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Personality and Health Care Decision-Making Style

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Abstract

Using the Wisconsin Longitudinal Study Graduate Survey ($N = 5,830$), a population-based cohort of older adults (most aged 63–66 years), we explored relationships between five factors of personality and four preference types that account for multiple components of the health care decision-making process (information exchange, deliberation, and selection of treatment choice). After adjustment for personal, health, social, and economic factors, we found that increased conscientiousness and openness to experience and decreased agreeableness and neuroticism corresponded to preferring the most active decision-making style compared with the least active. A better understanding of how personality traits relate to patient decision-making styles may help clinicians tailor treatment discussions to the needs and preferences of individual patients.

Conflicting messages in the medical literature leave clinicians with little guidance on how to appropriately encourage patient participation in health care decision making. Expert recommendations tend to favor patient involvement in decision making (Emanuel & Emanuel, 1992; Frosch & Kaplan, 1999; McNutt, 2004; Whitney, McGuire, & McCullough, 2004); however, others disagree (Salmon & Hall, 2004), and there is no consensus on the degree of autonomy that is best. Research with diverse types of patients suggests that most patients want to exchange information with their doctors and be told about treatment options but that wider variation exists regarding patients' preferences for participation in deliberation about treatment options or making the final decision (Benbassat, Pilpel, & Tidhar, 1998).

Some researchers have suggested that patient desire not to participate in decision making may represent a lack of knowledge or misunderstanding of the benefits of participation (Robinson & Thomson, 2001). Attempts to increase patient participation through education have been shown to improve physical functioning and treatment adherence in some small studies (Greenfield, Kaplan, & Ware, 1985; Greenfield, Kaplan, Ware, Yano, & Frank, 1988; Stewart, 1995); however, others have found that such attempts can lead to decreased satisfaction with providers (Roter, 1977), increased anxiety (Moumjid, Carrere, Charavel, & Bremond, 2003; Roter), and other negative psychological reactions (Mahler & Kulik, 1990). It remains unclear when efforts to increase patient autonomy will result in better health and when they will cause psychological distress.

The effects of attempts to directly involve patients in their health care decisions may be dependent on how much patients want to participate (i.e., their preferences for participation). Recently, the Institute of Medicine (2001) identified patient-centeredness, that is, respect for patient preferences and allowing patient values to guide all clinical decisions, as a critical dimension for improving the quality of health care. Three years later, in a report on improving medical education, they included being aware of a patient's ability to participate in shared

decision making—based on the patient’s personal, social, and economic resources—as a priority for physician–patient interaction skills (Institute of Medicine, 2004). Such goals are admirable but substantial gaps still exist in our understanding of patient preferences, including the extent to which patient preferences reflect personal, social, and economic resources. Previous studies have shown younger age, female sex, higher education, and less serious illness (Degner & Sloan, 1992; Ende, Kazis, Ash, & Moskowitz, 1989; Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995; Thompson, Pitts, & Schwankovsky, 1993) to be associated with preferences for increased participation, but such sociodemographic and health characteristics do not tell the whole story (Benbassat et al., 1998).

Personality is often mentioned as a potential determinant of preferences for decision making, yet very few studies have empirically tested it. Qualitative research with older adults suggests that self-regulatory processes such as low self-efficacy impede participation in decisions about medications (Belcher, Fried, Agostini, & Tinetti, 2006). Other studies have also found correlations between self-efficacy and active participation in health care decisions (Arora, Ayanian, & Guadagnoli, 2005; Janz et al., 2004), though at least one found no relationship (Braman & Gomez, 2004). One qualitative study ($N = 25$) of cancer patients found that patient shyness hindered active participation (Sainio, Eriksson, & Lauri, 2001). A study of undergraduate students found no significant relationships between preferences for information or decision making and five factors of personality (using the NEO–Five Factor Inventory; Auerbach & Pegg, 2002). However, to our knowledge the relationship between a comprehensive assessment of personality and health care decision-making style remains unexplored within a population of older adults, who will have had more interactions with doctors and the health care system.

In the absence of research on personality and health care decision-making styles, examining the relationship between personality and health outcomes may be informative. The five-factor model of personality has formed a strong basis for these studies, which have often associated personality traits with disease and aging (Smith & Spiro, 2002).

Conscientiousness, one of the five factors, predicts longevity (Friedman, 2000), most likely through social environmental factors and health behaviors (rather than psychophysiological mechanisms; see Adler & Matthews, 1994; Roberts, Walton, & Bogg, 2005). In an extensive meta-analysis, Bogg and Roberts (2004) found that conscientiousness was consistently negatively related to risky health behaviors such as drug use and violence and was positively related to beneficial health behaviors such as physical fitness. As conscientious individuals tend to take a more active role in trying to improve their health, we hypothesize that they will prefer more active participation in health care decision making as well.

Research suggests that neuroticism influences patient illness behavior, potentially in two different ways. Freidman (2000) posited that for some neurotic patients, negative affect leads them to give up on treatment regimens and avoid interpersonal assistance that could improve their health. The second sort of neurotic patient is the “health nut” or “worried well” patient who is hypervigilant about germs and getting medical attention for symptoms, and who could try to influence doctors toward more aggressive therapies. However, an experimental test of this theory found that neurotic individuals who present more elaborate symptoms can actually harm their credibility with doctors. The presentation of psychosocial concerns may lead doctors to misdiagnose the patient’s disease and recommend psychological interventions in lieu of medical treatments (Ellington & Wiebe, 1999). We hypothesize that individuals with higher neuroticism may prefer a less active role in health care decision making, either in an effort to avoid interactions with doctors or because of high anxiety about treatment decision making.

Conceptualization of Decision-Making Styles

Health care decision making is a not unidimensional concept; it has been shown repeatedly to have distinct components. Charles and colleagues (1999) created a framework of the health care decision-making process with three analytical components: information exchange, deliberation, and who decides what treatment to implement, which we termed *decisional control*. Charles subcategorized information exchange in four ways (flow, direction, type, and amount), but we focused on direction and amount of information only. Using this framework, we easily describe three common models of decision making. In the *paternalistic* model, physicians perform information management, assess options, and make treatment decisions for patients without consideration of patient preferences. Conversely, in the *informed* model, physicians provide all relevant information to their patients, and patients alone assess their options and make the final decision. In the *shared* model, patients and physicians participate equally in all components of decision making. The major limitation of these models is that they do not accommodate situations in which patients want to participate to different degrees in different components. To address this, we developed a typology that allows the components of the decision-making process to vary within patients; for example, a strong preference for deliberation will not explicitly imply a strong preference for retaining control over decisions (Flynn, Smith, & Vanness, 2006). By allowing patients to vary in their preferences for each of the analytic components, our typology better reflects the complex nature of patient decision-making styles.

Methods

We use data from the Wisconsin Longitudinal Study (WLS) graduate survey, a long-term cohort study of a 1/3 random sample ($N = 10,317$) of men and women who graduated from Wisconsin high schools in the spring of 1957. Surveys have been conducted in 1957 (in school), 1975 (phone), 1992 (phone and mail), and 2004 (phone and mail). Additional information about the WLS is available online (<http://www.ssc.wisc.edu/wlsresearch>). In 2004, surviving WLS graduates who had responded to at least the 1975 survey ($n = 8,578$) were fielded for contact by means of telephone and consented for research. Phone interviews were conducted and audiorecorded by use of computer-assisted techniques. WLS graduates were also mailed a 55-page paper mail-back survey. The overall response rate for complete telephone and mail surveys was 73% ($n = 6,279$). To assess respondent comprehension of new questionnaire items in the 2004 round of data collection, including those items comprising our dependent variable, we conducted cognitive interviews with 40 participants. Our analysis sample included everyone who completed the 2004 phone and mail surveys and could be characterized by one of four prevalent decision-making preference types, which are subsequently described ($N = 5,830$). All variables in our analysis came from the WLS 2004 mail or telephone survey unless otherwise noted. This study was approved by the Institutional Review Board at the University of Wisconsin–Madison.

Variables

We constructed our dependent variable from four items that assessed respondent preferences during health care visits for information exchange (physician knowledge of patient medical history, “I believe that my doctor needs to know everything about my medical history to take good care of me,” and physician disclosure of treatment choices, “When there is more than one method to treat a problem, I should be told about each one”), deliberation (discussion of treatment choices, “I would rather have my doctor make the decisions about what’s best for my health than to be given a whole lot of choices”), and decisional control (selection of treatment choice, “The important medical decisions should be made by my doctor, not by me”). Preferences for participation may be different depending on the nature of a particular decision, but because this was a population-based sample of older adults, we included broad-spectrum

items rather than situation- or disease-specific items. We instructed respondents to “please think about the doctor that you usually go to when you are sick or need advice about your health and indicate how much you agree or disagree with each statement.” We coded the preference items were coded on a 5-point scale from 1 = agree strongly to 5 = disagree strongly, and we reverse scored them when necessary so that all items indicate preferences for more information, deliberation, or decisional control.

Rather than classifying patients as simply “active” or “passive,” we used cluster analysis to distinguish mutually exclusive groups of individuals, each with a specific pattern of preferences based on the three analytic components of decision making of Charles’ and colleagues (1999). Cluster analysis maximizes the differences in preference ratings, making no a priori assumptions about what decision-making styles would be present in the sample, and allowing each stage of the decision-making process to vary within patients, which we believe better reflects the complex nature of patient decision-making styles. We explored both partition and matching-type clustering methods. Our final typology was based on hierarchical agglomerative cluster analysis using average linkage (Flynn et al., 2006). We ignored cluster solutions with fewer than 15 observations for the purpose of manageability and generalizability. To explore the pattern of scores across the dimensions of the decision-making process, we calculated the mean values of the preference items for each cluster solution that we examined. We examined the differences between means for the clusters between 3 and 20 solutions. The number of clusters to choose is discretionary (Schonlau, 2002); we chose 11 cluster solutions because of substantive differences between means for clusters in this solution compared with 10 and 12 solutions (i.e., after 11 cluster solutions, the breaks did not identify distinctly different preference types).

Four preference types characterized over 96% of respondents, all of which preferred high levels of information exchange with providers (Table 1). Deliberative Autonomists were the most active type; they preferred discussion of treatment choices and personal control over important decisions. Deliberative Delegators preferred discussion of treatment choices with doctor control over important decisions. Nondeliberative Autonomists preferred little or no discussion of treatment choices with personal control over important decisions. Nondeliberative Delegators were the least active type; they preferred little or no discussion of treatment choices and doctor control over important decisions. The remaining 4% of respondents were characterized by seven other types, which are quite small and thus ignored in this analysis.

We organize explanatory variables under the headings of personal, health, social, and economic, on the basis of the Institute of Medicine’s identification of these types of resources as being integral to patients’ ability to participate in health care decision making (Institute of Medicine, 2004). Personal factors included gender, cognitive ability, and personality. Current cognitive ability comes from a six-item version of the Similarities subtest of the Wechsler Adult Intelligence Scale–Revised (WAIS-R; Wechsler, 1981). The WAIS-R Similarities subtest measures verbal abstract reasoning, typically loading very highly on the *g* factor (.79; see Kaufman & Lichtenberger, 1999). We standardized scores to have $M = 0$ and $SD = 1$. We also included a baseline measure of cognitive ability. The state of Wisconsin assessed high school students’ cognitive ability (IQ) in 1954 and 1956, respondents’ freshman and junior years of high school, by using the Henmon–Nelson test of mental ability, 1954 revision (Retherford & Sewell, 1988). These scores were averaged and age-normed, and we standardized them to have $M = 0$ and $SD = 1$. Baseline and current cognitive ability were correlated at 0.44.

We assessed personality by using a five-factor model that includes Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (McCrae & Costa, 2003). Twenty-nine items, a subset of the 54-item Big Five Inventory, known as the

BFI-54 (Srivastava, John, Gosling, & Potter, 2003), represented this five-factor model of personality (5 items for neuroticisms; 6 per factor otherwise). We measured response categories on a 6-point scale from 1 = agree strongly to 6 = disagree strongly. We reverse scored items when appropriate, summed them, and standardized them to have $M = 0$ and $SD = 1$, where higher values correspond to more of that factor. For individuals who did not answer all items in a given factor ($n = 326$), we imputed a score based on gender and the 1992 phone survey measures of the same construct.

Health factors included the physical and mental component summary scores of the 12-item Short-Form Health Survey, known as the SF-12 (Ware, Kosinski, & Keller, 1996), the Duke Older Americans Resources and Services schedule (Duke University Center for the Study of Aging and Human Development, 1978), and the number of regularly taken prescription medications.

Social factors included rural or farm origins (measured in 1957), educational attainment, marital status, and length of relationship with a usual provider, which we measured in years, with zero assigned to those without a usual provider of care.

Economic factors included household income, net worth, and health insurance status. For presentation, we categorized income and net worth roughly into tertiles, with the 5% (net worth) and 7% (income) of respondents with zero or negative values retained in a separate category. Income and net worth were correlated at 0.54. Insurance was self-reported and we recoded this into five categories—private insurance, Medicare with additional private insurance, Medicare with or without additional public insurance, other public insurance (Medicaid and military coverage), and uninsured.

Statistical Methods

We used a multinomial logistic regression model with decision-making preference type as the dependent variable and all explanatory variables described herein to examine the relationships between decision-making style and personal, health, social, and economic factors. We present odds ratios and 95% confidence intervals comparing the more active preference types to the least active type (Nondeliberative Delegates). We considered results to be statistically significant at a value of $p < .05$. We analyzed data by using SAS Version 8.2 and Stata Version 9.0.

Results

Unadjusted descriptive characteristics of the sample are presented in Table 2. Statistically significant results from the regression model (Table 3) are discussed in the following paragraphs.

Personal

Compared with Nondeliberative Delegates, respondents in the more active preference types were more likely to be female. Higher cognitive ability and four personality factors distinguished between Deliberative Autonomists and Nondeliberative Delegates. Each standard deviation increase in high school cognitive ability corresponded to 29% increased odds of being a Deliberative Autonomist compared with being a Nondeliberative Delegate, and each standard deviation increase in current cognitive ability corresponded to 25% increased odds. An increase of 1 SD in agreeableness (odds ratio or $OR = 0.90$, confidence interval or $CI = 0.83-0.98$) or neuroticism ($OR = 0.84$, $CI = 0.77-0.91$) corresponded to decreased odds of being a Deliberative Autonomist compared with being a Nondeliberative Delegate, whereas a 1 SD increase in conscientiousness ($OR = 1.09$, $CI = 1.00-1.18$) or openness to experience

(OR = 1.31, CI = 1.19–1.43) corresponded to increased odds of being a Deliberative Autonomist.

Health

Each additional regularly taken prescription medication corresponded to a 5% decreased odds of being a Deliberative Autonomist or Deliberative Delegator compared with being a Nondeliberative Delegator.

Social

Nondeliberative Delegators were more likely to be from rural or farm origins than more active preference types. Having at least a college degree corresponded to over 50% increased odds of being a Deliberative Autonomist compared with a Nondeliberative Delegator.

Economic

Likewise, increased net worth corresponded to roughly 50% increased odds of being a Deliberative Autonomist compared with a Nondeliberative Delegator. Having Medicare without any kind of supplemental insurance distinguished between Deliberative and Nondeliberative Delegators (OR = 0.65, CI = 0.43–0.98).

Discussion

Decision-making style appears to reflect primarily personal factors as well as select health, social, and economic factors; however, these explanatory variables were not equally predictive of all types. Four of five factors of personality were helpful for explaining differences between the most and least active types. Only two variables, gender and rural or farm origins, distinguished the “mixed” types, those who want either deliberation or selection of treatment choice but not both, from the Nondeliberative Delegators, who want neither.

We found lower levels of two personality traits, agreeableness and neuroticism, among those individuals who prefer to make important medical decisions and participate in deliberation. Agreeableness is characterized by cooperativeness and tolerance (McCrae & Costa, 2003); thus, agreeable individuals may be less confrontational with doctors when it comes to decision making and may not be bothered when doctors assume the traditional paternalistic role.

As hypothesized, higher neuroticism was associated with preferences for less participation. Neuroticism is characterized by anxiety and self-consciousness (McCrae & Costa, 2003), and individuals prone to such negative affect might find discussion about treatment options and assuming personal responsibility for making important health decisions to be anxiety provoking or otherwise distressing. Maximizing decisional conflict by giving decisional control to patients has been touted as difficult but ultimately beneficial for all patients (McNutt, 2004). Nevertheless, especially in the case of older adults for whom anxiety may impair how well they are able to devote complete attention to cognitive tasks (Hogan, 2003), it seems important to respect the preferences of patients who prefer not to participate in health care decision making. Exploratory research on risk taking in decision making has suggested that neurotic individuals prefer less risk in decisions to achieve a gain while also preferring more risk in decisions to avoid a loss (Lauriola & Levin, 2001). This may have additional consequences for neurotic patients, depending on the type of health decision being made, and should be explored in future work.

Two other personality traits, conscientiousness and openness to experience, were more likely to be found among those who prefer to make important medical decisions and participate in deliberation. Conscientiousness is characterized by self-discipline and ambition (McCrae &

Costa, 2003), and conscientious individuals are known to take an active role in avoiding risky health behaviors and participating in beneficial ones. It is not surprising, then, as we hypothesized, that they also prefer to take an active role in health care decision making.

Lastly, as the model of the doctor–patient relationship has changed over the lifetime of this cohort of older adults, it is likely that doctors allowed these individuals to participate in decision making only relatively recently. It is unsurprising, therefore, that those individuals who are more open have preferences for more active involvement in health care decision making, given that openness to experience is characterized by creativity and a preference for novelty.

Both gender and rural or farm origin were linked to decision-making style. Previous research has already shown that women prefer more active involvement in health care decision making (Arora & McHorney, 2000). Although we know of no literature specifically linking rural or farm origins to health care preferences, farm origins are associated with lower socioeconomic attainment and could plausibly be associated with subcultural differences net of other sociodemographic measures, such as a preference for the more traditional doctor–patient relationship. As a colleague from a rural Iowan sheep farm explained, “Farm people, we’re different” (Jeremy Freese, personal communication, March 2, 2007).

As in previous studies, higher education was associated with preferences for more active participation in decision making. We also found that individuals with higher cognitive ability, whether measured in high school or in older age, were more likely to have the most participatory decision-making style. Individuals who have more education or are more intelligent may feel at greater ease in discussions with health care providers and have increased confidence in personal ability to make important medical decisions. Previous studies have linked less serious illness with preferences for more active participation in decisions, and although we found no relationship between SF-12 physical or mental health summary scores or the number of conditions a respondent reported, we did see a relationship between taking fewer prescription medications and wanting to be involved.

Our study has several limitations. First, it is important to note that these data are not a random sample of the country, which limits the generalizability of our results. Second, there is a lack of variation in respondent age, as over 98% of WLS respondents were born between 1938 and 1940. Nevertheless, although our findings should be validated in more diverse populations, by examining the role of personality within the WLS graduate sample, we were able to essentially control for period and cohort effects to focus on the factors within individuals that influence preferences (Giele & Elder, 1998). Third, thus far the WLS has only obtained decision-making preferences at one point in time, so we can offer no causal inferences about personality and decision-making style. Finally, it will be critical to extend this research to examine behaviors related to health care decision making. There can be considerable mismatch between the roles patients say they want and the ones they feel they actually perform in the context of the health care visit (Ford, Schofield, & Hope, 2003). Keeping these limitations in mind, we find that the WLS offers significant strengths as a large-scale, population-based cohort study that includes diverse information about respondents’ personal, health, social, and economic lives.

Respecting preferences for participation in health care decision making is an integral component of promoting optimal patient-centered care for older patients. Our results suggest that many factors, including multiple personality traits, gender, cognitive ability, rural or farm origins, education, and wealth, are associated with preferences for participation in health care decision making. We support the view that patient-centered care should strive to respond to individual patient’s needs and preferences when possible. This is not a novel concept, but we are still at the beginning of understanding when to encourage participation and when to respect patient preferences to not participate. For the majority of patients, the challenge lies in allowing

them to participate to the extent they desire. For the smaller group who wants neither a lot of choices nor the role of making important medical decisions (the Nondeliberative Delegators), attempts to increase patient participation in decision making should be sensitive to those preferences. Rather than directed educational attempts to “retrain” patients by encouraging them to gain experience with decision making, it may be more sensitive to promote strategies to enhance the provider–patient relationship. The results of this study suggest that the length of a relationship with a specific health care provider is not related to patient decision-making style. However, enhancing continuity of health care and long-standing relationships with physicians may improve physicians’ ability to truly represent individual patients, when that is what is desired. Appreciation of how personality traits relate to patient decision-making styles may allow clinicians to individually tailor treatment discussions most appropriately, both to encourage participation and to respect preferences. This should continue to be explored in future research.

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Table 1

Preference Types of WLS Respondents

Type	Preference		Selection of Treatment	%
	Information Exchange	Deliberation		
Deliberative Autonomist	High	High	Patient	58
Nondelegative Autonomist	High	Low	Patient	12
Deliberative Delegator	High	High	Doctor	6
Nondelegative Delegator	High	Low	Doctor	24

Notes: WLS = Wisconsin Longitudinal Study. Here, $N = 5,830$.

Table 2
Unadjusted Characteristics of WLS Respondents

Variable	<i>M (SD)</i>
Personal	
Age	64 (0.7)
Female (%)	54
High school cognitive ability ^a	0 (1)
Current cognitive ability ^b	0 (1)
Personality ^c	0 (1)
Social	
Rural or farm origins (%)	22
Education (%)	
High school	56
Some college	16
College	14
Postgraduate	14
Married (%)	80
Length with usual Provider	9.7 (9.0)
Health	
SF-12 summary score ^d	
Physical component	49 (10)
Mental component	55 (6)
No. of OARS conditions ^e	3.8 (2.5)
No. of prescription medications	2.8 (2.5)
Economic (\$)	
Household income (median, \$)	47,100
Net worth (median, \$)	332,900
Health insurance (%)	
Private	55
Medicare + other private	32
Medicare without private	8
Other public	2
None	3
Married (%)	80

Notes: Here, $N = 5,830$. WLS = Wisconsin Longitudinal Study; OARS = Older Americans Resources and Services; SF-12 = 12-item Short-Form Health Survey; *SD* = standard deviation.

^a Measured in high school by use of the Henmon–Nelson test, 1954 version, standardized.

^b Wechsler Adult Intelligence Scale–Revised similarities task, standardized.

^c Five-factor model, standardized.

^d Medical Outcomes Study Short Form-12 summary scores.

^e Duke OARS schedule of common conditions.

ORs (95% CIs) Comparing More Active Preference Types to the Least Active Type, the Nondeliberative Delegates

Table 3

Variable	OR (95% CI)		
	Deliberative Autonomist	Nondeliberative Autonomist	Deliberative Delegate
Personal			
Female	2.16*	1.71*	1.38*
High school cognitive ability ^a	1.29*	1.10	1.07
Current cognitive ability ^b	1.25*	1.07	1.08
Personality ^c			
Extraversion	0.99	1.00	0.96
Agreeableness	0.90*	1.00	0.97
Conscientiousness	1.09*	1.03	1.12
Neuroticism	0.84*	0.85*	1.00
Openness to Experience	1.31*	1.07	1.01
Health			
SF-12 summary score ^d			
Physical component	1.00	1.01	1.00
Mental component	1.00	1.01	0.99
No. of OARS conditions ^e	1.01	1.03	0.99
No. of prescription medications	0.95*	1.00	0.95*
Social			
Rural or farm origin	0.80*	0.63*	0.69*
Education			
High school	1.00	1.00	1.00
Some college	1.17	0.79	1.06
College	1.58*	1.58*	1.30
Postgraduate	1.53*	0.79	0.99
Married	1.02	0.97	1.04
Length of relationship with usual provider (years)	0.99	0.99	1.01
Economic			
Household income (\$)			
0	1.00	1.00	1.00
0-31,800	0.91	0.62	1.25
31,801-64,400	1.02	0.97	1.33
64,400+	1.17	1.17	1.61
Net worth (\$)			
0 or less	1.00	1.00	1.00
0-180,000	1.27	1.54	1.23
181,000-500,000	1.49*	2.08	1.21
500,000+	1.56*	1.69	1.12
Health insurance			
Private	1.00	1.00	1.00
Medicare + other private	1.01	0.89	1.04
Medicare	0.82	0.64	0.65*
Other public	0.93	0.44	1.28
None	1.01	1.05	0.74

Notes: OR = odds ratio; CI = confidence interval; OARS = Older Americans Resources and Services; SF-12 = 12-item Short-Form Health Survey. For the Deliberative Autonomist, $n = 3,409$; for the Nondeliberative Autonomist, $n = 674$; for the Deliberative Delegate, $n = 373$. Here, $n = 5380$ Baseline group (Non-deliberative Delegates) $n = 1374$.

^aMeasured in high school by use of the Henmon–Nelson test, 1954 version, standardized.

^bWechsler Adult Intelligence Scale–Revised similarities task, standardized.

^cFive-factor model, standardized.

^dMedical Outcomes Study Short Form-12 summary scores.

^eDuke OARS schedule of common conditions.

* Significant at $p < .05$ or less.