Advance Care Plans: Planning for Critical Healthcare Decisions

NAZLI GURDAMAR-OKUTUR,* SIMONA BOTTI, AND VICKI G. MORWITZ

ABSTRACT Advance care plans (ACPs) document personal values and healthcare preferences for critical situations where individuals cannot speak for themselves. Although ACPs can prevent receiving costly unwanted treatments and ensure receiving preferred treatments, few people have one. We examine factors associated with ACP engagement and design interventions to increase engagement. We find that ACP holders and nonholders largely have common values and preferences, which similarly vary with demographics. For example, older (vs. younger) individuals, regardless of ACP ownership, prefer to be able to care for themselves and to avoid prolonged end-of-life medical interventions. These two groups also differ in important ways: those who have or intend to create ACPs (vs. not) prefer avoiding invasive life-sustaining treatments and having a peaceful end of life. However, interventions that use these similarities and differences to increase ACP engagement are unsuccessful. We propose that structural approaches may be more effective in increasing ACP uptake.

The most difficult choices people might ever be asked to make involve critical health decisions for themselves, their loved ones, or others in their care. Consider the following hypothetical scenarios. Annabelle has lived a good long life and is now in a nursing home. Unfortunately, she fell and is unconscious. Her family must quickly decide whether to send her to the hospital or have her cared for at the nursing home.

Leandro is in the hospital being treated for COVID-19. His health has deteriorated rapidly, and he is unable to communicate. His family can only interact with his medical team by phone. A decision must be made about whether to intubate him, although the medical team is not confident that he will survive even with this procedure.

Keisha has terminal cancer and likely less than a year to live. While in the hospital her heart stops, an immediate decision must be made whether to attempt resuscitation, and the doctors cannot reach her family. They do not know that the wedding of Keisha's daughter is a few months away and that all she wants is to live to see this wedding.

In these scenarios, patients are unable to communicate their will. If they had created an easily accessible advance care plan (ACP) indicating their preferences, these critical treatment decisions would be made by informed medical teams or appointed proxies. Since healthcare preferences are hard to predict (Shalowitz, Garrett-Mayer, and Wendler 2006), the lack of an ACP can result in unwanted treatments that are potentially harmful for patients (Earle et al. 2008), stressful for families and medical professionals (Detering et al. 2010; Peterson et al. 2010), and costly for individuals and society (Zhang et al. 2009; Colaberdino et al. 2016). Despite this, very few people worldwide have ACPs (Carr and Luth

Nazli Gurdamar-Okutur (nokutur@ku.edu.tr) is assistant professor of marketing at Koç University, 34450 Sariyer, Istanbul, Turkey. Simona Botti (sbotti@london.edu) is professor of marketing at London Business School, Regent's Park, London NW1 4SA, UK. Vicki G. Morwitz (vicki.morwitz@columbia.edu) is Bruce Greenwald Professor of Business and Professor of Marketing at the Columbia Business School, Columbia University, 795 Kravis Hall, New York, NY 10027, USA. This work was supported by the Research and Materials Development fund from London Business School awarded to the second author and a grant from the NYU Stern Center for Global Economy and Business awarded to the third author. The second and third authors contributed equally. The authors would like to thank Jeff Zucker, a digital advance care planning industry pioneer, for his feedback and advice, the attendees at a presentation of this research at Columbia University for their helpful comments, and the London Business School Research Lab for assistance in data collection.

This article was submitted to the journal during Angela Y. Lee's term as editor in chief and has been handled completely independently of current journal administration.

Issue Editors: Dipankar Chakravarti, Jian Ni and Meng Zhu

Published online February 21, 2022.

Journal of the Association for Consumer Research, volume 7, number 2, April 2022. © 2022 Association for Consumer Research. All rights reserved. Published by The University of Chicago Press for the Association for Consumer Research. https://doi.org/10.1086/718453

2017). Our goal is to understand what factors are associated with individuals' engagement in advance care planning and whether these factors can be used to design interventions that increase this engagement.

We first review the literature on ACPs and their uptake. We then analyze data from a digital advance care planning platform, find commonalities and differences in values and preferences across ACP holders, and show that they vary with demographics. For example, older (vs. younger) individuals prefer being able to care for themselves and avoiding invasive life-sustaining treatments. We replicate these patterns in survey data among nonholders of ACPs. We also observe mostly common preferences for ACP holders and nonholders but find some important differences that are consistent across studies: those who have or intend to create ACPs have a greater preference for avoiding invasive life-sustaining treatments and for having a more peaceful end of life than those who do not have or do not intend to create ACPs. We then leverage these similarities and differences to examine whether manipulating individual values and healthcare preferences could enhance engagement in advance care planning; however, these manipulations do not increase, and sometimes even decrease, engagement. We therefore suggest that interventions focused on structural approaches involving relevant stakeholders may be more effective, and test one such intervention entailing the normalization of the ACP creation process. Finally, we highlight opportunities for continuing research on this important topic.

ADVANCE CARE PLANNING

Advance care planning refers to the process of learning about different types of healthcare treatment options, considering them ahead of time, not only during a health crisis, and letting family and healthcare providers know values and preferences in case one is unable to speak or decide autonomously (NIH 2020). An ACP is the outcome of the planning process. In most countries, ACPs replace two paper-based documents—living wills and medical powers of attorney—that, when combined, are commonly referred to as advance health directives (AHD). Living wills outline the types of medical care to be executed or avoided (e.g., cardiopulmonary resuscitation [CPR], artificial nutrition and hydration, mechanical ventilation, and palliative care), whereas medical powers of attorney identify persons having the authority to make treatment decisions if there is no living will or for circumstances not covered by it. ACPs can be written or digital documents, recorded statements, or a combination of these. Regardless of format, they should include individuals' values, priorities and goals of care, preferences regarding end-of-life treatments and practical arrangements, healthcare proxy names, as well as any additional information deemed important in the event individuals cannot communicate during a health crisis (Puchalski et al. 2000; Aspen Institute Health Strategy Group 2016; NIH 2020).

Advance care planning is beneficial both from a societal and an individual perspective, especially if the documents are authenticated, frequently updated, and readily accessible in electronic medical records. From a societal perspective, ACPs can significantly lower public healthcare costs by reducing clinician's delays in deciding what treatments to administer and their costs. Medicare's spending in the last 6 months of life comprises from 13% to 25% of all benefit costs (between $96 and $185 billion in 2018; Duncan et al. 2019). Various studies report different estimates of the savings from ACPs including 13.55 fewer per-patient hospital days (Third Way 2015), a decrease of 35% in unnecessary or unwanted care (Colaberdino et al. 2016), and a cost reduction of $9,500 per person (Bond et al. 2018). Other estimates include a net annual savings of $8.3 billion for Medicare by ensuring end-of-life care that is consistent with patients' wishes (Rinaldo, Altman, and Cannon 2020). Critically, this cost reduction does not imply reduced quality of care or increased mortality rates (Zhang et al. 2009; Detering et al. 2010).

From an individual perspective, advance care planning is consistent with the bioethical principle of autonomy and individual choice, which defends individuals' right to direct their medical treatment (Snyder 2012). This principle guides healthcare decision-making processes in the Western world and helps individuals receive treatments that are consistent with their values and preferences (Scheunemann et al. 2015; Carr and Luth 2017; Bond et al. 2018). For example, although 86% of terminally ill patients in the United States prefer to die at home, only 22% do so, whereas the majority (58%) die in hospitals (Fine et al. 2016). The misalignment between desired and actual care often causes pain and suffering (Matsuyama, Reddy, and Smith 2006; Earle et al. 2008). To illustrate, cancer patients without (vs. with) ACPs are seven times more likely to have mechanical ventilation and eight times more likely to undergo resuscitation attempts at the end of life. Similarly, nursing home patients without ACPs undergo more hospitalizations and are less satisfied with their care despite costs being 33% higher (Molloy et al. 2000; Weems and Johnson 2020). The potential for misalignment between desired and actual care is also associated with psychological distress and emotional burden for surrogate decision makers and the presence of ACPs is related to lower caregiver stress,

anxiety, and depression (Carr and Khodyakov 2007; Detering et al. 2010; Sulmasy and Snyder 2010; Scheunemann, Arnold, and White 2012).

Despite their benefits, only about 30% of US adult citizens have ACPs (Wilkinson, Wenger, and Shugarman 2007). In other countries, ACP completion rates are even lower: for example, less than 1% in Japan and Australia and between 7% and 8% in the Netherlands and the United Kingdom (Carr and Luth 2017). Although various organizations have launched digital solutions to facilitate the creation and accessibility of ACPs, uptake remains low; for example, one study shows that only 1% of all patients admitted to an emergency department in Texas had ACPs readily available (Davis 2012; Fine et al. 2016; Pope 2020). The low diffusion and accessibility of ACPs are even more problematic given the expected increase in the number of older adults in coming years: by 2060, 100 million US citizens are predicted to be over 65 and eligible for Medicare, which is already spending 25% of its annual budget for last-year-of-life care (Rinaldo et al. 2020). The recent COVID-19 crisis further highlighted these issues as critically ill patients often cannot express their wishes and do not have families at their bedsides.

The medical literature has examined several psychological and pragmatic factors associated with low ACP uptake. From a psychological perspective, individuals' desire to eschew death-related thoughts and to avoid exerting personal control over critical healthcare decisions are negatively correlated with engagement with advance care planning (Carr and Khodyakov 2007; Wilkinson et al. 2007). Consistent with these findings, older adults with higher levels of death anxiety are less likely to make end-of-life plans (Carr and Moorman 2009), and many individuals who have considered ACPs do not wish them to be binding, preferring surrogates to have some leeway to override their written directives (Puchalski et al. 2000; Hawkins et al. 2005).

From a pragmatic perspective, individuals are less likely to create ACPs if their awareness is low and/or if they believe that it will take too much time or money. Attempts to resolve these concerns, however, have not yet been successful in significantly increasing ACP diffusion (Wilkinson et al. 2007). Individuals are also concerned that decisions made in the present can constrain potential future treatment options, worry that the occurrence of a health crisis may change their preferences, and fear that their recorded ACPs may not be specific enough to provide useful guidance to healthcare providers (Ditto et al. 2003; Hawkins et al. 2005; Carr and Khodyakov 2007; Sulmasy and Snyder 2010; Scheunemann et al. 2012; Pope 2020).

We contribute to current knowledge about the psychological and pragmatic concerns that influence uptake in advance care planning by investigating the role of individuals' values and healthcare preferences. This insight could inform the development of interventions aimed at encouraging people to engage with advance care planning.

STUDY 1: VALUES AND PREFERENCES AMONG ACP HOLDERS

Study 1 analyzes data from a free digital ACP platform with the objective to identify commonalities and differences in values and preferences across ACP holders.

Method

Of the initial random sample of 1,054 records, we excluded two that were complete but not signed, 148 that were incomplete, six that had missing values for current health status, and three who reported being 110 or older, leaving us with 895 finalized ACPs (M_{age} = 49.52, SD = 16.34; 55.0% female, 45% male).

We used k-means clustering, a common exploratory segmentation method (Punj and Stewart 1983), to examine commonalities and differences in values and preferences among ACP holders. In addition to values and preferences, we clustered individuals based on their demographics (sex and age) and current health status. As cluster analysis does not have an exact statistical solution, we considered 1–11 cluster solutions and selected k, the number of clusters that maximized Pseudo-F, subject to the constraint that no cluster contained fewer than 40 individuals.

Results

The above criteria led to a four-cluster solution (table 1). Individuals in cluster 1 ("young, focusing on family") comprised 29.5% of the sample and, compared to other clusters, were relatively young (M_{age} = 29.1), disproportionally female (64.4%), and in good health. They were more likely to want to donate their organs. It was less important to them to be able to care for themselves and avoid machine dependence but more important to be with family and resolve any conflicts. They were also more likely to want life support and to receive CPR.

Individuals in cluster 2 ("adults, concerned about CPR") comprised 26.9% of the sample, tended to be in good health but were older than those in cluster 1 (M_{age} = 47.0). Like cluster 1, they were more likely than the remaining two clusters to want to donate their organs. However, different from cluster 1, they were less likely to want life support and CPR,

Table 1. Study 1: Cluster Analysis Solution Summary

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	One-way ANOVA	
	"Young, focusing on family"	"Adults, concerned about CPR"	"Young seniors, wanting independence"	"Old seniors, avoiding life support"	*F*-test**	*p*-value
Percent of overall sample	29.50	26.93	32.51	11.06		
Average age	29.10[2,3,4]	46.96[1,3,4]	61.45[1,2,4]	75.16[1,2,3]	3,180.94	<.001
Percent female	64.39[3,4]	58.51[3,4]	49.14[1,2,4*]	38.38[1,2,3*]	8.78	<.001
Current medical condition:						
Good health	95.83[2,3,4]	89.63[1,3,4]	82.13[1,2]	80.81[1,2,]	10.44	<.001
Serious health issues	1.89[2,3,4,*]	5.39[1,*]	6.19[1]	6.06[1,*]	2.26	.08
Chronic disability	2.27[3,4]	4.98[3,4]	11.34[1,2]	12.12[1,2]	7.79	<.001
Told may die soon	0.00	0.00	0.34	1.01	1.36	.26
If possible to choose, where like to spend final days:						
At home	67.42	62.24	61.51	65.66	0.85	.47
Hospice	7.20[3,4]	10.79[3,4]	16.49[1,2,4,*]	23.23[1,2,3,*]	7.23	<.001
Hospital	4.55	2.49	3.09	1.01	1.18	.32
Not sure	20.83[4]	24.48[4]	18.90[4*]	10.10[12,3,*]	3.16	.02
Want home hospice	58.71	53.53	51.55	50.51	1.19	.31
Consult palliative	3.03	2.49	2.06	1.01	0.48	.70
Want to donate all organs	67.80[3,4]	66.80[3,4]	56.36[1,2]	49.49[1,2]	5.61	< .001
If seriously ill and cannot make wishes known, what is important:						
Being free from pain	81.06	83.82	86.25	89.90	1.79	.15
Being able to feed, bathe, and take care of self	61.36[2,3,4,*]	68.88[1,*]	71.82[1]	70.71[1,*]	2.57	.05
Being with family	80.68[2,3,4,*]	73.86[1,*]	70.79[1]	68.69[1]	3.07	.03
Not being a financial burden to family	78.41	82.57	80.76	73.74	1.29	.28
Not being a physical burden to family	75.38	80.91	82.82	79.80	1.68	.17
Being at peace with my God	33.33	36.93	40.89	36.36	1.14	.33
Resolving conflicts	25.76[4]	20.75	20.62	14.14[1]	2.08	.10
Avoiding prolonged dependence on machines	76.52[2,3,4]	86.31[1]	91.07[1]	91.92[1]	9.60	< .001
Avoiding prolonged dependence on artificial or assisted nutrition through tubes	65.15[2,3,4]	78.42[1,3,4]	88.32[1,2]	87.88[1,2]	17.60	< .001
Dying at home	32.20	31.12	35.74	41.41	1.36	.25

If declared not having sound decision-making capacity or incompetent, want to be allowed to change my preferences regardless of mental state (vs. following this document)	7.20	4.15	3.78	3.03	1.63	.18
If incapacitated:						
Short-term life support	17.05[2,3,4]	4.98[1]	3.09[1]	4.04[1]	15.67	< .001
No treatment	71.59[2,3,4]	86.31[1,3]	92.44[1,2]	89.90[1]	17.58	< .001
Not sure	11.36[3,4,*]	8.71[3,*]	4.47[1,2,*]	6.06[1,*]	3.30	.02
Thoughts on cardiopulmonary resuscitation (CPR):						
Want limitations	65.91[2,4]	79.67[1,3,4]	71.13[2,4]	53.54[1,2,3]	8.80	<.001
Let healthcare agent decide	18.56[2]	9.96[1,3,4]	17.87[2]	24.24[2]	4.34	.005
No CPR	4.92[3,4,*]	7.47[4]	8.93[1,4,*]	19.19[1,2,3]	6.55	< .001
Want CPR	10.61[2,3,4]	2.90[1]	2.06[1]	3.03[1]	8.95	< .001
CPR not sure	0.00	0.00	0.00	0.00		
Want doctors and nurses to know the role religion, faith, or spirituality plays in life	45.83	46.47	51.55	47.47	0.73	.53
If having significant pain or suffering, want doctors to consult a supportive and palliative care team	96.59[4]	94.19	93.47	89.90[1]	2.13	.09
Why created ACP:						
Asked by doctor	1.14[4]	2.07[4]	2.41[4]	10.10[1,2,3]	7.75	< .001
Mentioned by family	11.36	7.47	8.93	7.07	0.97	.40
Was planning ahead	85.61	85.06	82.13	75.76	1.96	.12

Note.—This table displays the percentage of people in each cluster who had indicated agreement to the item stated in the first column in their advance care plans.

[1,2,3,4] Following a marginally significant omnibus test ($p < .10$) we conducted post-hoc pairwise comparisons between clusters. Superscript of 1, 2, 3, and 4 indicates that it is significantly different at $p < .05$ level from cluster 1, 2, 3, or 4, respectively.

* Difference is marginally significant at $p < .10$ level.

** $F(3,891)$.

as it was more important for them to avoid machine dependence. Compared to all other clusters, they were less likely to leave the CPR decision to their healthcare agent.

Individuals in cluster 3 ("young seniors, wanting independence") comprised 32.5% of the sample, had an average age of 61.5 and, compared to other clusters, a higher likelihood of having a chronic disability. They were more likely than the first two clusters to want to spend their final days in a hospice-type setting. It was more important for them to be able to care for themselves and avoid machine dependence, as they preferred to not receive life support.

Finally, the results revealed a small fourth cluster ("old seniors, avoiding life support") that comprised 11.1% of the sample. These individuals were older, on average, than the other clusters (M_{age} = 75.2), more likely to be male (61.6%), and less likely to be in good health. They were more likely than the other clusters to want to spend their final days in a hospice-type setting. Like cluster 3, it was more important to them to be able to care for themselves and avoid prolonged machine dependence, and less important that they be with family and resolve conflicts. They were also less likely to want CPR than the other clusters.

We next ran a series of logistic regressions using participants' values and preferences as dependent variables, and age, sex, and health as independent variables. The analyses revealed age as a significant predictor, mirroring the cluster analysis findings. The importance of being able to care for oneself and avoiding machine dependence increased with age, while the importance of being with family and resolving conflicts decreased with age. Additionally, older individuals indicated a greater preference to spend their final days in a hospice facility and a lower preference both to receive invasive life-sustaining treatments, like life support or CPR, and to donate organs. Sex was another significant predictor: it was more important for females to be with family, be at peace, avoid machine dependence, and spend their final days in a hospice facility than for males (all $p < .05$; see the appendix, available online, for detailed results). Health status was not a significant predictor.

Discussion

Individuals' values and preferences regarding critical healthcare treatments varied across ACP holders in relation to demographics. For example, relative to younger individuals, older individuals preferred to be able to care for themselves, to avoid invasive life-sustaining treatments, and to die more peacefully outside of a hospital.

The next study investigates whether the observed relationships hold among nonholders of ACPs and whether values and preferences have a role in ACP-creation intentions.

STUDY 2: VALUES AND PREFERENCES AMONG ACP NONHOLDERS

We conducted a survey that included questions modeled on those of study 1 and an additional question about intentions to create an ACP.

Method

We recruited 201 participants on Amazon Mechanical Turk (mTurk) and removed two who failed to complete the survey, leaving us with 199 (M_{age} = 36.5; 50.8% male, 49.2% female). All participants passed an attention check.

We first measured participants' current health using one general question ("In general, how would you describe yourself?" "1 = not at all healthy," "7 = very healthy"), followed by six specific statements (e.g., "I exercise on a regular basis," "1 = absolutely false," "7 = absolutely true"). We used a continuous measure because the low variance in the categorical health measure in study 1 (88% of participants selected "good health") might account for the counterintuitive result that health status did not predict values and preferences.

Participants then responded to the same healthcare preference questions of study 1. Instead of choosing from a list as in study 1, participants rated these preferences on scales, which facilitated their use as predictors of intentions. Specifically, participants rated their willingness to have life support and CPR, spend their final days in different locations, and donate their organs on 7-point scales (for more details see the appendix).[1] All data and materials for this and the studies that follow are available at https://osf.io/wdb5a/?view_only=397426d95640458594ef8808c5275e68).

Next, participants read the definition of ACPs[2] and indicated whether they currently had one; if they did not, they reported their likelihood to create one in the future ("1 = extremely unlikely," "7 = extremely likely"). We then measured participants' values, also modeled on those of study 1, as the extent to which different considerations were imporant

1. For exploratory purposes we also measured construal level, self-construal, locus of control, satisfaction with life, future time perspective, preference for paternalistic versus autonomous decision-making, death avoidance, fear of personal death, belief in afterlife, religiosity, and political orientation.

2. In the stimuli we used the term "advance health directive" rather than "advance care plan" since we were informed by experts at the time that the former term was more common.

to them on 7-point scales (e.g., "being free from pain," "being with my family," "not being a financial burden to my family").

Finally, participants completed an attention check (Oppenheimer, Meyvis, and Davidenko 2009) and responded to demographic questions.

Results

One hundred seventy-eight participants (89.4%) reported not having an ACP. We ran a series of regressions using values and healthcare preferences as the dependent variables, and age, sex, and health as independent variables as in study 1 (all $p < .05$ unless otherwise indicated; see the appendix for detailed results).

The findings were consistent with those of study 1. The importance of being able to care for the self ($p = .06$) and avoiding machine dependence increased with age. Older individuals indicated lower preference to receive life support indefinitely ($p = .10$) or until the doctors decide it is time to stop ($p = .07$). Females considered it to be more important to be with family, be at peace, and to resolve conflicts than males. Different from study 1, current health was a significant predictor: being with family, resolving conflicts ($p = .07$), and not being a burden ($p = .08$) were more important for healthier individuals, who also indicated greater preference for CPR and a lower likelihood to leave organ donation decisions to doctors.

Next, we regressed intentions to create ACPs on values and preferences, controlling for age, sex, and health status. We found that intentions to create ACPs increased with greater preference to spend one's final days at home and be with family, to be at peace, to donate organs, to delegate CPR decisions to loved ones, and to avoid invasive life-sustaining treatments.

Discussion

The relationships between demographics, values, and preferences found in ACP holders in study 1 occur among people who do not have ACPs. Consistent with the observed study 1 patterns, it was more important for older (relative to younger) individuals to be able to care for themselves and to avoid machine dependence, and for females (relative to males) to be with family. Moreover, healthier individuals, like younger individuals in study 1 who are presumably healthier, indicated greater preferences for being with family and receiving CPR.

Study 2 also provided initial evidence that values and preferences related to having a peaceful end of life and avoiding invasive life-sustaining treatments were associated with greater intentions to create ACPs. Based on these results, we next tested an intervention aimed at increasing ACP engagement.

STUDY 3: SEGMENT-SPECIFIC VALUES AND PREFERENCES AND ADVANCE CARE PLANNING

Given the relationships between demographics, values and preference, and intentions to create ACPs among nonholders observed in study 2, study 3 tested whether receiving information about another person with similar age, values, and preferences who has an ACP increases intentions to create one.

Method and Results

We recruited 302 mTurk participants ($M_{age} = 41.6$; 51.3% male, 48.0% female, 0.7% nonbinary; 86.4% without an ACP) in study 3A and 303 in study 3B ($M_{age} = 41.6$; 53.1% male, 46.2% female, 0.7% nonbinary; 85.1% without an ACP). Participants were randomly assigned to either an other-information condition or a control condition. In the other-information condition, participants read about the values and preferences of a person with an ACP (a younger person in study 3A, an older person in study 3B, modeled on clusters 1 and 4 from study 1, respectively). In the control condition, participants read information about ACPs (for full instructions, see the appendix). In addition to study 2's ACP-creation intentions measure, engagement with advance care planning was measured by two questions on interest in seeking further information about ACPs. We expected engagement with ACPs to be higher in the other-information condition than the control condition and to interact with age, such that reading about a younger (older) ACP holder would lead to a larger increase in engagement among younger (older) participants in study 3A (3B).

We ran two separate two-stage hierarchical multiple regressions with intentions and interest as dependent variables. The manipulated other-information factor was entered in stage one, the measured age factor and their interaction were entered in stage two. In stage one, we found marginal effects of other-information, such that those in the other-information condition were more likely to create ACPs in study 3A and to request additional information about ACPs in study 3B than those in the control condition. In stage two, however, the other-information condition and age interaction was not significant in either study (for full results, see the appendix).

Discussion

Studies 3A and 3B provide partial evidence that receiving information about other ACP holders increases engagement

in advance care planning, but no evidence that information about someone with similar age influenced engagement among the relevant groups.

There are several potential reasons why these studies had only weak results, including their hypothetical nature, the low involvement of mTurk workers, and the lack of a perfect match between the age of the person profiled in the scenario (29 in study 3A, 75 in study 3B) and that of the respondents (average age was 41.6 in both studies). The relevance of this approach could possibly be increased by using algorithms to enhance the individual-level similarity between the demographics of the scenario protagonist and those of the recipient.

Another potential explanation for these weak results is that values and preferences may be more important than demographics, and the profiles may not have matched participants in this sense. In the next study, we therefore tested whether making one's own preferences salient increases engagement with ACPs.

STUDY 4: INDIVIDUAL-SPECIFIC VALUES AND PREFERENCES AND ADVANCE CARE PLANNING

In addition to examining the effect of making individual values and preferences salient on engagement with ACPs, study 4 explored whether the correlational patterns observed in study 2 between values, preferences, and ACP creation intentions replicate across individuals who do and do not have ACPs.

Method

We recruited 301 mTurk participants ($M_{age} = 41.0$; 50.2% male, 49.5% female, 0.3% nonbinary). To manipulate the salience of individual values and preferences we measured them either before (salient condition) or after (not-salient condition) measuring engagement with ACPs. Values and preferences were measured as in study 2, whereas engagement as in study 3; we additionally asked three questions measuring the extent to which participants would consider creating ACPs (for full instructions, see the appendix). Finally, participants reported their current health and responded to demographic questions.

Results

Two hundred fifty-eight participants (85.7%) reported not having ACPs, while 43 (14.3%) reported having one. Among those without ACPs, salience of individual values and preferences did not have an effect on consideration, $F(1, 256) = 0.16, p = .69$. Contrary to our expectations, participants' interest in information was lower in the salient (25.4%) than in the not-salient (38.7%; $X^2(1) = 5.28, p = .02$) condition. Intentions to create an ACP were also directionally, although not significantly, lower in the salient ($M = 4.43$, SD = 1.78) than in the not-salient condition ($M = 4.74$, SD = 1.72), $F(1, 256) = 2.01, p = .16$.

We next collapsed across the two salience conditions and explored similarities and differences between individuals with and without ACPs (appendix table 1). The two groups were similar in most of the values and preferences measured in the survey (all $p > .10$).

However, as in study 2, there were some differences across the groups. Specifically, in line with study 2's finding that greater preference for being at peace was associated with greater intentions to create an ACP, individuals with ACPs rated the importance of being at peace higher than those who did not have ACPs ($M_{with_ACP} = 4.95$ vs. $M_{without_ACP} = 4.13$; $t(299) = -1.97, p = .05$). Also in line with study 2's finding that lower preference for life-sustaining treatments was associated with ACP-creation intentions, individuals with ACPs expressed lower preference for receiving invasive life-sustaining treatments, such as life support (not want to receive life-sustaining treatments: $M_{with_ACP} = 4.66$ vs. $M_{without_ACP} = 3.24$; $p < .001$), CPR ($M_{with_ACP} = 5.72$ vs. $M_{without_ACP} = 6.24$; $t(299) = 2.32, p = .02$) and machine dependence (avoid machine dependence: $M_{with_ACP} = 6.42$ vs. $M_{without_ACP} = 5.71$; $t(299) = -2.89, p = .004$) than those without ACPs.

Discussion

Making one's own values and preferences salient did not increase, and in some cases decreased, engagement with ACPs. It is possible that critical healthcare decisions raise negatively valenced thoughts that people prefer to avoid (Carr and Khodyakov 2007; Wilkinson et al. 2007; Morrison 2020). To further investigate the effect of aversive thoughts, we conducted two follow-up studies that manipulated separately value-related thoughts, which may be less aversive, and healthcare preference-related thoughts, which may be more aversive. However, we did not find any evidence that value- and preference-related thoughts affected engagement differently (see the appendix study 1 for details).

Study 4 also explored whether values and preferences differed between individuals with and without ACPs. Although the two groups were largely similar, those who have ACPs cared more about being at peace and avoiding invasive life-sustaining treatments than those who do not have ACPs, which was in line with study 2's findings that these preferences are associated with greater intentions to create ACPs.

GENERAL DISCUSSION

Advance care planning has the potential to increase personal, family, and societal welfare by ensuring that individuals receive the care they desire and by reducing medical costs for critical treatments (Zhang et al. 2009; Detering et al. 2010). Despite these benefits, few people worldwide have ACPs.

To understand what factors are associated with the decision to engage in advance care planning, we examined individual values and healthcare preferences. We found that ACP holders and nonholders largely have common values and preferences, that similarly vary with demographics; for example, both older ACP holders and nonholders had a greater preference for being able to care for themselves and avoiding invasive life-sustaining treatments than younger ones (studies 1 and 2). These two groups also differ consistently across studies: those who have (as well as those who intend to create) ACPs (vs. not) have a greater preference to avoid invasive life-sustaining treatments and to have a more peaceful end of life (studies 2 and 4).

We sought to build on these similarities and differences to create interventions that could affect ACP engagement; however, highlighting values and preferences for similar others (study 3) or for the self (study 4) did not consistently increase—and in some cases even decreased—engagement with ACPs. Future research could explore whether other ways of manipulating values and preferences could be more effective. Such manipulations might include information on how many similar others have created ACPs, as well as more engaging and vivid narratives from others. Accordingly, the use of digital technologies in the preparation of ACPs may increase engagement not only by facilitating the creation, update, and access of individuals' plans but also by making the process more similar to a personal journey than to a legal requirement (see table 2, which suggests future research ideas).

Table 2. Future Research Topics on Advance Care Planning

Relevant stakeholder	Potential interventions
Government agencies	Normalize the creation of ACPs by providing opportunities to do so when obtaining or renewing health insurance, starting a new job, registering to vote, or submitting tax filings.
Government agencies	Encourage ACP creation and updating at temporal landmarks or in occasion of life milestones.
Government agencies in collaboration with other industries	Normalize the creation and updating of ACPs by sending reminders in concomitance with other routine future-oriented activities, such as planning for savings and mortgage repayments.
Healthcare providers	Incentivize doctors to have conversations with their patients about the benefits of creating and updating ACPs, and to familiarize them with digital technologies, during annual check-ups and routine appointments.
Healthcare providers	Develop and publicize quality metrics for healthcare providers that track referrals to create and update ACPs.
Healthcare providers	Encourage healthcare providers to share information about similar others who have created ACPs with their patients.
Health insurance companies	Normalize the creation and updating of ACPs by having health insurance companies offer information and tools during open enrollment periods.
Health insurance companies	Reward health insurance providers for having customers create ACPs.
Health insurance companies and Government agencies	Legislate that health insurance companies provide information about and offer ACP creation tools for their customers.
Health insurance companies/Government agencies/Employers	Offer financial incentives (e.g., health insurance discounts) to individuals for creating ACPs.
Government agencies/Healthcare providers	Create interventions aimed at psychological traits and factors that currently limit engagement with ACPs, such as reactance and autonomy

In addition to devising more effective interventions targeting values and preferences, future research could adopt other approaches. One approach might involve targeting psychological traits associated with having or intending to create ACPs. In study 2, we explored this possibility and identified several traits that correlated with ACP-creation intentions (e.g., desire for control, mortality salience).[3] Although follow-up studies manipulating those factors did not influence ACP-creation intentions, other psychological factors could be investigated. For example, trait reactance could explain some of our unexpected reversals.

Another approach might examine structural interventions, which involve different stakeholders and aim to change procedures, rules, or institutions. A similar solution has been advocated to reduce prejudice, since, in that domain too, psychological interventions do not have large effects (Paluck et al. 2021). We tested one such structural intervention in a study that examined normalizing the advance care planning process. Events and behaviors that are perceived as normal or average generate fewer counterfactuals and more muted emotional responses than exceptions (Kahneman and Miller 1986). Given that the emotions elicited by advance care planning have been indicated as potential causes for its low uptake (Wilkinson et al. 2007; Morrison 2020), we tested whether normalizing the ACP-creation decision increases engagement by embedding it into another unrelated, routine administrative process.

We recruited 302 mTurk participants ($M_{age} = 37.8$; 45.4% male, 54.0% female, 0.7% nonbinary) who were assigned to either a control or a normalizing condition. Participants in the control condition read information about ACPs as in the previous studies; those in the normalizing condition imagined applying for a driver's license in a different country, undergoing a brief medical examination, and getting information about both organ donation and ACPs (the same as in the control condition; for full scenario, see appendix study 2). Next, participants answered the same ACP engagement questions used in study 4. Two hundred thirty-two participants (76.8%) reported not having an ACP. Those in the normalizing condition were marginally more likely to ask for information about ACPs (41.4%) than those in the control condition (31.0%), $\chi^2(1) = 2.69, p = .10$. The effect was significant when controlling for consideration, which unexpectedly varied across conditions in the opposite direction than predicted ($p = .004$). However, we did not find a significant effect on ACP creation intentions, $F(1, 230) = 0.41, p = .52$.

It is possible that participants could not relate to the scenario of being in a different country, and that it would be more effective to normalize advance care planning by embedding it in more familiar routine processes, such as initiating or renewing health insurance, starting a new job, filing for taxes, and registering to vote, or by sending reminders in concomitance with future-oriented activities such as planning for savings and mortgage repayments. This approach would have the additional benefit of incentivizing people to think about critical medical care when they are young and healthy instead of during a health crisis, when they may reject ACPs to diffuse their fears. Reminders could also target current ACP holders to ensure they regularly update their plans, given that our results suggest that preferences change with age. The timing of these reminders could be selected to coincide with specific life milestones, as salient temporal landmarks often represent opportunities for "fresh starts" with the potential to motivate aspirational behaviors (Dai, Milkman, and Riis 2014).

Other types of structural interventions might include the presentation and design of the options, financial incentives, and legislative actions. Structural interventions that involve the presentation and design of the options have been successful in influencing similar decisions. For example, the application of an opt-out, rather than an opt-in, rule for organ donor registration systems has been associated with greater donation consent (Johnson and Goldstein 2003; Li, Hawley, and Schnier 2013) and the inclusion of defaults have also increased participation in 401K retirement savings plans in the United States (Thaler and Benartzi 2004). The process of creating an ACP is more similar to that of saving for retirement than donating organs in that it involves making a series of decisions and not only agreeing to a pre-set action. However, care is needed with such interventions, as defaults can lead individuals to make choices that differ from their own preferences (Thaler and Benartzi 2004). For example, in one study conducted on real patients, only about 10% of respondents chose the life-extending option in an ACP when no options were pre-selected, but a significantly higher percentage selected this option when it was preset as the default. The result did not change when participants were informed about these defaults and knew that the defaults could be changed, probably because they perceived them as recommendations (Halpern et al. 2020). Given the strong effect of defaults even in the case of diverging preferences, future research should continue to explore whether

3. Details about these studies can be obtained from the authors.

providing default ACP options that reflect the most commonly observed treatment preferences would benefit or backfire. One consideration is that in our studies the preferences of individuals who have or intend to create an ACP (e.g., being at peace and avoid invasive life-sustaining treatments) imply that invasive life-sustaining treatments are the default options in the absence of an ACP. In fact, in the United States it is a common practice to use more intensive and life-extending treatment options toward the end of life (Schroeder 2011). Therefore, it could be rational for those individuals who prefer to prolong life not to have an ACP. On the contrary, ACPs are meant to clearly communicate individuals' wishes and ensure that healthcare agents respect these wishes, without making assumption and regardless of whether these wishes correspond to or diverge from common or default practices.

Future research could also examine whether structural interventions related to financial incentives would increase ACP uptake. These incentives may be directed to final consumers or to other parties, including healthcare providers, health insurance companies, and government agencies. Interventions targeting final consumers might include health insurance discounts, whereas those targeting other parties might include incentives to health insurance companies for engaging their customers in advance care planning and to healthcare providers for discussing ACPs during annual checkups and routine appointments. Healthcare providers could also be rewarded by developing and publicizing quality metrics that track referrals to create and update ACPs, which could positively impact their reputation.

Finally, future research could focus on legislative actions. For example, the US Congress passed the 1990 Patient Self-Determination Act, requiring all federally funded healthcare organizations to provide patients with information about their rights in relation to advance care planning (Scheunemann et al. 2015). Similar actions targeting other stakeholders might involve mandating health insurance companies to provide information about ACPs and offer ACP creation tools for their customers, perhaps during open-enrollment periods.

In sum, advance care planning represents a complex process, both from a practical and a psychological perspective, which defies single-factor solutions. This multi-factor approach requires the joint expertise of consumer psychologists, public policy makers, and healthcare providers, who should collaborate to promote a broader cultural change in the way in which individuals and societies understand, talk about, and prepare for critical healthcare decisions.

REFERENCES

Aspen Institute Health Strategy Group (2016), *Improving Care at The End of Life: A Report of the Aspen Institute Health Strategy Group*, https://assets.aspeninstitute.org/content/uploads/2017/02/AHSG-Report-Improving-Care-at-the-End-of-Life.pdf?_ga=2.103485696.1017576699.1607099470-207094241.1606995378.

Bond, William F., Minchul Kim, Chris M. Franciskovich, Jason E. Weinberg, Jessica D. Svendsen, Linda S. Fehr, Amy Funk, Robert Sawicki, and Carl V. Asche (2018), "Advance Care Planning in an Accountable Care Organization Is Associated with Increased Advanced Directive Documentation and Decreased Costs," *Journal of Palliative Medicine*, 21 (4), 489–502.

Carr, Deborah, and Dmitry Khodyakov (2007), "End-of-Life Health Care Planning among Young-Old Adults: An Assessment of Psychosocial Influences," *Journals of Gerontology: Series B*, 62 (2), S135–41.

Carr, Deborah, and Elizabeth A. Luth (2017), "Advance Care Planning: Contemporary Issues and Future Directions," *Innovation in Aging*, 1 (1), 1–10.

Carr, Deborah, and Sara M. Moorman (2009), "End-of-Life Treatment Preferences among Older Adults: An Assessment of Psychosocial Influences," *Sociological Forum*, 24 (4), 754–78.

Colaberdino, Vincent, Colleen Marshall, Paul DuBose, and Mitchell Daitz (2016), "Economic Impact of an Advanced Illness Consultation Program within a Medicare Advantage Plan Population," *Journal of Palliative Medicine*, 19 (6), 622–25.

Dai, Hengchen, Katherine L. Milkman, and Jason Riis (2014), "The Fresh Start Effect: Temporal Landmarks Motivate Aspirational Behavior," *Management Science*, 60 (10), 2563–82.

Davis, C. P. (2012), "Emergency Department Visits: We Are Not Prepared," *American Journal of Emergency Medicine*, 30 (8), 1364–70.

Detering, Karen M., Andrew D. Hancock, Michael C. Reade, and William Silvester (2010), "The Impact of Advance Care Planning on End of Life Care in Elderly Patients: Randomised Controlled Trial," *BMJ*, 340:c1345, https://doi.org/10.1136/bmj.c1345.

Ditto, Peter H., William D. Smucker, Joseph H. Danks, Jill A. Jacobson, Renate M. Houts, Angela Fagerlin, Kristen M. Coppola, and R. Mitchell Gready (2003), "Stability of Older Adults' Preferences for Life-Sustaining Medical Treatment," *Health Psychology*, 22 (6), 605–15.

Duncan, Ian, Tamim Ahmed, Henry Dove, and Terri L. Maxwell (2019), "Medicare Cost at End of Life," *American Journal of Hospice and Palliative Medicine*, 36 (8), 705–10.

Earle, Craig C., Mary Beth Landrum, Jeffrey M. Souza, Bridget A. Neville, Jane C. Weeks, and John Z. Ayanian (2008), "Aggressiveness of Cancer Care Near the End of Life: Is It a Quality-of-Care Issue?" *Journal of Clinical Oncology*, 26 (23), 3860–66.

Fine, Robert L., Zhiyong Yang, Christy Spivey, Bonnie Boardman, and Maureen Courtney (2016), "Early Experience with Digital Advance Care Planning and Directives, a Novel Consumer-Driven Program," *Baylor University Medical Center Proceedings*, 29 (3), 263–67.

Halpern, Scott D., Dylan S. Small, Andrea B. Troxel, Elizabeth Cooney, Brian Bayes, Marzana Chowdhury, Heather E. Tomko, Derek C. Angus, Robert M. Arnold, George Loewenstein, Kevin G. Volpp, Douglas B. White, and Cindy L. Bryce (2020), "Effect of Default Options in Advance Directives on Hospital-Free Days and Care Choices among Seriously Ill Patients: A Randomized Clinical Trial," *JAMA Network Open*, 3 (3), e201742.

Hawkins, Nikki Ayers, Peter H. Ditto, Joseph H. Danks, and William D. Smucker (2005), "Micromanaging Death: Process Preferences, Values, and

Goals in End-of-Life Medical Decision Making," *Gerontologist*, 45 (1), 107–17.

Johnson, Eric J., and Daniel Goldstein (2003), "Do Defaults Save Lives?" *Science*, 302 (5649), 1338–39.

Kahneman, Daniel, and Dale T. Miller (1986), "Norm Theory: Comparing Reality to Its Alternatives," *Psychological Review*, 93 (2), 136–53.

Li, Danyang, Zackary Hawley, and Kurt Schnier (2013), "Increasing Organ Donation via Changes in the Default Choice or Allocation Rule," *Journal of Health Economics*, 32 (6), 1117–29.

Matsuyama, Robin, Sashidhar Reddy, and Thomas J. Smith (2006), "Why Do Patients Choose Chemotherapy Near the End of Life? A Review of the Perspective of Those Facing Death from Cancer," *Journal of Clinical Oncology*, 24 (21), 3490–96.

Molloy, D. William, Gordon H. Guyatt, Rosalie Russo, Ron Goeree, Bernie J. O'Brien, Michel Bédard, Andy Willan, Jan Watson, Christine Patterson, Christine Harrison, Tim Standish, David Strang, Peteris J. Darzins, Stephanie Smith, and Sacha Dubois (2000), "Systematic Implementation of an Advance Directive Program in Nursing Homes: A Randomized Controlled Trial," *JAMA*, 283 (11), 1437–44.

Morrison, R. Sean (2020), "Advance Directives/Care Planning: Clear, Simple, and Wrong," *Journal of Palliative Medicine*, 23 (7), 878–79.

NIH (2020), "Advance Care Palling: Healthcare Directives," https://www.nia.nih.gov/health/advance-care-planning-healthcare-directives.

Oppenheimer, Daniel M., Tom Meyvis, and Nicolas Davidenko (2009), "Instructional Manipulation Checks: Detecting Satisficing to Increase Statistical Power," *Journal of Experimental Social Psychology*, 45 (4), 867–72.

Paluck, Elizabeth Levy, Roni Porat, Chelsey S. Clark, and Donald P. Green (2021), "Prejudice Reduction: Progress and Challenges," *Annual Review of Psychology*, 72 (1), 533–60.

Peterson, Jennifer L., Malynnda A. Johnson, Bonnie Halvorsen, Lisa Apmann, Pi-Ching Chang, Stephanie Kershek, Courtney Scherr, Matthew Ogi, and Deborah Pincon (2010), "What Is It So Stressful about Caring for a Dying Patient? A Qualitative Study of Nurses' Experiences," *International Journal of Palliative Nursing*, 16 (4), 181–87.

Pope, Thaddeus Mason (2020), "Video Advance Directives: Growth and Benefits of Audiovisual Recording," *SMU Laws Review*, 73, 1–29, https://ssrn.com/abstract=3539210.

Puchalski, Christina M., Zhensbao Zhong, Michelle M. Jacobs, Ellen Fox, Joanne Lynn, Joan Harrold, Anthony Galanos, Russell S. Phillips, Robert Califf, and Joan M. Teno (2000), "Patients Who Want Their Family and Physician to Make Resuscitation Decisions for Them: Observations from SUPPORT and HELP," *Journal of the American Geriatrics Society*, 48 (S1), S84–90.

Punj, Girish, and David W. Stewart (1983), "Cluster Analysis in Marketing Research: Review and Suggestions for Application," *Journal of Marketing Research*, 20 (2), 134–48.

Rinaldo, Francesca, Myra Altman, and Kendell Cannon (2020), "Slowing Medicare Spending by Optimizing Late-Life Needs," August 21, webinar, https://bit.ly/39Azw3q.

Scheunemann, Leslie P., Robert M. Arnold, and Douglas B. White (2012), "The Facilitated Values History: Helping Surrogates Make Authentic Decisions for Incapacitated Patients with Advanced Illness," *American Journal of Respiratory and Critical Care Medicine*, 186 (6), 480–86.

Scheunemann, Leslie P., Thomas V. Cunningham, Robert M. Arnold, Praewpannarai Buddadhumaruk, and Douglas B. White (2015), "How Clinicians Discuss Critically Ill Patients' Preferences and Values with Surrogates: An Empirical Analysis," *Critical Care Medicine*, 43 (4), 757–64.

Schroeder, S. A. (2011), "Personal Reflections on the High Cost of American Medical Care: Many Causes but Few Politically Sustainable Solutions," *Archives of Internal Medicine*, 171 (8), 722–27.

Shalowitz, David I., Elizabeth Garrett-Mayer, and David Wendler (2006), "The Accuracy of Surrogate Decision Makers: A Systematic Review," *Archives of Internal Medicine*, 166 (5), 493–97.

Snyder, Lois (2012), "American College of Physicians Ethics Manual," *Annals of Internal Medicine*, 156 (pt. 2), 73–104.

Sulmasy, Daniel P., and Lois Snyder (2010), "Substituted Interests and Best Judgments: An Integrated Model of Surrogate Decision Making," *JAMA*, 304 (17), 1946–47.

Thaler, Richard H., and Shlomo Benartzi (2004), "Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving," *Journal of Political Economy*, 112 (S1), S164–87.

Third Way (2015), "A Better End of Life," September 29, https://www.thirdway.org/report/a-better-end-of-life.

Weems, Kerry, and David W. Johnson (2020), *Advancing Advance Care Plans through Medicare: It's Time to Move*, https://www.4sighthealth.com/advancing-advance-care-plans-through-medicare-its-time-to-move/.

Wilkinson, Anne, Neil Wenger, and Lisa R. Shugarman (2007), "Literature Review on Advance Directives," special report, contract no. HHS-100-03-0023, Washington, DC: US Department of Health and Human Services.

Zhang, Baohui, Alexi A. Wright, Haiden A. Huskamp, Matthew E. Nilsson, Matthew L. Maciejewski, Craig C. Earle, Susan D. Block, Paul K. Maciejewski, and Holly G. Prigerson (2009), "Health Care Costs in the Last Week of Life: Associations with End-of-Life Conversations," *Archives of Internal Medicine*, 169 (5), 480–88.