	0 (0%)	Not estimable [§]
t. being conscious (awake), but unable to communicate (for example, with a stroke)	18 (50%)	12 (39%)	16 (41%)	1.20 (0.76–1.89)
u. being unable to recognize those who love me	16 (44%)	3 (10%)	1 (3%)	5.51 (1.94–15.69)
v. being unable To care for myself (for example, bathing, dressing, eating)	21 (58%)	9 (29%)	9 (23%)	2.16 (1.31–3.56)
Mean percent (SD) of questions favoring treatment	38% (.35)	28% (.30)	20% (.22)	2.73 ^{//}

*Odds ratio (with 95% confidence interval) comparing the withhold and provide conditions.

[†]Based on an N of 29 because two participants in this condition gave no response to this question.

[‡]Based on an N of 30 because one participant in this condition gave no response to this question.

[§]p=.02 by Fisher's exact test.

^{//}T test (df=76, p=.008) comparing the withhold and provide conditions.

DISCUSSION

The current study demonstrates that the elderly are susceptible to default effects when expressing end-of-life treatment preferences in advance directives. Participants in the “withhold” condition were more likely to express preferences favoring treatment than those in the “provide” condition. That is, preferences tended toward the default response. In the force choice control condition where there was no default response, preferences for treatment were intermediate. Responses to the medical scenarios in the LSPQ did not differ across default conditions, indicating that defaults implicit in the advance directive do not have a lasting effect on treatment preferences expressed later. Thus, the default preferences implicit in advance directives can influence the expression of preferences in a way that is not indicative of the choices participants make

in other contexts. Although living wills without default options avoid the default effect, they may be subject to other biases in preference construction⁸.

Several limitations should be considered. The sample size was small, and the response rate was low and related to age. The low response rate may be due in part to outpatients' unwillingness to think about the end of life. Because outpatients willing to complete the questionnaire, however, presumably have more firmly defined preferences for end-of-life treatment than the non-responders, it is unlikely that responders would be more susceptible to a default effect than non-responders. Thus, the current results may actually underestimate the size of the default effect.

The default effect demonstrated in the current study of geriatric outpatients is similar in size to that obtained in a previous study of college students⁹. Although geriatric out-

patients have likely given more thought to end-of-life treatment preference than have young adults, they are just as susceptible to the effect of defaults. Advance directives in which expressed preferences are distorted by the manner in which the questions are phrased could lead to later treatment decisions that do not reflect the long-standing preferences of the patient, thereby thwarting the very goal that they were established to achieve—the preservation of patient autonomy.

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Conflicts of Interest: None disclosed.

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