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Persistent Problems in End-of-Life Planning Among Young- and Middle-Aged American Couples

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Objectives. Guided by the transtheoretical model of health behavior change, this study sought to explain why (a) rates of advance care planning remain low in the general population and (b) surrogate decision makers are often inaccurate about patients' end-of-life preferences.

Methods. The study used quantitative data from a cross-sectional internet survey conducted between July and October 2010. The 2,150 participants aged 18–64 belonged to 1,075 married or cohabiting heterosexual couples. Participants included members of a nationally representative internet panel and a convenience sample from online advertisements.

Results. Older age was associated with a greater likelihood of having executed a living will and/or appointed a durable power of attorney for health care. Both older age and poorer health were independently associated with a greater likelihood of having discussed end-of-life health care treatment preferences. Completion of one's own end-of-life planning was unrelated to one's ability to accurately report one's partner's treatment preferences.

Discussion. Readiness to plan for end of life appears to differ across planning behaviors. Age and health are related to aspects of one's own advance care planning, but none of these factors are related to accuracy as a partner's surrogate.

Key Words: Advance care planning—Death and dying—Dyadic data—Medical decision making.

TERMINALLY ill patients experience the burden of incapacitating symptoms such that 30% of decedents require treatment decisions they are no longer able to make (Silveira, Kim, & Langa, 2010). U.S. states' statutes provide for *advance directives* (ADs), mechanisms that allow patients to articulate their future medical treatment preferences while still competent. Specifically, a living will details the specific treatments a person would or would not want if in a certain health condition, and a durable power of attorney for health care (DPAHC) is a surrogate permitted to make medical decisions on behalf of an incapacitated patient. ADs are associated with decreased symptom burden and improved communication between health care professionals and patients' families at the end of life (Teno, Gruneir, Schwartz, Nanda, & Wetle, 2007). In addition to ADs, individuals can also make informal plans. Patients' discussions with family and physicians are not legally binding, but discussions with physicians do result in care that is more consistent with patients' wishes than is the care of persons who do not hold discussions (Mack, Weeks, Wright, Block, & Prigerson, 2010). Together, ADs and informal discussions are known as *advanced care planning* (ACP).

Despite the documented efficacy of ACP, research also highlights its limitations, including low rates of AD completion in the general population, restrictions on who may serve as a DPAHC, ADs that are missing signatures and notarization, DPAHCs' difficulty in determining what care the patient would choose for him or herself, inaccessibility of ADs at the time of treatment decisions, and more (Castillo et al., 2011). These problems have persisted for over two decades, despite measures such as Congressional legislation requiring that hospitals offer ACP assistance to patients (Emanuel, Weinberg, Gonin, Hummel, & Emanuel, 1993). Recently, end-of-life scholars have begun to turn to theories of health behavior change from other areas of study to gain leverage over the problems (Fried, Bullock, Iannone, & O'Leary, 2009). Thus, this study applies the transtheoretical model (TTM) of health behavior change to guide thinking on two of the most pressing of these problems: (a) encouraging people to complete end-of-life planning well in advance of incapacitating illness and (b) fostering DPAHC accuracy.

The study addresses these issues in a national sample of 1,075 heterosexual American couples aged 18–64. Couples are the focus because ACP is a distinctly family-based process. Among married older persons who have appointed a DPAHC, three quarters have appointed their spouse; most states designate the spouse as the surrogate decision maker if the patient has not appointed a DPAHC; and conversations about end-of-life care typically happen between spouses (Carr & Khodyakov, 2007). Persons aged 18–64 are the focus because ACP done only at the end of life is often deemed "too late" to be helpful or meaningful; thus, it is important to begin the process when one is a working-age adult (Sudore & Fried, 2010).

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TTM of Health Behavior Change

The TTM was developed as a framework to explain human health behavior change by integrating the strengths of the major schools of psychotherapy, including psychoanalysis, cognitive-behavior approaches, person-centered therapy, and more (Prochaska & Norcross, 1999). The TTM was intended to be generalizable to a wide range of behaviors including those outside of a mental health context and has been applied to over 50 behaviors (e.g., smoking cessation, medication adherence, and breast cancer screening; Prochaska, 2008). The TTM posits that people will be unprepared to make any change so long as they lack motivation for decision making (e.g., in the absence of an immediate health threat) and guides scholars and practitioners to consider patients' level of motivation and degree of readiness to change.

The specific constructs of the model that address motivation and readiness are the *stages of change*, which describe how individuals move from having no intention to change (precontemplation), to considering change (contemplation), committing to change in the near future (preparation), completing change (action), and sustaining change (maintenance). The process advances as patients' assessments of the ratio of the costs of change to the benefits of change, or *decisional balance*, shift (Prochaska, 2008). Health care professionals encourage shifts in decisional balance through use of the *processes of change*, activities such as consciousness-raising and self-evaluation that motivate and prepare people to change. Processes of change must be tailored to the individual's stage of change in order to be effective; processes that help a "preparer" toward change may have no effect on a "precontemplator."

Several scholars have used the TTM to guide their studies of ACP, conceiving of discussion, AD completion, and AD revision as a set of preventive health behaviors that should occur repeatedly over time (Fried et al., 2009). One's decisional balance must shift such that one recognizes and values the benefits of planning enough to undertake the psychological stress of spending time considering one's own death and dying. These scholars conclude that beginning ACP well in advance of health crises helps to ensure that by the time one requires terminal care, one is prepared and ready (Finnell et al., 2011; Fried et al., 2010; Sudore et al., 2008).

One Persistent Problem: Rates of ACP

In line with the TTM's postulate that health threats motivate people to change their health behavior, research shows that efforts to increase rates of ACP have been very successful among high-risk groups. Among nursing home residents, for instance, 70% have an AD (Resnick, Schuur, Heineman, Stone, & Weissman, 2009). Yet, rates of end-of-life planning remain low in the general population, in which only a third of all adults aged 18 and older have ADs (Pollack, Morhaim, & Williams, 2010). Interestingly, older persons are more likely to have made funeral plans than to have prepared for their future care needs (Pinquart & Sörensen, 2002).

Some scholars assert that low rates of ACP in the general population are not troubling, because care preferences change over the life course (Ditto, Jacobson, Smucker, Danks, & Fagerlin, 2006). Planning may even prevent patients from receiving care congruent with their wishes if health care providers and family members rely on out-of-date plans. The TTM counters this argument in two ways. First, the TTM is a process model. People cannot quickly and easily move from precontemplation to action; it is not optimal to wait to think about care options until they are needed. ACP will be more effective and less stressful when people begin the process long before they require care. Second, a case in which a person created plans but did not periodically update them would be considered relapse under the TTM. In the maintenance stage, positive health behaviors are sustained (Prochaska & Norcross, 1999). ACP need not occur as regularly as a health behavior such as exercise, but it does require occasional review and revision.

Two primary influences on ACP in the general population are age and health status. Multiple studies have documented that the older one's age, the more likely one is to have an AD (Pollack et al., 2010). The most frequent reason older adults give for not having plans is that they are "too healthy," and the most common reason they give for having plans is a medical condition (Pollack et al., 2010; Schickedanz et al., 2009).

Drawing a distinction between age and health as influences on individuals' decisional balance is important in the TTM: Interventions to increase rates of end-of-life planning may fail if they do not use appropriate processes of change to target specific barriers to planning (Prochaska, 2008). Prior studies have conflated age and health status by taking one of three approaches: (a) limiting participants to older persons; (b) recruiting participants from health care settings; or (c) approaching the problem via prospect theory. Prospect theory states that options, or prospects, are more easily differentiated the closer they are to one's present reference point (Kahneman & Tversky, 1979). Thus, an ill and/or elderly person will rank poor health states on a continuum of more to less acceptable, whereas a young and/or healthy person will not distinguish, instead wanting to avoid all negative health states similarly (Winter & Parker, 2007). Using the prospect theory approach, the operational factor is neither age nor health alone, but rather a subjective blending of the two that results in an evaluation based on the expected time until end of life.

This article compares the applicability of the TTM and prospect theory to the action stage, completion of various ACP behaviors. The TTM would posit that age and health operate independently with relation to ACP, whereas

prospect theory suggests that age and health interact in their effects on ACP. Thus, we ask the research question:

> Research Question 1: What are the relationships among health status, age, and completion of ADs and informal discussions?

The statistical models further account for race, socioeconomic status, marital status, and gender, factors that have been shown to be correlated with both self-reported health and the propensity to complete ACP. Non-White persons, persons with low educational attainment and income, unmarried persons, and women report lower self-reported health than their peers (McGee, Liao, Cao, & Cooper, 1999). White persons, persons of high socioeconomic status, and married persons are most likely to have ADs (Carr & Khodyakov, 2007). Men are most likely to have ADs, whereas women are most likely to have held informal discussions (Carr & Khodyakov, 2007).

A Second Persistent Problem: Surrogate Accuracy

A second major concern about ACP is the frequency with which DPAHCs do not know the incapacitated patient's preferences. The legal standard for decision making is that of *substituted judgment*, whereby the DPAHC chooses the treatment the patient would have chosen for him or herself if competent to do so (Sabatino, 2010). Numerous studies using hypothetical decision-making scenarios match participants' preferences against surrogates' reports of those preferences. Together, these studies indicate that surrogates are no better than chance at correctly identifying one another's preferences (Shalowitz, Garrett-Mayer, & Wendler, 2006).

Thus far, researchers have been unable to identify many alterable factors that enhance surrogate accuracy. One study indicates that pairs do better when both surrogate and patient are African American rather than White (Schmid, Allen, Haley, & DeCoster, 2010). Another found that spouses are more accurate surrogates than are adult children (Parks et al., 2011). But men and women are equally poor surrogates, the surrogates of persons in poor health are no more likely to be accurate than the surrogates of persons in good health, and most disturbingly, discussions between patient and partner have no effect on surrogate accuracy (Ditto et al., 2001; Moorman, Hauser, & Carr, 2009). The strongest predictor of surrogate accuracy is the surrogate's preference for his or her own care (Moorman et al., 2009). That is, surrogates appear to experience cognitive biases wherein they project their own preferences onto the patient either because they fail at perspective taking or because they truly believe the patient to be similar to themselves (Lowenstein, 2005).

The TTM has not yet been applied to research on surrogate accuracy. But it may serve as a helpful conceptual tool in this area of research, because studies using the TTM to examine ACP have reached varying empirical conclusions. Sudore and colleagues (2008) found that discussion was a part of the contemplation and preparation stages and preceded AD completion. But Fried and colleagues (2010) found that living will execution, DPAHC appointment, and discussion each constituted the action stage of separate processes. For example, a patient could have executed a living will but still have no intention to discuss it with family or physicians.

The TTM posits that people can plan for themselves only when they are ready and prepared. Applying this proposition to surrogate accuracy suggests that only surrogates who are ready and prepared are able to fully empathize with patients' preferences, because only then will they have the decisional balance required to overcome the difficulty of thinking about a loved one's death and dying. Thus, this study separates those with the most positive attitudes toward planning, "actors" who have completed their own ACP, from persons who have no plans and thus some degree of uncertainty about planning. Finding that a surrogate's own ACP completion is associated with his or her accuracy as a surrogate would be evidence that ACP behaviors build upon one another in a single process, as Sudore and colleagues (2008) found. Finding that a surrogate's own ACP is unassociated with his or her accuracy would indicate that ACP behaviors are the culmination of separate preparation processes, as Fried and colleagues (2010) found. Thus, we ask the research question:

> Research Question 2: Is the existence of one's own end-of-life plans related to the accuracy of one's reports of a partner's treatment preference?

The statistical models further account for surrogate's treatment preference, age, race, socioeconomic status, and gender, the couple's relationship duration and marital status, and the self-reported health of both partners. Prior research has yielded few measures reliably associated with surrogate accuracy, but these factors seem likely candidates. For instance, couples who are legally married and have been together a long time may have more motivation and more opportunity to know their partner's preferences than cohabiting and new couples.

Method

Data

We used data from an internet survey conducted by Knowledge Networks, in conjunction with the National Center for Family and Marriage Research at Bowling Green State University, between July and October of 2010. This cross-sectional study included a sample of 2,150 participants aged 18–64 who belonged to one of 1,075 married or cohabiting heterosexual couples residing in the United States. Seventy percent of the couples were married and 30% were cohabiting.

In 1999, Knowledge Networks used probability-based sampling methodology to establish the first online research

panel (KnowledgePanel; www.knowledgepanel.com/) that is representative of the U.S. population. Panel members agreed to participate in multiple surveys over time in exchange for "incentive points" redeemable for cash. If the panel members did not have access to the Internet, Knowledge Networks provided the necessary equipment free of charge. The couples in this study were primarily recruited from the KnowledgePanel. All married couples were panelists. Of cohabiting couples, a third were panelists. To be counted as a valid response, both partners had to complete a valid survey. Recruitment within the panel yielded a 50% response from married couples and a 41% response from cohabiting couples.

Additional two sources were used to generate the remainder of the sample of cohabiting couples: 10% of cohabiting couples comprised a KnowledgePanel member and partner who was not on the panel and 57% of cohabiting couples comprised two partners recruited through online advertisements (i.e., a non-probability sample). Recruitment of panel members and their off-panel partners yielded only a 5% response rate. Response rates are not calculable for convenience samples; so, response to the web advertisement is unknown. Supplementary analyses indicated that the results of this study were similar for cohabiting couples regardless of means of recruitment. Therefore, the three groups were pooled in the analyses presented here.

AD Completion

AD completion was assessed based on the following two questions: "Have you made any legal arrangements for someone to make decisions about your medical care if you become unable to make those decisions yourself? This is sometimes called a durable power of attorney for health care" and "Do you have a living will or advance directive? These are written instructions about the type of medical treatment you would want to receive if you were unconscious or somehow unable to communicate." The AD variable had two mutually exclusive categories: *has an AD (living will and/or DPAHC)* and *has no formal plans (neither living will nor DPAHC)*.

Participants without an AD were provided with eight closed-ended responses and asked to endorse as many reasons as applied for having no AD. Responses were aggregated into four codes. The category "Lacking information" included "I did not know this measure existed," "I do not know how to go about doing this," and "I do not believe this measure affects treatment." The category "Death avoidance" included "I have not thought about my treatment preferences" and "I do not want to think about dying and illness." The category "Other persons" included "My preferences are already known to others" and "I do not want to burden anyone with this responsibility." Finally, the category "Current good health" included "My health is currently good." Participants were tallied in all categories in which they endorsed at least one reason.

Informal Discussion

Informal discussion is a dichotomous variable based on the following question: "Have you discussed with anyone plans about the types of medical treatment you want or don't want if you become seriously ill in the future?" Those who had had a discussion were coded as 1 and those who had not were coded as 0. Participants who had not had a discussion responded why, using the same procedure and questions as for participants who had no AD, above.

Surrogate Accuracy

Participants were told "We have some questions about the kind of decisions you might make when considering your own health at the end of life. Suppose *you* had a serious illness today with very low chances of survival. What if you were mentally intact, but in severe and constant physical pain? Please select the number that best represents the level of treatment you would like." Participants answered using a scale ranging from 0 (*stop all life-prolonging treatment*) to 10 (*continue all treatment*). Intermediate anchors were not labeled and represented degrees of response for persons who would prefer a more or less aggressive course of care, having some treatments and forgoing others. Then, participants were asked "Now please think about your spouse or partner. Suppose *your spouse/partner* had a serious illness today with very low chances of survival. What if s/he were mentally intact, but in severe and constant physical pain? Please select the number that best represents the level of treatment s/he would like." The participants then selected the number between 0 and 10 that they felt best represented the level of treatment their partner would like.

We constructed two outcome variables matching one partner's report of the other's preference against the other partner's actual preference for self. One variable subtracted each male partner's actual preferences from his female partner's report of his preference, and the other subtracted each female partner's actual preferences from her male partner's report. Therefore, a score of 0 represented accuracy, whereas positive scores indicated an error of overtreatment—a surrogate believing that the other wanted more care than he or she indicated wanting—and negative scores indicated an error of undertreatment—a surrogate believing that the other wanted less care than he or she indicated wanting. These variables had few extreme values: Only 6.1% of women and 4.3% of men made a full 10-point error. Thus, the variables were made categorical as follows: under by 3 or more, under by 1–2, accurate, over by 1–2, and over by 3 or more. Supplemental analyses indicated that the results are similar under alternate categorizations (e.g., using seven categories; classifying 1-unit of difference as "accurate").

Age and Self-Reported Health

The key independent variables of interest for the first research question were participants' age and their

self-reported health status. *Age* was a continuous variable which ranged from 18 to 64 years. *Perceived health status* was derived from the following question: "In general, would you say your health is excellent, very good, good, fair, or poor?" The data showed skew; 88.0% of participants reported that their health was excellent, very good, or good. Therefore, the variable was dichotomized such that *fair* and *poor* were coded as 1, and *good*, *very good*, and *excellent* are coded as 0.

For the second research question, age and health status were treated as couple-level characteristics. The older partner's age entered into regressions. The reference category for health comprised men in good, very good, or excellent health (i.e., healthy) partnered with women in good, very good, or excellent health. The remaining categories included men in fair or poor health (i.e., unhealthy) partnered with healthy women, unhealthy women partnered with healthy men, and couples in which both partners were unhealthy.

Individual Sociodemographic Characteristics

Individual sociodemographic characteristics included education, race/ethnicity, and gender. *Education* was a variable with three categories: *high school or less* (reference category), *some college education*, and *bachelor's degree or higher*. *Race/ethnicity* had four categories: *White non-Hispanic* (reference category), *Black non-Hispanic*, *Hispanic*, and *other*. The "other" category included the 39 respondents who reported belonging to two or more racial categories. *Female* was a dichotomous variable where *women* are coded as 1 and *men* formed the reference category.

Couple Sociodemographic Characteristics

Sociodemographic characteristics of the couple included marital status, relationship duration, and household income. For marital status, categories included *cohabiting* and *married* (reference). Relationship duration referred to the number of years the couple had been dating. *Annual household income* was an ordinal variable with 19 categories; the smallest category was "*less than $5,000*," and the largest category was *"$175,000 or more*."

Analytic Strategy

First, the proportion of participants having each type of plan was calculated, along with the reasons non-planners gave for lacking plans. Average treatment preferences for self and partner and the proportion accurate were calculated. Then, the research question on health, age, and individual planning was tested through a sequence of binary logistic regression models comparing persons with plans to persons without. The unit of analysis was individuals; to adjust for within-couple correlations, results were corrected for the clustering of 2,150 individuals in 1,075 couples. For each outcome, the first model included age, health status, marital status, income, educational attainment, race/ethnicity, and gender as independent variables. The second model added the interaction of age and health. Regression models excluded reasons for not planning because participants could report multiple reasons.

The research question on couple concordance was tested through two separate multinomial logistic regression models, one for women performing as surrogates and one for men performing as surrogates. Independent variables included the planning status of both partners, the treatment preference, educational attainment, and race/ethnicity of the partner performing as surrogate, and the couple's marital status, relationship duration, and household income.

All analyses were weighted to render the sample representative of the U.S. population of heterosexual married and cohabiting adults. Most cases had complete data on the measures of interest. Income was the variable missing the most observations, at 44 (2%) cases. Listwise deletion was used.

Results

Descriptive Statistics

Few of these working-aged adults had planned for end of life. Only 28% had an AD (i.e., living will and/or DPAHC). Slightly over half (55%) reported having discussed their end-of-life treatment preferences with another person. The predominant reason participants gave for having no ACP was death avoidance (e.g., "I do not want to think about dying and illness"). The average participant's treatment preference was moderate: On a scale ranging from 0 (*stop all life-prolonging treatment*) through 10 (*continue all treatment*), the mean score was 5.23 (SD = 3.60). Using the same scale, the average participant thought that their partner's treatment preference would be 5.51 (SD = 3.58). Approximately a third of men and women were accurate about their partner's preference, with no significant differences between men and women. Descriptive statistics on all variables used in the analysis has been given in Table 1.

Health Status, Age, and ACP

Regression results for the first research question are presented in Table 2. Age was associated with completion of ADs. A 1-year increase in age was associated with a 4% increase in the odds of having an AD ($p < .001$). Self-reported health status was not significantly associated with AD completion. In Model 2, age and health status did not have a statistically significant interactive relationship to AD completion.

Both age and self-reported health were significantly associated with the odds of having held a discussion. An

Table 1. Characteristics of Respondents to the National Center for Family and Marriage Research/Knowledge Networks Pilot Study 2010

	Percent
End-of-life planning	
Advance directive (living will and/or durable power of attorney-health care)	28.10
No advance directive	71.90
Reason for no advance directive	
Lacking information	32.09
Death avoidance	57.22
Other persons	47.12
Current good health	36.80
Discussion	55.03
No discussion	44.97
Reason for no discussion	
Lacking information	16.35
Death avoidance	65.71
Other persons	18.24
Current good health	31.21
Treatment preference (0 = stop life-prolonging treatment; 10 = continue all treatment)[a]	5.23 (3.60)
Report of partner's treatment preference (0 = stop life-prolonging treatment; 10 = continue all treatment)[a]	5.51 (3.58)
Woman's report of male partner's treatment preference underestimates by 3 or more[b]	18.20
Woman's report of male partner's treatment preference underestimates by 1-2[b]	14.17
Woman's report of male partner's treatment preference is accurate[b]	28.82
Woman's report of male partner's treatment preference overestimates by 1-2[b]	13.78
Woman's report of male partner's treatment preference overestimates by 3 or more[b]	25.04
Age and Health	
Age (years)[a]	42.87 (12.01)
Good/very good/excellent health	87.98
Fair/poor health	12.02
Individual sociodemographic characteristics	
High school or less	41.93
Some college	27.29
College degree or more	30.78
White	71.31
Black	7.28
Hispanic	14.55
Other race/ethnicity	6.86
Male	50.00
Female	50.00
Couple sociodemographic characteristics	
Cohabiting	17.85
Married	82.15
Years since beginning dating relationship[a]	18.31 (12.41)
Annual household income (1 = less than $5,000; 19 = $175,000 or more)[a]	12.27 (3.90)
N	2,150

Note. Statistics are weighted to be representative of the U.S. population of heterosexual married and cohabiting adults.
[a]Mean and standard deviation shown.
[b]Percentage not statistically different from that of men's reports of their female partner's preference.

additional year of age was associated with a 3% increase in the odds of having a discussion ($p < .001$). Persons in fair or poor health had 85% greater odds of having had a discussion than persons in good, very good, or excellent health ($p < .01$). In Model 2, the interaction of age and health was not significant.

Other control variables, including marital status and race/ethnicity, were significantly related to ACP. These results are explored elsewhere (Carr, 2012) and are consistent with prior literature.

Surrogate Accuracy

Regression results for the second research question are presented in Table 3. One's own planning had little to do with one's ability to correctly report one's partner's preferences. Having one's own AD decreased the odds of making a small error of overtreatment (OR = 0.39, $p < .05$); otherwise, no comparisons were statistically significant. There were no statistically significant gender differences; that is, men's planning status was also unrelated to their accuracy in reporting women's preferences. Therefore, results for men are not shown, but are available upon request.

Discussion

This internet survey study of 1,075 heterosexual married or cohabiting couple dyads aged 18–64 revealed two important findings about end-of-life planning in the United States. First, age and health appear to have independent relationships to both formal and informal aspects of ACP, in line with the TTM. Second, one's own readiness to plan does not render one ready to perform as a surrogate for one's partner; an individual's completion of ACP was unrelated to the accuracy of one's proxy reports of partners' treatment preferences. These results indicate potential new directions for public health campaigns related to ACP.

Age, Health, and Stages of Change

The findings in this study confirm those of other recent research and expand upon them by using the framing principles of the TTM. In this study, 28% of adults 18–64 had reached the action stage with regard to AD completion; this figure is similar to the 34% reported in a representative sample of Maryland residents aged 18 and older (Pollack et al., 2010). Over half (55%) had discussed their care preferences with someone.

As in prior studies, age was a strong predictor of ACP, with older adults more likely to have both ADs and discussions (Pollack et al., 2010). Poorer health status was related to increased likelihood of discussions but not related to AD completion, and there was no interactive association between age and health status for any ACP behavior. These results are evidence in support of the TTM, which stresses the importance of disentangling potential influences on behavior. These results do not support prospect theory, which suggests that age and health interact in their effects on ACP (Winter & Parker, 2007).

Table 2. Binary Logistic Regressions, Odds of Having Completed Advance Care Planning

	Advance directive	Advance directive	Discussion	Discussion
	Model 1	Model 2	Model 1	Model 2
	Odds ratio (95% CI)	Odds ratio (95% CI)	Odds ratio (95% CI)	Odds ratio (95% CI)
Age and health				
Age (years)	1.04***	1.04***	1.03***	1.03***
	(1.03–1.06)	(1.02–1.06)	(1.01–1.04)	(1.01–1.04)
Fair or poor self-reported health	1.61	0.88	1.85**	2.28
	(0.96–2.68)	(0.09–9.02)	(1.21–2.83)	(0.46–11.27)
Age × fair/poor health interaction	—	1.01	—	1.00
		(0.97–1.06)		(0.96–1.03)
Couple characteristics				
Cohabiting	0.96	0.97	0.70*	0.70*
	(0.65–1.42)	(0.66–1.43)	(0.50–0.98)	(0.50–0.98)
Annual household income (1 = *less than $5,000;* 19 = *$175,000 or more*)	1.07*	1.07*	1.04*	1.04
	(1.02–1.13)	(1.02–1.13)	(1.00–1.08)	(1.00–1.08)
Individual characteristics				
Some college	1.11	1.11	1.20	1.20
	(0.80–1.54)	(0.80–1.54)	(0.90–1.60)	(0.90–1.60)
College degree or more	1.57*	1.56*	1.22	1.22
	(1.11–2.23)	(1.10–2.22)	(0.88–1.69)	(0.88–1.70)
Black	0.85	0.86	1.07	1.06
	(0.42–1.75)	(0.42–1.78)	(0.58–1.98)	(0.57–1.97)
Hispanic	0.68	0.68	0.40***	0.40***
	(0.40–1.14)	(0.40–1.14)	(0.26–0.60)	(0.26–0.60)
Other race/ethnicity	1.23	1.23	0.53**	0.53**
	(0.64–2.36)	(0.64–2.37)	(0.33–0.85)	(0.33–0.85)
Female	0.72**	0.72**	1.09	1.09
	(0.60–0.88)	(0.60–0.88)	(0.90–1.33)	(0.90–1.33)
N	2,077	2,077	2,081	2,081
χ^2; *df*	87.48; 10	88.33; 11	80.99; 10	81.20; 11

Note. Standard errors are corrected for the clustering of 2,150 individuals in 1,075 couples. Statistics are weighted to be representative of the U.S. population of heterosexual married and cohabiting adults.
*$p < .05$; **$p < .01$; ***$p < .001$.

The TTM stresses the importance of matching processes of change to an individual's stage of change (Prochaska, 2008). Three of the four reasons for not planning offered in this study—lacking information, wish to avoid thinking about death, and current good health—seem indicative of the precontemplation stage of change in which people do not even consider planning. The processes of change most effective for moving persons beyond precontemplation include consciousness-raising, dramatic relief, and environmental evaluation. Practical factual information (i.e., consciousness-raising) about why ACP is important and how it is done is likely to appeal to pre-contemplators. However, informational interventions may fail if they do not also include emotional material or raise empathy (i.e., dramatic relief and environmental evaluation). Qualitative research indicates that adults identify concern for self or others and stories, experiences, and anecdotal evidence as the major influences on their planning behavior (Levi, Dellasega, Whitehead, & Green, 2010).

Perspectives on Surrogate Decision Making

Based on the TTM model of stages of change, this study asked whether completion of one's own ACP might result in enhanced ability to understand one's partner's treatment preferences. However, completion of one's own ACP was unrelated to accuracy at reporting one's partner's preferences. Although Sudore and colleagues (2008) found that communication was a precursor to the action stage of completing ADs, Fried and colleagues (2010) found that ACP behaviors were independent. The present results lend some support to Fried and colleagues' conclusion: Being in the action stage with regard to one's own plans appears unrelated to one's stage of preparation to serve as a surrogate decision maker.

In the search for factors related to surrogate accuracy, null results are mounting: Discussion does not help surrogates better understand specific preferences (Ditto et al., 2001), nor does a surrogate's own experience of ill health help with perspective taking (Moorman et al., 2009). Perhaps a more attainable standard than substituted judgment could both protect patient autonomy and ensure quality care (Sabatino, 2010).

Limitations

This study is limited in several important respects. First, although the sample is a national one, design elements

Table 3. Multinomial Logistic Regression, Odds that a Woman Knows Her Male Partner's Treatment Preference

	Under by 3 or more (*N* = 181)	Under by 1–2 (*N* = 153)	Over by 1–2 (*N* = 139)	Over by 3 or more (*N* = 238)
	vs. Perfect match (*N* = 306)			
	Odds ratio (95% CI)	Odds ratio (95% CI)	Odds ratio (95% CI)	Odds ratio (95% CI)
End-of-life planning				
Woman has an advance directive	0.76	1.13	0.39*	1.08
	(0.37–1.56)	(0.54–2.35)	(0.18–0.83)	(0.57–2.05)
Woman has held discussion	1.24	1.02	1.00	1.03
	(0.68–2.24)	(0.57–1.83)	(0.55–1.83)	(0.59–1.80)
Man has an advance directive	1.43	0.66	2.06*	0.86
	(0.71–2.88)	(0.31–1.38)	(1.06–4.01)	(0.48–1.54)
Man has held discussion	0.57	1.01	0.85	0.85
	(0.32–1.02)	(0.56–1.81)	(0.46–1.58)	(0.47–1.55)
Woman's characteristics				
Treatment preference (0 = stop life-prolonging	0.86***	0.98	1.08	1.18***
treatment; 10 = continue all treatment)	(0.80–0.92)	(0.91–1.06)	(1.00–1.16)	(1.07–1.29)
Some college	0.59	0.62	0.66	0.63
	(0.31–1.11)	(0.31–1.22)	(0.34–1.30)	(0.37–1.09)
College degree or more	0.85	1.15	0.91	0.81
	(0.43–1.67)	(0.57–2.30)	(0.44–1.90)	(0.43–1.51)
Black	0.29	1.13	0.23*	0.62
	(0.08–1.12)	(0.31–4.08)	(0.05–1.00)	(0.20–1.86)
Hispanic	0.48	0.45	0.73	0.55
	(0.22–1.05)	(0.17–1.21)	(0.30–1.76)	(0.22–1.37)
Other race/ethnicity	0.29*	0.96	0.65	1.74
	(0.09–0.92)	(0.35–2.61)	(0.22–1.92)	(0.78–3.88)
Couple characteristics				
Cohabiting (vs. married)	0.83	0.80	1.04	0.58
	(0.41–1.69)	(0.40–1.59)	(0.51–2.14)	(0.29–1.17)
Woman unhealthy; man healthy	0.80	1.22	0.82	1.82
	(0.31–2.04)	(0.44–3.40)	(0.28–2.46)	(0.81–4.10)
Man unhealthy; woman healthy	1.69	0.31	0.58	1.52
	(0.65–4.42)	(0.08–1.14)	(0.19–1.81)	(0.58–3.95)
Both partners unhealthy	0.74	0.21	0.59	0.12**
	(0.18–2.93)	(0.03–1.52)	(0.13–2.65)	(0.03–0.55)
Older partner's age (years)	0.98	1.02	0.97	1.03
	(0.95–1.01)	(0.98–1.05)	(0.94–1.01)	(1.00–1.06)
Years since beginning dating relationship	0.99	0.99	1.01	0.99
	(0.96–1.02)	(0.96–1.02)	(0.97–1.05)	(0.97–1.02)
Annual household income (1 = less than $5,000;	1.03	1.00	1.02	0.95
19 = $175,000 or more)	(0.95–1.12)	(0.94–1.07)	(0.94–1.11)	(0.88–1.01)
N	984			
χ^2; *df*	179.99; 68			

Note. Statistics are weighted to be representative of the U.S. population of heterosexual married and cohabiting adults.
*p <.05; **p <.01; ***p <.001

prevent it from being representative of the general population. In the general population, African Americans are underrepresented among married couples and overrepresented among cohabiting couples (U.S. Census Bureau, 2010). Thus, because the present sample is 70% married dyads, fewer African Americans appear than would appear in a general population sample. Further, the couples in this study were heterosexual. The results cannot be generalized to gay or lesbian adults.

Second, self-reported health was the only measure of health. Other studies indicate that a relationship between health and ACP is evident for other measures of health (Carr & Khodyakov, 2007; Fried et al., 2010). Future research might further compare the TTM with prospect theory when examining the relationships between perceived and objective health status with regard to the stages of ACP.

Third, this study cannot make full use of the TTM because it measured only some constructs. Non-planners were not asked about the potential benefits of planning; so, no measure of decisional balance was available. Thus, participants in the action stage were easily identified, but the stages of other participants could not be determined.

Finally, the data were cross-sectional, a particular weakness when employing a time-based theory. Typically, researchers operationalize the stages of change across a 6-month time horizon, where precontemplators do not intend to change their behavior in the next 6 months, but contemplators intend to change within 6 months, and preparers, 1 month (Finnell et al., 2011). This study has neither measures of intentions nor follow-up measures of actual decisions.

Conclusion

This study joins the recent wave of interest in applying TTM of health behavior change as a framework for thinking about ACP. Because preferences for care take shape over time, the aspects of the TTM that treat behavior change as a process are well suited to the ACP context. Future use of the TTM may allow scholars and practitioners to design new methods of helping patients to prepare for their own death and dying, as well as that of close others.

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