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Patient–Physician End-of-Life Discussions in the Routine Care of Medicare Beneficiaries

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Abstract

Objective: Medicare reimbursement for physicians who discussed endof-life care and planning with a patient during an office visit was cut from the 2010 Affordable Care Act. We assessed the characteristics of patients who reported having had such discussions, and whether these discussions are associated with trust in one's physicians and with rates of family advance care planning (FACP).

Method: The sample consisted of 5,199 Medicare beneficiaries who reported having an ongoing relationship with a primary care physician. We estimated ordinal and multinomial logistic regressions that controlled for health care utilization, current health, and recent family deaths.

Results: Less than 1% ($n = 310$) reported an endof-life conversation with a physician during the course of routine care. However, conversations were associated with greater trust in one's physician and higher rates of completion of FACP.

Discussion: Findings support renewed efforts to reimburse physicians for discussing end of life with their Medicare patients.

Keywords

end-of-life care preparation; advance directives; discussion

In 2009, as the U.S. Congress and the American public alike debated the provisions of what would become the Affordable Care Act, one issue drew particular media scrutiny. Three Republican and one Democratic representatives co-sponsored a bill that would have extended Medicare reimbursement once every 5 years to physicians who discussed end-of-life care and planning with a patient during an office visit (Blumenauer, 2009). Conservative pundits quickly linked this proposal to abortion, euthanasia, and programs in Nazi Germany that executed persons with disabilities (Rutenberg & Calmes, 2009). Republican vice-presidential candidate Sarah Palin popularized the phrase *death panels*, suggesting that such doctor–patient end-of-life discussions would result in the widespread denial of treatment to older persons in the service of cost savings. Ultimately, Congress removed the end-of-life provision from the Affordable Care Act.

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Subsequent research has examined the effects of doctor–patient end-of-life discussions. Several of the claims the opposition made have some truth to them. Discussions reduce the cost of care in the final week of life (Zhang et al., 2009), and they are associated with less aggressive treatment (Mack, Cronin, Keating, et al., 2012). However, other evidence belies the conclusion that cost savings and reductions in aggressive care are undesirable outcomes: Discussions increase the likelihood that a patient receives treatment that is consistent with his or her wishes (Mack, Weeks, Wright, Block, & Prigerson, 2010), improve quality of life in the patient's last week (Zhang et al., 2009), and increase the likely-hood that a patient receives hospice care (Mack, Cronin, Keating, et al., 2012).

The research to date has two limitations in regard to evaluation of a policy like the one proposed in 2009. First, research has sampled persons who had late-stage terminal illnesses, whereas the proposed reimbursement was aimed at incorporating doctor–patient conversations into the routine course of care for older persons (Blumenauer, 2009). Second, because the persons studied were dying, the outcomes examined have been limited to concerns immediate to the last days of life, such as symptom management. The present study extends and expands upon prior work by examining the correlates of doctor– patient end-of-life discussions in a community sample of over 5,000 White, Midwestern Medicare recipients. We examine whether doctor–patient endof-life discussions are associated with patients' trust in their physicians, and whether these discussions are associated with formal and informal end-of-life planning with family members.

Discussions Occurring in Routine Care

The 2009 proposal to incentivize end-of-life discussions that occur during routine physical exams was a major step forward in end-of-life policy. Patients desire such conversations and want more frank discussions than their doctors expect them to want (Pfeifer et al., 1994). Beginning the process during the course of routine care rather than waiting until a person is terminally ill is important because doctors and patients require time to identify enhancements and obstacles to preparations for end of life (Schickedanz et al., 2009), and because patients' preferences develop over time (Fried et al., 2007). Furthermore, the Medicare reimbursement could occur once every 5 years. Doctor–patient discussions are ideally repeated over time, and in stages that require repetition, revision, and communication (Sudore et al., 2008).

In practice, doctor–patient end-of-life discussions often occur very late in the course of a patient's illness. In a national survey, 50% to 80 % of physicians reported that they prefer to delay discussions until symptoms become prominent or until all curative treatments have been exhausted (Keating et al., 2010). Thus, several long-term studies of cancer patients have indicated that 50% of patients die only a month after their first end-of-life conversation with a physician (Lopez-Acevedo et al., 2013; Mack, Cronin, Taback, et al., 2012). These studies found that patients whose discussions occurred earlier in the course of terminal illness experienced better quality of life in their final months. Presumably, discussions that start even before terminal illness are still more helpful.

Little is known about doctor–patient end-of-life discussions outside of an intensive care unit or outpatient oncology facility. One research group asked primary care physicians to discuss end of life with randomly selected patients (Tulsky, Fischer, Rose, & Arnold, 1998). The study found that end-of-life discussions averaged less than 6 min long and that physicians talked for an average of 4 of the 6 min. Experts (i.e., doctors who had published on bioethics or doctor–patient communication) held longer conversations and allowed patients to do more of the talking (Roter, Larson, Fischer, Arnold, & Tulsky, 2000).

Outcomes of Conversations During Routine Care

Studies of end-of-life discussions with terminally ill patients have focused on the types of treatment received and quality of life in the patient’s last days (Mack, Cronin, Keating, et al., 2012; Zhang et al., 2009). These outcomes are pertinent prospectively when examining the efficacy of discussions in the course of routine care, but we argue that such discussions may have more immediate benefits as well. We investigated physician trust and family advance care planning (FACP).

Trust in Physician

In terminal illness contexts, several factors increase the satisfaction of patients and family with doctor–patient end-of-life conversations. These include doctors’ listening behavior (McDonagh et al., 2004), as well as their statements about remaining with the patient, ensuring his or her comfort, and honoring the patient’s and family’s decisions (Stapleton, Engelberg, Wenrich, Goss, & Curtis, 2006). Notably, these are also characteristics that promote trust in physicians. According to Mechanic and Schlesinger (1996), trust in physicians

> refers to the expectations of the public that those who serve them will perform their responsibilities in a technically proficient way (competence), that they will assume responsibility and not inappropriately defer to others (control), and that they will make patients’ welfare their highest priority (agency). (p. 1693)

Other definitions include additional components, such as fidelity (“caring and advocating for the patient’s interests or welfare and avoiding conflicts of interest”), honesty, and confidentiality (Hall et al., 2002, p. 298). Trust is central to the patient–physician relationship and affects not only patients’ confidence in their physicians but also their willingness to broach difficult topics such as end of life. Therefore, we ask whether doctor–patient end-oflife discussions in routine care are related to greater trust in one’s physician.

FACP

Patients who enjoy a trusting relationship with a physician experience a plethora of benefits, such as better subjective health and quality of life, earlier detection of disease and overall greater symptom improvement, and better health behaviors and treatment compliance (Lee & Lin, 2009). FACP is one such health behavior that doctors likely promote in their end-of-life conversations with patients. Fried, Bullock, Iannone, and O’Leary (2009) note that

> completion of documents, consideration of broader goals of care, and communication with loved ones and physicians … can be conceptualized as a set of

> health behaviors, with older persons having variable readiness, barriers and benefits and perceptions of susceptibility for participating in each component. (p. 1552)

FACP encompasses strategies that allow individuals to convey their endof-life health care preferences to family while still cognitively intact. FACP typically involves completing a legally binding advance directive (AD), comprised of a living will detailing the specific treatments a person would or would not want, and a durable power of attorney for health care (DPAHC) designation appointing someone to make medical decisions on behalf of an incapacitated patient. Physicians also encourage patients to discuss their values and preferences with family. Although such discussions are informal (i.e., not legally binding), they may help patients clarify and communicate their specific treatment preferences and general values to the persons who may represent them in the formal decision-making process (Wright et al., 2008). As such, researchers and practitioners concur that a dual approach to FACP that encompasses both formal and informal components is more effective than AD completion alone (Carr & Khodyakov, 2007) and that involving practitioners in patients' FACP may improve the overall process of end-oflife treatment planning (Allen & Shuster, 2002). Thus, we hypothesize that people who report having had doctor–patient end-of-life conversations will also have higher rates of FACP, especially the most effective dual formal– informal approach.

Potentially Confounding Factors and Controls

Because we aimed to explore the relationship between doctor–patient end-of-life conversations, physician trust, and FACP, our analyses account for potentially confounding factors. These include health care utilization, current health, and recent experience with the death of a parent or spouse. First, the Patient Self-Determination Act of 1990 requires health care facilities to inquire whether patients would like to complete an AD upon admission, and so more frequent health care utilization may increase rates of both doctor– patient end-of-life conversations and FACP. Second, poorer current health is associated with higher rates of FACP and doctor–patient conversations (Carr & Khodyakov, 2007; Lopez-Acevedo et al., 2013; Mack, Cronin, Taback, et al., 2012), while better health is associated with greater trust in one's physician (Trachtenberg, Dugan, & Hall, 2005). Third, the recent loss of a parent or spouse can encourage FACP, especially if the parent or spouse died in pain (Carr, 2012). Seeing a loved one suffer might likewise prompt doctor–patient conversations about end of life.

We also seek to describe the characteristics of persons who report having had end-of-life discussions with their doctors because so little is known about these conversations in the course of routine care. Therefore, we include several measures of sociodemographic characteristics: socioeconomic status, marital status, gender, and age.

Method

Sample

The Wisconsin Longitudinal Study (WLS) started in 1957 with a random sample of 10,317 Wisconsin students who were graduating from high school in that year. The six waves of graduate data collection for the WLS were conducted in 1957, 1964, 1975, 1992, 2004, and 2011. For graduates who had siblings, data were also collected from one randomly selected sibling, first in 1977 ($N = 8,778$), then again from the same sibling in 1994, 2005, and 2011 (Herd, Carr, & Roan, 2014). The present study uses data from graduates and siblings who participated in the 2011 wave. In 2011, 5,204 graduates and 2,854 siblings completed in-person and mail surveys; 2,296 of the original graduates and 1,937 of the original siblings were deceased, leaving a response rate of 64.9% of living graduates and 41.7% of living siblings.

Respondents who indicated that they had a doctor's office or medical facility they usually went to when they were sick or needed advice about their health were asked to identify the type of provider they saw. Because we were primarily interested in end-of-life conversations between patients and their primary care physicians, we limited the sample to physicians who are considered to be general practitioners—those specializing in internal medicine, family medicine, or primary care. Second, because the bill that proposed reimbursement for physicians who discussed end-of-life planning with their patients was limited to Medicare recipients, we also limited our sample to current beneficiaries of Medicare Part A. Thus the final sample size was 5,199 persons (3,614 graduates and 1,585 siblings).

Dependent Measures: Trust in Physician and FACP Types

Trust in physician.—Participants were asked, "To what extent do you agree that you have complete trust in your doctor?" and reported their response on a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To adjust for skew, trust in physician was collapsed into three categories, 1 (*strongly disagree, disagree, and neutral*), 2 (*agree*), and 3 (*strongly agree*), and treated as an ordinal measure.

FACP types.—Participants were asked three 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 an advance directive, which is 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 your plans and preferences with anyone about the types of medical treatment you want if you become seriously ill in the future?"

Respondents who had a DPAHC and/or living will, but no discussion, were categorized as having *formal plans only*. Respondents who had a discussion, but no DPAHC or living will, were categorized as having *informal plans only*. Respondents could also have *both formal and informal plans*, or *no plans*.

Primary Independent Measure: Doctor–Patient End-of-Life Conversation

Participants who reported having discussions were asked, "Who is the [first/second/third] person with whom you discussed your plans and preferences about the types of medical treatment you want or don't want if you become seriously ill in the future?" Participants who indicated that they discussed these preferences with their physicians (as either the first, second, or third person they talked to) were coded as *had a doctor–patient end-of-life conversation*.

Importantly, this measure is mutually exclusive of the measure of FACP. For example, participants who reported having a doctor–patient end-of-life conversation and no other planning were categorized as *no plans* for the measure of FACP. Likewise, participants who reported having a doctor–patient end-of-life conversation, no other conversations, and a living will were categorized as *formal plans only* for the measure of FACP.

Independent Measures: Health Care Utilization

Seen by doctor in past year.—Participants were asked whether they had seen their doctor at least once in the past year. If they answered *yes*, they were coded 1; if they answered *no*, they were coded 0.

Seen in emergency room in past year.—Participants were asked if they visited an emergency room in the past year. If they answered *yes*, they were coded 1; if they answered *no*, they were coded 0.

Years seeing same doctor.—Participants were asked, “How long have you been seeing your usual provider for health care?” which measured in years ranging from 0 to 60. To adjust for positive skew, the square root of this variable was used in regression analyses.

Independent Measures: Current Health

Self-reported health.—Respondents were asked to rate their health on a scale from 1 (*poor*) to 5 (*excellent*). To address skew, a dichotomous variable was used in the analyses (0 = *fair or poor health*, 1 = *good, very good, or excellent health*).

Depressive symptoms.—To measure depressive symptoms, a summary score of participants’ psychological distress was created using the 20-item modified Center for Epidemiological Studies–Depression Scale (CES-D; Radloff, 1977). Cronbach’s alpha was .99. The scoring method used in the WLS is different from that which is used for the original CES-D. In the WLS, this variable “represents the sum of days in the past week that the participant felt particular ways” (WLS, 2014). This variable can therefore range from a minimum of 0 days to a maximum of 140 days. To adjust for positive skew, the square root of this variable was used in regression analysis.

Specific diagnoses.—Participants were asked, “Has a doctor ever told you you have [had a stroke/heart disease/cancer]?” For each of the three dichotomous variables created, participants who answered *yes* were coded 1; participants who answered *no* were coded 0.

Independent Measures: Recent Experience With Death

Spouse death.—If participants reported the loss of a spouse since the 2004 collection wave, they were asked about the details of that death. Participants were asked “During the last week of your spouse’s life, how much pain did he/she experience?” Response categories included “*no parent death*,” “*don’t know*,” “*no pain*,” “*slight pain*,” “*moderate pain*,” “*severe* *pain*," and "*no pain, death was sudden*." Categories were collapsed into three dichotomous indicators: *no spouse death* (reference), *no/slight pain* (which included those whose spouses' deaths were sudden), and *moderate/severe pain*. Those who reported "don't know" (*n* = 32) were coded as missing.

Parent death.—If the participant did not experience the loss of a spouse since the 2004 wave, they were asked about the death of a parent. Participants who lost a parent were asked, "During the last week of your parent's life, how much pain did he/she experience?" The same response categories were used for parent death as for spouse death. Responses were dichotomized in the same way as spouse death: *no parent death or reported on spouse death* (reference), *no/slight pain*, and *moderate/severe pain*. Those who reported "don't know" (*n* = 76) were coded as missing.

Independent Measures: Sociodemographic Characteristics

Total assets.—This variable asked respondents to report their total net worth and their spouse's net worth combined (if applicable). Ninety respondents reported negative values (which indicated that they had debt), 163 people reported that they had no assets, and 21 respondents indicated that they had over US$9,000,000 in assets. The measure was thus top-coded at US$10,000,000 and bottom-coded at US$10,000. The log base ten transformation of total assets was used in regression analysis.

Education.—Participants were asked to report their highest degree since high school. This information was represented as three dichotomous variables: *high school only* (reference), *some college or associate's degree*, and *bachelor's degree or more*.

Marital status.—Participants reported their marital status. Those who were *married* were coded 1; those who were *divorced or separated, widowed, or never married* were coded 0.

Gender.—Participants' gender was reported as either *male* or *female*. Female served as the reference group.

Age.—Participants reported their age in years at the time of their 2011 interview, which ranged from 53 to 91 years.

Analytic Strategy

Missing data.—Missing data diagnostics showed that 4,552 (87.56%) of 5,199 cases were complete. Whether the participant had visited an emergency room in the past year was the variable with the most missing values, at 173 (3.33%). Because the missing data were unpatterned, we performed multiple imputations by chained equations using Stata 12 (Royston, 2005). We generated five imputations, and present coefficients and standard errors that are complex averages across the five complete datasets (Rubin, 1987).

Statistical analyses.—Our goal was to see whether doctor–patient end-of-life conversations were related to physician trust and FACP completion. First, we calculated descriptive and appropriate comparison statistics across groups according to whether participants talked to their physicians. Results can be found in Table 1. Next, we used ordinal logistic regression to determine relationships between all independent measures and trust in one's physician, results of which are presented in Table 2. Last, we used multinomial logistic regression to determine relationships between all independent measures and FACP, results of which are presented in Table 3. Because the sample consisted of graduates and their siblings, we addressed this in regression analyses by clustering within families.

Results

Descriptive Statistics

There were 310 (0.06%) participants who talked to their physicians about end of life. Those who discussed end of life with their physicians reported significantly greater trust in those physicians than participants who had not held a doctor–patient discussion ($t = -3.38$, $p < .001$). Participants who had held discussions with a physician were more likely than those who had not to have completed both formal and informal plans ($\chi^2 = 77.82$, $p < .001$). Please refer to Table 1 for more detailed information on how those who had discussions and those who did not varied on other measures.

Ordinal Logistic Regression: Trust in Physician

A summary of ordinal logistic regression results is presented in Table 2. Having talked to one's physician about ACP was associated with greater physician trust (odds ratio [OR] = 1.45, $p < .01$). Other correlates of greater trust included seeing one's physician in the past year (OR = 1.49, $p < .01$), having been with the same physician for a longer period of time (OR = 1.31, $p < .001$), and having been diagnosed with cancer (OR = 1.20, $p < .01$). Significant correlates of lesser trust in one's physician included more depressive symptoms (OR = 0.80, $p < .001$) and greater assets (OR = 0.90, $p < .001$).

Multinomial Logistic Regression: FACP

Table 3 presents results for the multinomial logistic regression model. We found that talking to one's physician was associated with greater odds that participants had formal plans only (OR = 7.55, $p < .01$), informal plans only (OR = 5.33, $p < .01$), and both types of plans (OR = 17.14, $p < .001$) as compared with no FACP. Other significant correlates of having completed some form of FACP included having seen one's physician in the past year, having been diagnosed with heart disease or cancer, a recent experience of the death of a spouse (regardless of level of pain), greater total assets, having a college degree or more education, and being older, married, and female.

Discussion

Our goal was to explore correlates of doctor–patient end-of-life discussions that occurred during primary care physicians' routine care of Medicare beneficiaries. These conversations were quite rare, with less than 1% of our large sample reporting them. However, participants who reported doctor–patient end-of-life discussions reported significantly greater trust in their physician than participants who did not have such discussions. In addition, participants who had end-of-life discussions with their physician were significantly more likely to complete advanced care planning with their family members than were those who did not. We go on to address this study's implications, limitations, and contributions.

Trust in Physician and End-of-Life Discussions

Like prior studies, we demonstrated that continuity of care—duration of time seeing the same physician and seeing that physician within the past year—was associated with greater trust in one's physician (Mainous, Baker, Love, Gray, & Gill, 2001). We extended this prior work by finding that doctor–patient conversations about end of life were associated with greater trust in one's physician. Because our data were cross-sectional, we cannot determine causality: Trust may increase following doctor–patient conversations, or trust may prompt those conversations in the first place. Regardless, trust in one's physician is quite beneficial to one's health (Lee & Lin, 2010). Trusting patients who had end-of-life discussions with their doctors may be inclined to have repeated discussions over time, which according to clinicians, is an ideal way to address any changes over time in end-of-life preferences and to increase physicians' understanding of such preferences (e.g., Sudore et al., 2008). Thus, these results support policy that would extend Medicare reimbursement to physicians who periodically discussed end-of-life care and planning during routine office visits. Other non-physician primary health care providers who have long-standing relationships with their patients, such as nurse practitioners and physician assistants, may also be in a position to facilitate end-of-life planning during routine care. Although this study was limited to patient–physician relationships, we anticipate that similar associations hold, and may even be stronger, for other types of primary care providers such as nurses, given the fact that Americans tend to trust nurses more than any other health care professional (Robert Wood Johnson Foundation, 2014).

Doctor–Patient End-of-Life Discussions and FACP

Regardless of participants' ability to afford attorney fees for formal planning, their own health status, and their experience with the death of a spouse or parent, talking to their physicians about end of life had a role in their completion of FACP. Having such discussions was associated with higher rates of all types of planning—formal only, informal only, and both formal and informal—as opposed to no planning at all. Physicians often encourage FACP in end-of-life discussions with their terminally ill patients (Fried et al., 2009), and our results suggest that they do so in routine care as well.

Unfortunately, due to office visit time limitations and restrictions on Medicare reimbursement, many patients have no opportunity to have end-of-life discussions with their doctors. Introducing Medicare reimbursement for doctors to talk to their patients about end of life would be a first step in ensuring that those who want to have such conversations will be able to, and that may help initiate planning within families. What makes advance care planning unique and important is the fact that it occurs *before* a patient experiences a medical crisis, giving family members time to make appropriate decisions on behalf of their loved one when a medical crisis does occur (Schickedanz et al., 2009).

Limitations

Although these findings have important implications with regard to policies supporting end-of-life discussions between physicians and their patients, there are a number of limitations to our study. First, the sample is not representative of the U.S. population; in particular, all participants were White. Minority patients, especially African Americans and Latinos, frequently have low levels of trust in their physicians (Armstrong, Ravenell, McMurphy, & Putt, 2007) and are unable or unwilling to have end-of-life discussions with them or to complete FACP (Carr, 2011). Especially among African American patients, inequalities in historical and current medical treatment have been shown to contribute to lower rates of trust, not only in one's physician but also in the medical system as a whole, often resulting in a preference for more aggressive life-sustaining treatment at the end of life (Noah, 2012). Future research must consider the effect of race and ethnicity on trust in physician, patient–physician end-of-life planning discussions, and FACP.

Next, our measures were limited. We do not know when conversations between patients and their physicians occurred, who (i.e., doctor or patient) initiated them, how long they lasted, what topics were covered, or how doctors and patients felt about them. Having this information would help us know more about the circumstances in which such discussions occur, as well as how they might be made more common—and effective—in the future.

Finally, we used cross-sectional data. We argue that conversations with physicians spur other kinds of end-of-life planning, though we cannot know for certain that patient–physician conversations came first. In addition, we do not know whether conversations between doctors and patients fostered trust in physicians or whether trust in physicians caused these conversations to occur. Although causality cannot be determined, our results indicate that there is a significant relationship between end-of-life discussions between patients and their doctors and patients' trust in their physicians and FACP.

Conclusion

We sought to determine whether having end-of-life discussions with one's doctor during the course of routine care was related to trust in physicians and rates of FACP. We found that having end-of-life conversations with one's doctor was related to greater trust in that doctor as well as to higher rates of FACP. While controversy over Medicare reimbursement for physicians to talk to their patients about end-of-life care still exists, there is also an increasing need to address care and cost at the end of life. By having conversations with patients before the onset of a terminal illness, physicians would be able to learn about their patients' preferences over time, to develop more trusting relationships with their patients, and to increase rates of FACP. Waiting until one is close to death is unrealistic and costly. As Smith and Bodurtha (2013) have pointed out, "talking about or planning a good death with your doctor or nurse will not make death happen sooner" (p. 30), and they suggest that paying physicians to have end-of-life conversations with their patients might change the culture of how physicians address these issues with their patients.

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Table 1.

Descriptive Statistics by Whether Participants Talked to Their Doctor About the End of Life (N = 5,199).

	Total sample (*N* = 5,199)	**Talked to doctor (*n* = 310)**	**Did not talk to doctor (*n* = 4,889)**	
Measure	***M* (*SD*) or proportion**	***M* (*SD*) or proportion**	***M* (*SD*) or proportion**	**Comparison statistics**
Type of FACP None				$\chi^2 = 77.82^{***}$
None	.12	.01	.12	
Informal plans only	.16	.07	.17	
Both formal and informal plans	.66	.88	.65	
Formal plans only	.06	.04	.06	
Trust in doctor[a]				$\chi^2 = 12.29^{**}$
Strongly disagree,disagree or neutral	.16	.12	.16	
Agree	.51	.46	.51	
Strongly agree	.33	.41	.33	
Health care utilization				
Saw doctor in past year	.96	.98	.96	$\chi^2 = 5.58^{*}$
Seen in ER in past year	.19	.23	.19	$\chi^2 = 2.64$
Years seeing same doctor	11.55 (9.36)	12.65 (9.35)	11.48 (9.34)	$t = -2.13^{*}$
Current health				
Good, very good,or excellent selfreported health	.98	.97	.98	$\chi^2 = .90$
Depressive symptoms (0 = lowest to 140 = highest)	15.65 (14.87)	14.93 (13.89)	15.70 (15.99)	$t = .09$
Has had a stroke	.06	.06	.05	$\chi^2 = .23$
Has been diagnosed with heart disease	.25	.31	.25	$\chi^2 = 6.29^{*}$
Has been diagnosed with cancer	.18	.21	.18	$\chi^2 = 1.12$
Recent experience of spouse death				$\chi^2 = 2.57$
No spouse loss (reference)	.94	.94	.94	$\chi^2 = 2.57$
Slight or no physical pain	.03	.04	.03	
Severe or moderate physical pain	.03	.02	.03	
Recent experience of parent death				$\chi^2 = 8.79^{*}$
No parent loss (reference)	.86	.91	.85	
Slight or no physical pain	.09	.05	.09	
Severe or moderate physical pain	.06	.04	.06	
Sociodemographic characteristics Total assets[b]	US$670,448.60	US$786,839.00	US$663,068.50	$t = -2.00^{*}$
	(US$1,055,065)	(US$1,245,538)	(US$1,041,525)	
Education				
High school only (reference)	.65	.54	.65	$\chi^2 = 17.20^{***}$
Some college or associate's degree	.03	.03	.03	$\chi^2 = 0.11$

	Total sample (*N* = 5,199)	**Talked to doctor (*n* = 310)**	**Did not talk to doctor (*n* = 4,889)**	
Measure	***M* (*SD*) or proportion**	***M* (*SD*) or proportion**	***M* (*SD*) or proportion**	**Comparison statistics**
College degree or more education	.32	.43	.32	$\chi^2 = 16.97^{***}$
Marital status				$\chi^2 = 7.88^{**}$
Married	.76	.67	.74	
Gender				
Male	.47	.46	.47	$\chi^2 = 0.10$
Age[c] (years)	71.27 (2.94)	71.33 (3.27)	71.27 (2.92)	$t = -0.33$

Source. Wisconsin Longitudinal Study (1957–2013).

Note. Statistics reported prior to skew adjustment and standardization and after multiple imputation; statistics reported on thirdimputation. *t* and chi-square tests were used to evaluate significant differences between groups.

FACP = family advance care planning;

ER = emergency room.

[a] “To what extent do you agree that you have complete trust tin your doctor?”

[b] Total assets is middle-coded at US$0 and middle-coded at US$10,000,000.

[c] Due to disability status, some respondents may be eligible for Medicare before age 62.

$^{*}p < .05$

$^{**}p < .01$

$^{***}p < .001$

Table 2.

Ordinal Logistic Regression: Odds of Trust in Doctor.

	Odds of having greater trust in physician	
	OR	95% CI
Talked to doctor	1.45**	[1.15, 0.83]
Health care utilization		
Saw doctor in the past year	1.49**	[1.14, 1.95]
Seen in the ER in the past year	1.02	[0.88, 1.19]
Years seeing the same doctor	1.31***	[1.24, 1.38]
Current health		
Good, very good, or excellent self-reported health	0.91	[0.58, 1.41]
Depressive symptoms	0.80***	[0.76, 0.85]
Has had a stroke	1.15	[0.89, 1.48]
Has been diagnosed with heart disease	1.06	[0.94, 1.20]
Has been diagnosed with cancer	1.20**	[1.05, 1.38]
Sociodemographic characteristics		
Total assets	0.90**	[0.85, 0.96]
Some college or associates degree	0.88	[0.64, 1.21]
College or more education	0.92	[0.82, 1.04]
Married	1.19	[1.03, 1.37]
Male	1.05	[0.93, 1.17]
Age	1.05	[1.00, 1.11]
Recent experience of spouse death		
Slight or no physical pain	1.13	[0.93, 1.37]
Severe or moderate physical pain	1.25	[0.99, 1.59]
Recent experience of parent death		
Slight or no physical pain	0.99	[0.73, 1.34]
Severe or moderate physical pain	1.14	[0.81, 1.58]
F; df	19;4,441	
N	5,199	

*Source.*Wisconsin Longitudinal Study (1957–2013).

Note: OR = odds ratio;

CI = confidence interval;

ER = emergency room

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3.

Multinomial Logistic Regression: Odds of Having FACP.

	Formal only		Informal only vs. no FACP		Both	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Talked to doctor	7.55**	[2.10, 27.20]	5.33*	[1.58, 17.98]	17.14***	[5.46, 53.79]
Health care utilization						
Saw doctor in the past year	1.39	[0.79, 2.45]	2.53***	[1.56, 4.09]	2.19***	[1.53, 3.12]
Seen in the ER in the past year	0.91	[0.61, 1.35]	0.90	[0.67, 1.21]	1.09	[0.84, I.4I]
Years seeing same doctor	1.09	[0.95, 1.26]	.99	[0.89, 1.10]	1.05	[0.96, 1.15]
Current health						
Good, very good or excellent self-reported health	1.33	[0.50, 3.54]	0.89	[0.44, 1.81]	0.96	[0.53, 1.74]
Depressive symptoms	1.02	[0.88, 1.17]	0.87*	[0.78, 0.98]	0.87**	[0.79, 0.96]
Has had a stroke	1.17	[0.66, 2.08]	0.86	[0.53, 1.39]	1.11	[0.76, I.63]
Has been diagnosed with heart disease	1.05	[0.75, 1.47]	1.29	[0.99, 1.67]	1.40**	[1.12, 1.75]
Has been diagnosed with cancer	0.94	[0.64, 1.38]	1.25	[0.93, 1.68]	1.35*	[1.05, 1.73]
Recent experience of spouse death						
Slight or no physical pain	2.09	[0.89, 4.89]	1.23	[0.58, 2.67]	2.04*	[1.10, 3.77]
Severe or moderate physical pain	7.56***	[2.63, 21.76]	2.94*	[1.06, 8.15]	4.81**	[1.93, 12.00]
Recent experience of parent death						
Slight or no physical pain	1.16	[0.70, 1.92]	1.00	[0.66, 1.50]	1.32	[0.93, 1.85]
Severe or moderate physical pain	1.04	[0.55, 1.98]	1.09	[0.68, 1.74]	1.21	[0.81, 1.80]
Sociodemographic characteristics						
Total assets	1.37***	[1.18, 1.59]	1.03	[0.93, 1.15]	1.47***	[1.33, 1.61]
Some college or associates degree	1.32	[0.54, 3.25]	1.53	[0.78, 3.00]	1.57	[0.86, 2.84]
College degree or more education	1.07	[0.77, 1.49]	1.29	[1.00, 1.65]	1.53***	[1.24, 1.89]
Married	1.35	[0.94, 1.94]	1 49**	[1.15, 1.92]	1.48***	[1.19, 1.84]
Male	0.67*	[0.50, 0.91]	0.53***	[0.42, 0.66]	0.43***	[0.35, 0.52]
Age	1.39***	[1.22, 1.58]	0.92	[0.83, 1.02]	1.11*	[1.02, 1.21]
F; df N				57;4,403		
N				5,199		

Source. Wisconsin Longitudinal Study (1957–2013).

Note: FACP = family advance care planning;

OR = odds ratio;

CI = confidence interval;

ER = emergency room.

*$p < .05$

**$p < .01$.

$^{***}p < .001$