Research Article

Does End-of-Life Planning Help Partners Become Better Surrogates?

Megumi Inoue, PhD, *1 and Sara M. Moorman, PhD 2

1 Boston College, Graduate School of Social Work, Chestnut Hill, Massachusetts. 2 Department of Sociology and Institute on Aging, Boston College, Chestnut Hill, Massachusetts.

*Address correspondence to Megumi Inoue, PhD, Boston College, Graduate School of Social Work, 140 Commonwealth Avenue, McGuinn Hall, Chestnut Hill, MA 02467. E-mail: inouem@bc.edu

Received October 21, 2013; Accepted March 12, 2014

Decision Editor: Rachel Pruchno, PhD

Abstract

Purpose of the Study: This study investigates the role of surrogates’ involvement in their partners’ end-of-life care planning, focusing on the relationship between the extent and type of end-of-life planning in which surrogates have been involved and the accuracy of their substituted judgments.

Design and Methods: The data come from an internet survey collected by Knowledge Networks and the National Center for Family and Marriage Research. The national sample is comprised of 1,075 opposite-sex American couples aged 18–64. A series of multilevel negative binomial regression analyses were conducted.

Results: Surrogates’ involvement in multiple types of planning helped them to make accurate substituted judgments, whereas surrogates’ involvement in informal discussions helped them to make accurate estimations primarily when they wanted limited care for themselves.

Implications: This study highlights the importance of engaging in both advance directives and informal discussion. The findings also suggest that surrogates who want extensive care for themselves may need extra attention when practitioners assist them in making a substituted judgment.

Key Words: Dyadic/couple data, End-of-life planning, Multilevel models, Substituted judgment

One of the fundamental ethical principles in medicine is respect for patient autonomy, a patient’s right to direct his or her medical treatment. End-of-life planning enables persons to direct their treatment during the dying process, but not everyone has completed such plans. Younger persons may think such planning is necessary only for older adults (Pollack, Morhaim, & Williams, 2010). However, serious illness or accidents can happen at any age. Older persons’ deaths often occur after chronic conditions that afford them time to plan for end-of-life care, whereas one of the leading causes of death among younger persons is unexpected accident (Hoyert & Xu, 2012). In addition, completing end-of-life planning involves a series of steps that take time, such as contemplation, discussions, and documentation (Sudore et al., 2008). Thus, having end-of-life care plans in place is important for younger and healthier persons as well. Without having such plans, they may miss the opportunity to direct their medical care.
When terminally ill patients are too physically or cognitively incapacitated to speak for themselves and have not made plans to direct their end-of-life medical care, they require surrogate decision makers to preserve their autonomy. Overall, 30% of decedents needed treatment decisions when they were no longer able to make such decisions on their own (Silveira, Kim, & Langa, 2010). The surrogate is usually a family member, typically the spouse if the dying person is married (Carr & Khodyakov, 2007). Surrogates are legally obligated to apply the standard of substituted judgment, which is to choose the treatment that they believe the dying person would choose, if competent (Sabatino, 2010). Therefore, spouses’ knowledge of their partners’ treatment preferences is particularly important in order to preserve the autonomy of dying persons.

However, many studies report spouses’ lack of knowledge of their partners’ treatment preferences, even when the spouse has been legally appointed as surrogate decision maker (e.g., Moorman & Carr, 2008; Shalowitiz, Garrett-Mayer, & Wendler, 2006). These findings suggest that patients’ autonomy as defined by the standard of substituted judgment may be frequently compromised. Prior research found that completion of surrogates’ own end-of-life planning was unrelated to their ability to accurately report their partner’s preferences (Moorman & Inoue, 2013). In this study, we aim to understand the contexts in which surrogates’ involvement in end-of-life care planning helps them to acquire knowledge of their partners’ treatment preferences. We examine the role of surrogates’ involvement in their partners’ end-of-life care planning, hypothesizing that surrogates’ treatment preferences for themselves may influence the degree to which surrogates’ involvement in their partners’ planning aids their substituted judgment. We examine these issues in a national sample of 1,075 opposite-sex American couples aged 18–64. The study findings will inform health care policy surrounding the preservation of patient autonomy at the end of life.

**End-of-Life Planning in the United States**

Advance care planning is an opportunity for individuals to express treatment preferences for their end-of-life care. It has three types: a living will, a durable power of attorney for health care (DPAHC), and informal discussion. A living will specifies in writing the types of medical care a person does or does not want to receive. A DPAHC is a designated individual permitted to make health care decisions for an incapacitated person should decisions arise that are not covered in the living will. A living will and DPAHC are both legal documents, and together they are called an advance directive. Research has documented that a small proportion of individuals complete advance directives without discussing their contents with the family members or health care providers who will carry out those contents (Carr & Khodyakov, 2007). Although such discussions are not legally binding, they are helpful for informing those persons (Mack, Weeks, Wright, Block, & Prigerson, 2010). Therefore, clinicians recommend a two-pronged approach to planning, encompassing both advance directives and informal discussions.

One of the problematic tasks surrounding end-of-life issues is to increase the completion rates of advance care planning among younger adults; prior research focusing on the U.S. population aged 18–64 reports that fewer than one third have completed such planning (Moorman & Inoue, 2013). Completing advance care planning only at the end-of-life is often considered “too late” to be helpful or meaningful, thus it is important to begin the process while still relatively young and healthy (Sudore & Fried, 2010). Since the process occurs in stages that require repetition, revision, and communication, advance care planning is ideally performed over time (Sudore et al., 2008). People need to learn about their treatment options, consider their preferences, and overcome barriers to planning. As people age, they face new health challenges, and early planning affords them time to evaluate their values and think about treatment preferences.

Advance care planning is especially necessary to inform surrogate decision makers. Surrogate decision making is a stressful process, and family conflicts related to end-of-life care decisions occur in more than half of dying persons’ families (Kramer, Boelk, & Auer, 2006). Previous research also suggests that family stress associated with end-of-life decision making can be reduced by the completion of advance directives (Tilden, Tolle, Garland, & Nelson, 1995). Despite the documented favorable outcomes of advance care planning, the results of studies investigating the role of such planning in surrogates’ decision making are not entirely supportive of its efficacy. Studies using hypothetical medical scenarios found that surrogates’ substituted judgments were not associated with their involvement in patients’ advance care planning (Ditto et al., 2001; Moorman & Carr, 2008). However, theory and intuition predict that planning should improve surrogates’ accuracy. In the present paper, we investigate whether prior studies have omitted or misspecified the role of a key factor, surrogates’ own preferences.

**Communication to Reduce Uncertainty, or Assumed Similarity of Preferences?**

The present study is guided by uncertainty reduction theory which posits that the purpose of communicating with others is to gain information that allows one to predict others’ future behaviors (Berger & Calabrese, 1975). According to the theory, there is a reciprocal causal association between the extent of information sharing and the level of predictability (Berger & Calabrese, 1975). Applying the theory to the present study, the three forms of advance care planning may be considered forms of communication about end-of-life. The theory predicts that those surrogates who have communicated about their partners’ treatment preferences are better able to identify the treatment their partner
would select than those who have not. Our first hypothesis is that the extent of communication about end-of-life treatment preferences, as measured by the number of types of advance care planning completed, may be associated with better surrogate performance.

Potentially, not only the extent of end-of-life planning types completed, but also the nature of the planning (i.e., advance directives, informal discussion, or both) may influence surrogates’ knowledge. Previous study found that having informal discussions about end-of-life treatment preferences reduced surrogates’ uncertainty, but DPAHC appointments and living wills did not (Moorman & Carr, 2008). Thus, our second hypothesis is that the types of communication about end-of-life treatment preferences may be differentially associated with surrogate performance.

Uncertainty reduction theory was developed to describe initial encounters between strangers, but the application of the theory has been expanded to developed relationships over the years (West & Turner, 2010). This expansion has made the theory particularly applicable to partner communication about end-of-life treatment because such communication occurs between persons in established relationships. As previous research has shown, simply being partnered, without benefit of advance care planning, does not automatically make people knowledgeable about their partners’ end-of-life care preferences (e.g., Moorman & Carr, 2008; Shalowitz et al., 2006). Thus, reducing uncertainty is an ongoing activity within developed relationships.

The theory of assumed similarity stands in contrast to uncertainty reduction theory. Previous studies report that surrogates have difficulty distinguishing their own preferences from their partners’ when making substituted judgments (Moorman & Carr, 2008; Shalowitz et al., 2006). The theory of assumed similarity suggests that surrogates tend to believe that they share preferences with their partner (Cronbach, 1955). When partners do share values and preferences, assuming similarity is a good strategy on the part of surrogates (Kenny & Acitelli, 2001). However, when partners do not share preferences, assumed similarity contributes to biased judgments. Assumed similarity suggests that surrogates’ involvement in advance care planning will not inform their substituted judgment, because it is not information they use in decision making.

Cognitive Dissonance

Under what conditions do surrogates assume similarity, and under what conditions do they reduce uncertainty? The theory of cognitive dissonance leads us to expect that surrogates’ decision-making strategy may vary based on their own preferences. When people encounter information that is discordant with their existing set of values, they experience psychological discomfort, called cognitive dissonance (Festinger, 1957). Assuming that couples like to presume that they share values and attitudes for self-affirmation, we expect that surrogates whose spouse’s treatment preferences contradict their own preferences also experience cognitive dissonance. Because cognitive dissonance is unpleasant, people tend to seek information that supports their values and avoid information that challenges them (Eagly & Chaiken, 2005). Therefore, surrogates’ openness toward learning their partners’ preferences through advance care planning may be greatest when a surrogate’s values are consistent with those of their partner. When surrogates find discrepancy between their own preferences and their partner’s preferences, they may, paradoxically, use assumed similarity to make a surrogate decision so as to avoid cognitive dissonance.

Research suggests that those who have completed advance directives tend to wish for limited end-of-life care: More than 90% of people who had living wills wanted limited or comfort care (Silveira et al., 2010). Based on the evidence that those who have advance directives are likely to wish for limited care, we hypothesize that surrogates who prefer limited care for themselves may experience less cognitive dissonance than surrogates who prefer extensive treatment for themselves. Because of people’s tendency to seek out information that supports their views (Eagly & Chaiken, 2005), surrogates whose preferences coincide with their partner’s preferences may use their partner’s advance care planning to reduce uncertainty and make accurate substituted judgments. Therefore, our third hypothesis is that partners’ completion of end-of-life planning best helps surrogates to arrive at accurate substituted judgments when surrogates wish for limited care for themselves and is less helpful for surrogates who desire more extensive treatment.

Additional Influences on Substituted Judgment

Our analyses account for potential confounds related to both completion of advance care plans and surrogates’ accuracy. White race, age, male sex, higher socioeconomic status (SES), marital status, and longer relationship duration are associated with executing advance directives (Carr & Khodyakov, 2007; Moorman & Inoue, 2013; Pollack et al., 2010). Previous studies have found that African American couples’ estimations are more accurate than those of white couples (Schmid, Allen, Haley, & Decoster, 2010). Although age, gender, and SES have not been empirically associated with surrogates’ accuracy, this study controls for them because they are conceptually plausible confounds. Because women are more likely than men to outlive their partners, women may be more aware of the possibility of becoming a decision maker for a partner (National Center for Health Statistics, 2012). Similarly, because older persons and persons with higher SES are more likely to complete advance care planning, age and SES may be influential determinants of awareness. In terms of couple relationships, a previous study found a stronger tendency to assume similarity among married persons than cohabiting persons (Moorman & Inoue, 2013). Although length
of relationship has not been reported as a factor that influences surrogates’ accuracy, persons in a longer relationship may be more aware of their partner’s preference as well.

Methods

Data

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

In 1999, Knowledge Networks used probability-based sampling methodology to establish the first online research panel (KnowledgePanel) 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 Internet access, Knowledge Networks provided the necessary equipment free of charge. The couples in this study were recruited by Knowledge Networks using three methods. The three groups were pooled in the analyses presented here, after preliminary analyses indicated no significant differences in results by recruitment method. First, online advertisement (i.e., a nonprobability sample) yielded 57% of cohabiting couples (n = 184 couples). Second, 33% of the cohabiting couples (n = 108) and all of the married couples (n = 752) were drawn from KnowledgePanel participants (representative of the U.S. population); thus, both partners were panel participants in these couples. This recruitment within the panel yielded a 41% response from cohabiting couples and a 50% response from married couples. Third, 10% of cohabiting couples (n = 31) were comprised of a KnowledgePanel participant and partner who was not on the panel. This strategy yielded a low 5% response rate. Thus the sample was not designed to be representative of heterosexual married and cohabiting couples. The study was approved by the Institutional Review Board at Bowling Green State University, and informed consent was obtained on the survey screen before participants start answering questions.

Dependent Measure: Accuracy of Surrogate Estimates

The accuracy of surrogates’ estimations of their partners’ end-of-life treatment preferences was assessed by two items that were drawn from Wisconsin Longitudinal Study. First, participants were told “Suppose you had a serious illness today with very low chances of survival. What if you had minimal physical pain, but had limited ability to speak, walk, or recognize others?” Based on this hypothetical scenario, they were asked to rate the level of treatment that they would like to receive using a scale ranging from 0 (stop all life-prolonging treatment) to 10 (continue all treatment). Then they were given another hypothetical scenario about their partners: “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 had minimal physical pain, but had limited ability to speak, walk, or recognize others?”

The outcome variable measuring accuracy of surrogates’ estimations was the discrepancy between participants’ predictions of their partners’ preference scores and their partners’ actual scores. Therefore, the outcome variable ranged from 0 to 10 with a score of 0 representing perfect accuracy. The use of an absolute difference score is recommended for within-couple analyses (Roest, Dubas, Gerris, & Engels, 2009).

Key Independent Measures: The Total Number and Type of End-of-Life Planning

The total number and types of end-of-life planning were assessed based on the following 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”; “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”; and “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?” If participants answered yes to a question, they were asked to name the person(s) with whom they planned.

To test the first hypothesis, we created a count variable that indicated the total number of plans completed with the partner. The minimum value of 0 indicated that the participant completed no plans with the partner, and the maximum value of 3 meant that the participant completed all three types of planning (i.e., living will, DPAHC, and discussion) with the partner. Planning completed with persons other than the partner did not count toward the total sum. Presumably, planning with someone other than the partner (e.g., appointing a daughter as DPAHC) has little influence on the partner’s knowledge. Because the total number of end-of-life plans was skewed (M = 0.9, SD = 1.0), we created dummy variables for three plans, two plans, one plan, and zero plans (reference group).

To test the second hypothesis, types of planning were divided into formal and informal. Two types of planning were considered formal planning: appointed a partner as DPAHC and/or gave a copy of the living will to a spouse/partner. Because these two forms were correlated (r = .75), and they together constitute an advance directive, they were combined rather than examined separately. The study
considered informal planning to be completed when the couple held a discussion about one's end-of-life preferences. Based on these formal and informal methods of planning, an independent variable of type of end-of-life planning was constructed. The variable had four mutually exclusive categories: both formal and informal planning with a partner, only formal planning with a partner, only informal planning with a partner, and no planning with a partner (reference group). The reference group contains both persons who completed no planning at all and persons who planned, but with a person other than the partner.

Surrogate Characteristics
Preference for Own Care
Respondents specified their preferred treatment level ranging from 0 (stop all life-prolonging treatment) to 10 (continue all treatment) based on the question “Suppose you had a serious illness today with very low chances of survival. What if you had minimal physical pain, but had limited ability to speak, walk, or recognize others?”

Sociodemographic Characteristics
The study also controlled for surrogates’ sociodemographic characteristics, including age, gender, race, and education. Age was a continuous variable ranging from 18 to 64 years. Gender was coded as 1 for female and 0 for male. Race had four categories: white (reference group), African American, Hispanic, and other. The “other” category included respondents who reported belonging to two or more racial categories. Education was a variable with three categories: high school or less (reference category), some college education, and bachelor’s degree or higher.

Couple Characteristics
Couple characteristics 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. This was the only measure available in the data that could be used to examine how long couples have been together regardless of marital status. The correlation between age and relationship duration was 0.74 (p < .001). 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
Central tendencies and distributions of all study variables were examined to summarize participant characteristics. Next, a series of multilevel negative binomial regression analyses was conducted to assess the relationship between extent and types of plans and surrogate accuracy. Because the study involved clustered data, where individuals were nested within couples, multilevel models were used such that intercepts varied across couples. This permitted unmeasured couple-level characteristics to account for some of the variation between couples in the amount of discrepancy in their surrogate reports. We conducted negative binomial regression analysis instead of ordinary least squares regression analysis because accuracy of surrogate estimation was a count variable displaying overdispersion (i.e., its variance is larger than its mean).

Model 1 tested our first hypothesis examining the effect of the number of plans that surrogates were involved in, including controls for surrogate characteristics (i.e., the surrogate’s preference for his or her own treatment, age, gender, race, and education) and couple characteristics (i.e., marital status, relationship duration, and household income). Model 2 examined the effect of types of planning instead of total number of plans. Model 3 added to Model 1 the multiplicative interaction between the number of plans and the surrogate’s preference for his or her own treatment to test the third hypothesis. Model 4 adds to Model 2 the multiplicative interactions of each type of planning and the surrogate’s preference for his or her own treatment. Models 3 and 4 tested our third hypothesis, whether and how surrogates’ own preferences influence the relationship between the completion of planning and accuracy.

To check the robustness of our results, we conducted several supplemental analyses that do not appear in the paper. First, we tested a model including interaction terms between age, length of relationship, and the total number and types of plans, because of correlations between age and number of plans (r = .27, p < .001) and between relationship duration and number of plans (r = .23, p < .001). However, the interaction terms were not statistically significant, indicating that plans operated similarly across the range of ages and relationship durations examined in this sample. Second, we tested a model including interaction terms between marital status, perceived relationship stability, and the total number and types of plans, to test whether the effects of planning behavior on accuracy differed according to marital status or perceived relationship stability. These interactions were not significant. Third, we examined models that controlled for perceived relationship quality and perceived relationship stability to see whether these influences mediated the effect of planning on accuracy. Neither factor played a significant role. Finally, we investigated whether the content of treatment preferences differed between those who had advance directives and those who did not. We found that persons who had completed advance care planning were more likely to wish for limited end-of-life care than persons who had not completed advance care planning (p < .001).

The majority of cases (92.5%) answered all measures included in the analysis. Relationship duration had the most missing observations of 78 (3.6%). Because of the
unpatterned nature of missing observations and the limited amount of missing data, listwise deletion was used. The variance inflation factor (VIF) values indicate that there is no problematic multicollinearity; the mean VIF for each model was 1.4.

**Results**

**Descriptive Statistics**

Table 1 summarizes the descriptive results. The average discrepancy between surrogates’ estimations of their partners’ preferences and their partners’ actual preferences was 2.6 \((SD = 2.7)\). The majority of participants (44.0%) were not involved in any type of planning. Many had only one type of plan (34.4%). Although it is not shown in the table, 93% of those who completed only one plan were involved in an informal discussion. Approximately 15% were involved in all three plans. In terms of types of planning, only 4% engaged in formal types of planning but did not have an informal discussion. About one in five participants were involved in both informal and formal planning (19.9%). The average level of the surrogates’ own treatment preference was 4.5 \((SD = 3.5)\) with the possible scores ranging from 0 (stop all life-prolonging treatment) to 10 (continue all treatment).

**Multilevel Negative Binomial Regression**

Table 2 summarizes regression results. Model 1 shows that compared with those who were not involved in any planning, the logged discrepancy between surrogate estimations of their partners’ preferences and their partners’ actual preferences was smaller for surrogates who engaged in their partner’s all of three end-of-life plans \((B = -.22, p < .01)\). This supported our first hypothesis.

<table>
<thead>
<tr>
<th>Table 1. Summary Statistics for All Study Variables (N = 2,150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Accuracy of surrogate estimation(^a)</td>
</tr>
<tr>
<td>Total number of end-of-life plans completed with a partner</td>
</tr>
<tr>
<td>Zero plans</td>
</tr>
<tr>
<td>One plan</td>
</tr>
<tr>
<td>Two plans</td>
</tr>
<tr>
<td>Three plans</td>
</tr>
<tr>
<td>Type of end-of-life planning completed with a partner</td>
</tr>
<tr>
<td>None (reference)</td>
</tr>
<tr>
<td>Only informal</td>
</tr>
<tr>
<td>Only formal</td>
</tr>
<tr>
<td>Both</td>
</tr>
<tr>
<td>Partner characteristics</td>
</tr>
<tr>
<td>Treatment preference for self(^b)</td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male (reference)</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>White (reference)</td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Other ethnicity</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>High school or less (reference)</td>
</tr>
<tr>
<td>Some college education</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
</tr>
<tr>
<td>Couple characteristics</td>
</tr>
<tr>
<td>Marital status</td>
</tr>
<tr>
<td>Married (reference)</td>
</tr>
<tr>
<td>Cohabiting</td>
</tr>
<tr>
<td>Relationship duration (years)</td>
</tr>
<tr>
<td>Household income(^c)</td>
</tr>
</tbody>
</table>

Notes: \(^a\)Accuracy of surrogate estimation: 0 = perfectly accurate, 10 = maximum difference.

\(^b\)Treatment preference for self: 0 = stop life-prolonging treatment, 10 = continue all treatment.

\(^c\)Household income: 1 = <$5K, 19 = $175K or more.
Model 2 included types of planning, rather than number of plans, as the key independent variables. Compared with those without any involvement in their partners’ planning, surrogates who had been involved in both formal and informal types of planning more accurately estimated their partners’ preferences ($B = -0.17, p < .05$). Our second hypothesis was supported by these findings.

Model 3 tested the interaction term between the total number of plans and surrogates’ own preferences. The term between the involvement in one plan and surrogates’ own preferences was significant ($B = 0.04, p < .01$); however, as previously described, 93% of those who were involved in one plan were involved in an informal discussion, which basically conveys the same information as in Model 4. Thus, the results are not shown. Model 4 examined the interaction terms between the types of planning and surrogates’ own preference (illustrated in Figure 1). Surrogates’ involvement in any type of planning helped them to more accurately estimate their partner’s preference as long as they wanted limited care for themselves. For those surrogates who had been involved only in informal planning, as they preferred more extensive treatment for themselves, the logged discrepancy between their estimations and their partner’s actual preferences increased ($B = 0.04, p < .01$).

**Discussion**

The present study investigated the effects of surrogates’ involvement in their partner’s advance care planning on their ability to make accurate substituted judgments, using
data from 2,150 participants aged 18–64 who belonged to one of 1,075 married or cohabiting couples. Although previous research reported ineffectiveness of surrogates’ own end-of-life planning in making accurate substituted judgments for their partners (Moorman & Inoue, 2013), this study found that surrogates’ involvement in their partner’s planning helps them increase accuracy in some contexts. The findings suggest that surrogates’ involvement in their partner’s planning helped them to make accurate substituted judgments, whereas surrogates’ involvement in their partner’s informal planning helped them to make accurate estimations primarily when they wanted limited care for themselves.

Uncertainty Reduction and Assumed Similarity
Advance care planning does help surrogates when they have been involved in multiple types of planning as well as when they prefer limited care for themselves. For surrogates who engaged in both their partner’s formal and informal planning, uncertainty reduction theory was supported: surrogates who had more communication had better knowledge of their partner’s end-of-life care preferences. However, if surrogates had only a discussion with their partner, then the involvement only helped those surrogates who wish for limited care for themselves. That is, the findings imply that surrogates use assumed similarity when they want extensive care for themselves. Therefore, this study confirms prior research documenting a strong role of assumed similarity in surrogate decision making (Moorman & Carr, 2008; Shalowitz et al., 2006), but not for all surrogates.

We assume that surrogates gain better information by being involved in their partner’s formal and informal plans than in only one type of planning. As uncertainty reduction theory suggests, information sharing is associated with the level of predictability; the more varied the opportunities to gain knowledge of partners’ end-of-life treatment preferences, the better substituted judgment surrogates demonstrate (Berger & Calabrese, 1975). In contrast, when surrogates are involved in only informal planning, they obtain less information. In that case, surrogates’ accuracy is influenced by whether they experience cognitive dissonance, psychological discomfort arisen when facing conflicting values. Our supplemental analyses confirmed the findings from prior research that persons who completed advance care planning were more likely to wish for limited end-of-life care than persons who had not completed plans (Silveira et al., 2010). Therefore, surrogates who wish for extensive care for themselves may experience cognitive dissonance when they learn that their partner—who has planned—prefers limited care. They may then use assumed similarity to avoid or deny the dissonance (Eagly & Chaiken, 2005), resulting in an inaccurate report of their partner’s preference. In contrast, surrogates who wish for limited care for themselves are less likely to encounter conflicts when they learn that their partner also prefers limited care. As a result, they attend to the information gained in planning, and they make more accurate substituted judgments. Another potential explanation for the weaker linkage between discussions only and accuracy might be due to the lack of involvement of an outside party (e.g., doctors and lawyers), which is common when making formal planning and may help surrogates gain knowledge.

Improving surrogates’ accuracy is an important task across the adult life span. Notably, age and relationship duration were not significantly associated with surrogates’ accuracy, although as people age and spend more time together, they may be more exposed to opportunities to
plan for the end of life together. Given that the oldest participants were 64, we were unable to fully test the effects of age with the complete range of the life course. This might explain the nonsignificant effect of age in this study. Further, active involvement in end-of-life planning may be essential to understanding one’s partner’s end-of-life treatment preferences. Simply spending a long period of time together may not be helpful to gain this type of knowledge (Acitelli, Kenny, & Weiner, 2001).

Limitations
Several limitations of the study should be noted. First, participants were selected from a nationally representative panel of individuals, not a nationally representative panel of married and cohabiting couples. Thus the sample omits same-sex couples and underrepresents persons who marry at low rates, such as African Americans. Most states appoint one’s spouse as surrogate by default if one has not appointed a DPAHC (Sabatino, 2010) but do not allow same-sex couples to marry. However, considering that the proportion of same-sex couple household has reached 1% of all couple households (US Census Bureau, 2011) and that some states have legalized same-sex marriage, this population is important to include in future research regarding end-of-life surrogate decision making. In addition, African American participants accounted for only 5% in this study, which is smaller than the 14% in the general population (US Census Bureau, 2012). Because the study sample is 70% married couples, fewer African Americans appear than would appear in a general population because marriage is less common among them compared with whites. Future research should include more racial and ethnic minority participants and investigate variations among groups.

Second, the data did not have some potentially important variables. There was no information regarding how often informal discussions took place, how long they lasted, or what topics were discussed. With more detailed information, the study might have found variability in the effects of informal discussion on surrogate accuracy; thus, more comprehensive information about end-of-life discussion needs to be included in future research. Additionally, information on participants’ prior history of illnesses or hospitalizations was unavailable. Participants’ health history might have influenced both plans and accuracy. Lastly, there is a possibility that accuracy was not a result of planning, but rather that those who knew their partner’s preference already were most likely to engage in planning with a partner.

Implications
Our findings suggest that the completion of both advance directives and informal discussion helps surrogates make accurate substituted judgments. Younger and healthier people have fewer opportunities than older people to become informed about advance directives. Based on the fact that death among younger and healthier persons is often unexpected, providing opportunities for them to learn about end-of-life planning is particularly important. Interventions that promote completion of advance care planning among working-aged adults, such as community outreach programs, are needed.

In addition, when practitioners assist surrogates in making a substituted judgment, surrogates who want extensive care for themselves may need extra attention to ensure that they do not simply use assumed similarity to avoid cognitive dissonance. Making decisions as a surrogate is emotionally taxing, and many surrogates report burden and family conflict, especially when dying persons’ preferences are unclear (Braun, Beyth, Ford, & McCullough, 2008; Kramer et al., 2006). Practitioners’ help in reviewing advance directives or informal conversations that surrogates completed with their partner might be helpful to ease cognitive dissonance and to avoid surrogates’ use of assumed similarity. In addition, because the completion of multiple types of end-of-life planning helps surrogates to make accurate substituted judgments, encouraging people to engage in both advance directives and informal discussion is recommended.

Funding
This work was supported by the National Center for Family & Marriage Research at Bowling Green State University and the Boston College Institute on Aging (grant ARIG 050441-100-10000-18505-201-00000-64001 to Sara M. Moorman). The National Center for Family & Marriage Research is funded by a cooperative agreement (5 U01 AE000001-05) between the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services and Bowling Green State University.

Acknowledgments
The opinions and conclusions expressed herein are solely those of the authors and should not be construed as representing the opinions or policy of any agency of the federal government.

References


