Original Article

The Knowing–Doing Gap in Advance Directives in Asian Americans: The Role of Education and Acculturation

American Journal of Hospice & Palliative Medicine®
2017, Vol. 34(9) 874-879

DOI: 10.1177/1049909116668518
journals.sagepub.com/home/ajh
SAGE

Yuri Jang, PhD[1], Nan Sook Park, PhD[2], David A. Chiriboga, PhD[3], Kavita Radhakrishnan, PhD[4], and Miyong T. Kim, PhD[4]

Abstract

Objectives: The purposes of the present study were (1) to explore the completion rate of advance directives (ADs) in a sample of Asian Americans and (2) to examine the direct and moderating effects of knowledge of AD, education, and acculturation in predicting AD completion. Education and acculturation were conceptualized as moderators in the link between knowledge and completion of ADs. **Methods:** Using data from 2609 participants in the 2015 Asian American Quality of Life survey (aged 18-98), logistic regression analyses on AD completion were conducted, testing both direct and moderating effects. **Results:** The overall AD completion rate in sample was about 12%. The AD knowledge and acculturation independently predicted AD completion. No direct effect of education was found; however, it interacted with AD knowledge. The AD knowledge was more likely to be translated into completion in the group with higher education. **Conclusions:** The AD completion rate observed in the present sample of Asian Americans was much lower than that of the US general population (26%-36%). The interactive role of education helps to explain the gap between AD knowledge and completion and suggests intervention strategies.

Keywords
advance directives, Asian Americans

Introduction

Due to increases in aging population and advancement in life-sustaining medical technologies, a growing number of individuals and families face difficult medical decisions near the end of life (EoL). Indeed, EoL care is in the forefront of the current public health agenda and has far-reaching personal, economic, and policy implications.[1,2] Advance directives (ADs) are written documents that allow individuals to express their preferences for medical treatment in the event that they become incapable of making their own decisions.[3] By ensuring personal autonomy, ADs not only reduce the decision-making burden of family and health-care professionals during medical crisis but also improve the quality of EoL care[4] and reduce health-care expenditures.[2,5]

Despite their imperative needs and proven benefits, ADs have not been widely implemented. According to national surveys, the AD completion rate of the US general population ranges from 26% to 36%.[6-8] Underutilization is particularly pronounced in racial/ethnic minority groups. The AD completion rate of African Americans and Hispanics, for example, is as low as one-third of non-Hispanic whites.[7-9] With regard to Asian Americans, there is a marked paucity of information, and most of the existing studies are based on small samples of a single ethnic group of older adults or health-care professionals,[10-14] limiting the generalizability of findings. Given the status of Asian Americans as the fastest growing minority group and the largest group of new immigrants,[15,16] EoL care in this emerging population deserves attention.

Such attention should begin with the conceptual framework. Relevant to AD is that many theories of health promotion suggest that activation or modification of behavior is facilitated by knowledge or awareness of the targeted action.[17] That is why enormous efforts in public health interventions are geared toward disseminating information and enhancing knowledge. However, translating knowledge into behaviors has been a persistent challenge. Although knowledge is a powerful determinant of the AD completion,[9,18,19] its modest association with actual behavior suggests a discordance between knowing and doing. In order to increase the completion rate of ADs, it is

[1] School of Social Work, The University of Texas at Austin, Austin, TX, USA
[2] School of Social Work, University of South Florida, Tampa, FL, USA
[3] Department of Child and Family Studies, University of South Florida, Tampa, FL, USA
[4] School of Nursing, The University of Texas at Austin, Austin, TX, USA

Corresponding Author:
Yuri Jang, PhD, School of Social Work, The University of Texas at Austin, 1925 San Jacinto Blvd, D 3500, Austin, TX 78712, USA.
Email: yjang12@austin.utexas.edu

imperative to explore factors that play a role in the knowledge–behavior gap.

The present study conceptualized education and acculturation as potential conditioning variables that shape the link between knowledge and completion of ADs. Education often serves as a promoter of both knowledge and the completion of ADs.[6-8] For immigrants, acculturation plays an integral role in the various aspects of their lives. Referring to the status of cultural adaptation to the host society,[20] acculturation uniquely represents immigrants' ability to access resources and benefits in the host society.[21] Studies also show the positive effect of acculturation in promoting AD-related knowledge and completion.[10,11] In addition to these direct benefits, the present study hypothesized that education and acculturation may alter the linkage between the knowledge and completion of AD. Translation of knowledge into behavior would be more likely when individuals have higher levels of education and acculturation.

Focusing on Asian Americans, the goal was to explore the relationships among education, acculturation, knowledge of ADs, and completion of ADs. In predicting completion of ADs, we anticipated (1) the direct effects of education, acculturation, and knowledge of ADs and (2) the interactive roles of knowledge of ADs with education and acculturation. Testing of the direct and moderating effect models was performed with consideration of demographic and background characteristics (eg, age, gender, ethnic origin, marital status, financial status, self-rated health, and nativity). A better understanding of the conditioning role of education and acculturation could suggest strategies to increase the rate of AD completion in Asian Americans.

Methods

Data Set

Data were drawn from the Asian American Quality of Life survey. The survey was conducted with Asian American residents in Austin, Texas, with approval from the university's institutional review board. The 10-page survey questionnaire was designed to address cultural and linguistic diversities among Asian Americans. Originally developed in English, the questionnaire was then translated into the national languages of the 5 largest Asian subgroups living in Austin: Chinese (Chinese), Asian Indian (Hindi), Korean (Korean), Vietnamese (Vietnamese), and Filipino (Tagalog). Gujarati was also included in addition to Hindi for the Asian Indian group because it is the most common language being used by non–English-speaking Asian Indians. In the case of Chinese, versions in both traditional and simplified characters were prepared. The initial translations were conducted by 8 professional translators and graduate-level bilingual researchers. For each language, the translated version was reviewed and validated by a set of bilingual volunteers. Upon refinement of the questionnaire, each language version was pilot tested with 3 to 5 community members who spoke the target language, and their feedback was incorporated into the final version.

Survey data were collected from August 2015 to December 2015. Self-identified Asians 18 years or older and living in the Austin area were eligible to participate. Recognizing that Asian Americans are often difficult to locate using standard recruitment strategies, multiple potential survey sites were contacted. In addition, the project was publicized through media and ethnic community sources, and referrals for individuals, groups, and organizations were actively sought. A total of 76 survey sessions took place at various locations across the City of Austin (eg, churches, temples, grocery stores, and places for small group meetings and cultural events). The surveys, self-administered using paper and pencil, were available in 8 versions (English, traditional Chinese, simplified Chinese, Korean, Vietnamese, Hindi, Gujarati, and Tagalog); participants used their preferred language version. Bilingual research assistants at each survey site engaged in recruitment and provided survey assistance. It took about 20 minutes to complete the 10-page questionnaire, and respondents were each paid US$10. A total of 2614 individuals were participated. After removing cases with missing information on AD-related questions, the final sample size was 2517. It is noteworthy that almost half of the participants (48.5%) used survey questionnaires in languages other than English.

Measures

Sociodemographic information included age (0 = 18-39, 1 = 40-59, 2 = 60, and older), gender (0 = male, 1 = female), ethnic origin (0 = Chinese, 1 = Asian Indian, 2 = Korean, 3 = Vietnamese, 4 = Filipino, and 5 = Other Asian), marital status (0 = married, 1 = not married), financial status (0 = able to make ends meet, 1 = unable to make ends meet), self-rated health (0 = excellent/very good/good, 1 = fair/poor), and nativity (0 = US-born, 1 = foreign-born).

Knowledge of ADs was measured by asking: "Have you heard about advance directives?" The response was in the binary format of yes (1) or no (0). For education, the total years of education completed were dichotomized (0 = low [≤12 years], 1 = high [>12 years]). Participants were also asked to rate their level of familiarity with the culture and custom of mainstream America on a 4-point scale, and responses were dichotomized (0 = very low/low, 1 = high/very high).

Subsequent to the question on knowledge of ADs, the following statement and question were used to assess the AD completion: "An advance directive is a type of legal document that designates someone who can make medical decisions in the event that you are unable to do so. Do you have such a document?" The response was coded in a binary format of yes (1) or no (0).

Analytic Strategy

The first step was to assess the frequency distributions on all measures. The AD completion rates in subgroups were then compared using χ^2 analyses. Spearman rank-order correlations were tested to assess the associations among study variables.

Logistic regression analyses of the AD completion were conducted with (1) the direct effect model of AD knowledge, education, and acculturation and (2) subsequent addition of the interaction terms of AD knowledge with education and acculturation. Demographic and background variables were adjusted for the analyses. When the interaction term was significant, further analyses on subgroups were conducted to assess how the link between knowledge and completion of ADs varied by the moderating factor. All analyses were conducted using SPSS 23 (IBM Corp, Armonk, New York).

Results

Descriptive Characteristics of the Overall Sample

The first column in Table 1 presents the descriptive statistics for the overall sample. Age ranged from 18 to 98, with an average of 42.8 (standard deviation [SD] = 17.1). About 20% of the participants were 60 and older, and more than half (54.9%) were female. Chinese (24.9%) was the largest subgroup, followed by Asian Indians (21.8%), Vietnamese (19.1%), Koreans (18.5%), Filipinos (10.1%), and individuals from other Asian groups (5.6%). More than 33% were not married, and about 17% reported financial burden that they were unable to make ends meet. About 11% of the participants rated their health as either "fair" or "poor." A majority (90.6%) of the participants were foreign-born. The number of years of education completed ranged from 0 to 17, with an average of 15.1 (SD = 2.41). About 18% of the sample had 12 or fewer years of education completed. About one-third fell into the category of the "low" acculturation group. About 20% of the sample reported that they had heard about ADs, but only 11.8% had completed ADs.

Comparisons of the AD Completion Rate in Subgroups

The second column in Table 1 compares the AD completion rates of the subgroups. Compared to the youngest group (18-39), both older groups had a significantly higher rate of AD completion. At 22%, the group aged 60 and older had the highest completion rate, followed by 14.7% and 5.8% for middle age group (40-59) and younger age group (18-39), respectively. In terms of ethnic origin, about 14% of Chinese had completed ADs. In comparisons with the Chinese, Koreans had a significantly lower rate of the AD completion (5.6%), whereas Filipinos presented a substantially higher rate (22.4%). The rates of AD completion in the groups with unmarried status (9.6%) and financial difficulty (7.8%) were significantly lower than those in their counterparts (12.9% in the married group and 12.2% in the group without financial difficulty, respectively). Individuals with a high level of acculturation were more likely to complete ADs compared to those with a lower level of acculturation (14.2% vs 6.8%). A notably higher rate of completion (36.6%) was observed in the group with knowledge of ADs compared to the group without knowledge (5.3%). No group difference was found by gender, self-rated health, nativity, and education.

Table 1. Characteristics of the Overall Sample and the Comparisons of the Subgroups in the Completion of Advance Directives (ADs).

	Total Sample N = 2517 (%)	AD Completion Rate in Subgroups (%)
Age		
18-39	49.0	5.8
40-59	31.1	14.7[a]
60 and older	19.9	22.0[a]
Gender		
Male	45.1	10.6
Female	54.9	12.8
Ethnic origin		
Chinese	24.9	13.7
Asian Indian	21.8	10.4
Korean	18.5	5.6[a]
Vietnamese	19.1	11.8
Filipino	10.1	22.4[a]
Other	5.6	10.0
Marital status		
Married	66.6	12.9
Not married	33.4	9.6[b]
Financial status		
Able to make ends meet	82.8	12.2
Unable to make ends meet	17.2	7.8[b]
Self-rated health		
Excellent/very good/good	89.4	11.7
Fair/poor	10.6	12.8
Nativity		
US-born	9.4	9.8
Foreign-born	90.6	12.0
Education		
Low (≤12 years)	18.4	12.5
High (>12 years)	81.6	11.6
Acculturation		
Low	32.6	6.8
High	67.4	14.2[a]
Knowledge of ADs		
No	79.8	5.3
Yes	20.2	36.6[a]
Completion of ADs		
No	88.2	–
Yes	11.8	–

χ^2 test was conducted by comparing the AD completion rates between the subgroups. For age and ethnicity, the youngest group (18-39) and Chinese were used as references.
[a] $P < .001$.
[b] $P < .05$.

Correlations Among Study Variables

Spearman rank-order correlations among study variables were tested (not shown in tabular format). The AD completion was significantly, but only minimally, correlated with age group ($r_s = 0.20$; $P < .001$), marital status ($r_s = -0.05$; $P < .01$),

Table 2. Logistic Regression Models of the Completion of Advance Directives (ADs).

	Odds Ratio (95% Confidence Interval)	
Knowledge of ADs (reference no)		
Yes	8.67[a] (6.41-11.7)	4.63[b] (2.07-10.3)
Education (reference low)		
High	0.72 (0.48-1.07)	0.63 (0.40-1.02)
Acculturation (reference low)		
High	2.04[a] (1.50-3.30)	1.90[c] (1.16-3.11)
Knowledge of ADs × education	–	2.41[c] (1.08-5.38)
Knowledge of ADs × acculturation	–	1.12 (0.54-2.34)
Age (reference 18-39)		
40−59	2.22[a] (1.50-3.30)	2.21[a] (1.49-3.29)
60 and older	4.65[a] (3.07-7.04)	4.53[a] (2.98-6.87)
Gender (reference male)		
Female	1.08 (0.80-1.46)	1.07 (0.79-1.45)
Ethnic origin (reference Chinese)		
Asian Indian	0.96 (0.62-1.51)	1.02 (0.65-1.59)
Korean	0.45[b] (0.27−0.75)	0.46[b] (0.28-0.77)
Vietnamese	0.75 (0.48-1.16)	0.74 (0.48-1.15)
Filipino	1.01 (0.62-1.62)	0.97 (0.60-1.57)
Other	0.92 (0.64-1.33)	0.66 (0.33-1.33)
Marital status (reference married)		
Not married	0.93 (0.64-1.33)	0.93 (0.65-1.34)
Financial status (reference able to make ends meet)		
Unable to make ends meet	0.68 (0.43-1.06)	0.68 (0.43-1.06)
Self-rated health (reference excellent/very good/good)		
Fair/poor	0.95 (0.59-1.53)	1.16 (0.71-1.91)
Nativity (reference US-born)		
Foreign-born	0.98 (0.56-1.68)	0.99 (0.57-1.72)

[a] $P < .001$.
[b] $P < .01$.
[c] $P < .05$.

financial status ($r_s = -0.05$; $P < .01$), and acculturation ($r_s = 0.11$; $P < .001$). Consistent with the pattern observed in descriptive and comparative analyses, those of advanced age and who were married, better off financially, and with higher levels of acculturation were more likely to have ADs. The correlations between education and acculturation ($r_s = 0.11$; $P < .001$) and between knowledge and completion of ADs ($r_s = 0.39$; $P < .001$) were significant but again were modest.

Logistic Regression Model of the AD Completion

Table 2 summarized results of logistic regression analyses on the AD completion. In the direct effect model, having knowledge of ADs and higher levels of acculturation significantly increased the odds of completing ADs. However, education did not have any significant effect. As for covariates, belonging to older age groups increased the odds of completing ADs (twice as likely in the 40-59 group and 4.6 times as likely in the 60 and older group), whereas being Korean reduced the odds by 55%.

In the subsequent model, the interaction between knowledge of ADs and education was found to be significant (odds ratio [OR] = 2.41; 95% confidence interval [CI] = 1.08-5.38; $P < .05$). When the sample was divided by the level of education, the subgroups presented a substantial difference in the relation between knowledge and completion of ADs. The translation of AD knowledge into completion was more likely in the high education group (OR = 13.2; 95% CI = 9.69-17.9; $P < .001$) than the low education group (OR = 4.35; 95% CI = 2.31-8.14; $P < .001$).

Discussion

Responding to the underutilization of ADs among racial/ethnic minorities[6-8] and the paucity of information on Asian Americans,[11-13] the present study explored the completion rate of ADs and its related factors in a sample of Asian Americans, recruited via culturally and linguistically appropriate strategies. Although limited in generalizability, nonprobability sampling methods are often the most effective approach to reaching members of the Asian American population.[22,23] It particularly serves as an effective method of recruiting "hard-to-reach" immigrants with language barriers.[24] Using survey questionnaires in several native languages, bilingual and bicultural recruiters and survey assistants, and community partners, the present study recruited many individuals who are often unrepresented in national surveys. It is notable that almost half (48.5%) of the sample used non-English versions of the survey questionnaire.

The rate of AD completion in the overall sample was about 12%. Compared to the rate observed in the US general population (26%-36%), our sample was 2 or 3 times less likely to have completed an AD. Within ethnic subgroups, Koreans had the lowest completion rate (5.6%), whereas Filipinos presented the highest (22.4%). Multivariate analysis also showed that when using Chinese as a reference group, being Korean substantially reduced the likelihood of having ADs. As a relatively new immigrant group, many Korean Americans encounter language and cultural barriers and lack access to resources and services.[24] The EoL care planning seems to represent one of the areas in need of outreach and dissemination efforts in Korean communities.

Unsurprisingly, age group differences were also evident. Being older significantly increased the odds of having ADs completed. The overall finding suggests the wide range of within-group variations and underscores the need to distinguish between the many Asian American subgroups. Indeed, with the lack of data on diverse Asian subgroups and generally smaller sample sizes within each subgroup if more than one is included,[22] ethnic group differences have often been unexplored in previous studies. Also, research on EoL care often focuses on older adults, restricting opportunities to compare the differences between the young and the old. Our finding identified Koreans and younger adults as groups to be prioritized in intervention efforts to promote AD completion.

About 20% of the sample had heard about ADs. Consistent with previous studies,[9,18,19] such knowledge was found to be a significant determinant of the AD completion. However, the

low level of knowledge of ADs in Asian Americans is of concern and calls attention to the need to disseminate AD-related information in Asian American communities. The modest correlation between knowledge and completion of ADs ($r_s = 0.39$; $P < .001$) emphasizes the discordance between knowing and doing. Furthermore, our finding suggests that knowledge in itself is not sufficient to enable individuals to make an appropriate action.

In bivariate correlations and the direct effect model, acculturation was significantly associated with AD completion; however, education was not associated. The latter finding was surprising since it is inconsistent with previous studies demonstrating the significant role of educational attainment in AD completion among diverse racial/ethnic groups.[8,19] One possible explanation is that the concept of EoL care planning and early decision-making is new and culturally challenging to most Asian Americans regardless of educational level. The finding could also be attributed to the fact that about 90% of the participants were foreign-born immigrants, most of whose education was completed outside of the United States. This unique characteristic of the sample may explain the differing effects generated by education and acculturation. Independent of the educational level, individuals who were accustomed to the mainstream American culture were more open to EoL issues and likely to complete ADs.

In addition to the direct effect model, we conceptualized education and acculturation as conditioning variables that might explain the knowing–doing gap and found partial support. The interaction term between education and AD knowledge was statistically significant, and further analyses indicated that knowledge was more likely to be linked to the completion among those with a higher level of education. Despite the absence of a direct effect of its own, education interacted with AD knowledge and served as a critical facilitator or enabler toward the action of AD completion. Education may help individuals better understand not only the concept of ADs but also the procedures involved in AD completion, which in turn offers confidence and ability to engage in personal medical decision-making.[25,26]

Given the cross-sectional design and nonrepresentative, regionally defined sample, caution should be exercised in drawing causal inferences and generalizing the findings to the larger population of Asian Americans. It should also be noted that the question on AD documentation used in the present study only pertained to the existence of durable power of attorney for health care. Future studies need to consider other types of ADs (eg, living wills) as well. Finally, the use of a single item in measuring the level of acculturation adds to the limitation. Given its complexity, acculturation should be measured with a multidomain instrument with good psychometric properties.

Despite these limitations, the present study contributes to the literature by exploring the status of knowledge and completion of ADs in a large sample of Asian Americans that included a wide range of age spectrum and diverse ethnic groups. The low levels of knowledge and completion rates of ADs observed in the sample are concerning and shed light on the importance of the intervention efforts. Our results reinforce the need for AD intervention strategies tailored to acculturation and education levels. It is recommended to use simple content that is understandable by persons with low literacy, evaluate cultural relevance of the materials, and translate information into the several Asian languages. Future studies should also delve into cultural beliefs and values that hinder or facilitate the knowledge and completion of ADs. Given the collectivistic cultural background of many Asian Americans and the multifaceted nature of the EoL issues, future endeavors need to include family as well as religious and health-care communities.

The underutilization of ADs has been a public health concern, and the present study demonstrates the particularly low rate of AD completion in Asian Americans. Our findings suggest implications for tailored interventions with respect to subgroups and strategies to be employed. Public health intervention should target not only the general Asian American population but also specific groups at greater risk.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Data collection was funded by the City of Austin's Asian American Quality of Life initiative (Contract No. 26-8275-39, PI–Yuri Jang, PhD).

References

1. Institute of Medicine. *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*. Washington, DC: National Academies Press; 2014.
2. Morhaim DK, Pollack KM. End-of-life care issues: a personal, economic, public policy, and public health crisis. *Am J Public Health*. 2013;1039(6):e8-e10.
3. Emanuel LL, Barry MJ, Stoeckle JD, Ettelson LM, Emanuel EJ. Advance directives for medical care—a case for greater use. *N Engl J Med*. 1991;324(13):889-895.
4. Bischoff KE, Sudore R, Miao Y, Boscardin WJ, Smith AK. Advance care planning and the quality of end-of-life care in older adults. *J Am Geriatr Soc*. 2013;61(2):209-214.
5. Brinkman-Stoppelenburg A, Rietjens JAC, van der Heide A. The effects of advance care planning on end-of-life care: a systematic review. *J Palliat Med*. 2014;28(8):1000-1025.
6. American Association of Retired Persons (AARP). *AARP Bulletin Poll: Getting Ready to Go: Executive Summary [on-line]*. Washington, DC: American Association of Retired Persons; 2008. Web site. http://assets.aarp.org/rgcenter/il/getting_ready.pdf. Accessed May 3, 2016.
7. Pew Research Center. More Americans discussing -and planning- end-of-life treatment. Web site. http://www.people-press.org/files/legacy-pdf/226.pdf. Published January 2006. Accessed May 10, 2016.

8. Rao JK, Andersen LA, Lin F, Laux JP. Completion of advance directives among U.S. consumers. *Am J Prev Med*. 2014;46(1):65-70.
9. Pollack KM, Morhaim D, Williams MA. The public's perspectives on advance directives: implications for state legislative and regulatory policy. *Health Policy*. 2010;96(1):57-63.
10. Dobbs D, Park NS, Jang Y, Meng H. Awareness and completion of advance directives in older Korean-American adults. *J Am Geriatr Soc*. 2015;63(3):565-570.
11. Ko E, Berkman CS. Advance directives among Korean American older adults: knowledge, attitudes, and behavior. *J Gerontol Soc Work*. 2012;55(6):484-502.
12. Lee MC, Hinderer KA, Friedmann E. Engaging Chinese American adults in advance care planning. *J Gerontol Nurs*. 2015; 41(8):17-25.
13. Doorenbos AZ, Nies MA. The use of advance directives in a population of Asian Indian Hindus. *J Transcult Nurs*. 2003; 14(1):17-24.
14. McAdam JL, Stotts NA, Padilla G, Puntillo K. Attitudes of critically ill Filipino patients and their families towards advance directives. *Am J Crit Care*. 2005;14(1):17-25.
15. Pew Research Center. The rise of Asian Americans. Web site. http://www.pewsocialtrends.org/files/2013/04/Asian-Americans-new-full-report-04-2013.pdf. Updated April 4, 2013. Accessed May 3, 2016
16. Hoeffel EM, Rastogi S, Kim MO, Shahid H. The Asian population: 2010. U.S. Census Bureau. Web site. https://www.census.gov/prod/cen2010/briefs/c2010br-11.pdf. Published March 2012. Accessed May 3, 2016.
17. Glanz K, Rimer BK, Viswanath K, eds. *Health Behavior and Health Education: Theory, Research, and Practice*. 4th ed. San Francisco, CA: John Wiley & Sons; 2008.
18. Alano GJ, Pekmezaris R, Tai JY, et al. Factors influencing older adults to complete advance directives. *Palliat Supp*. 2010;8(3): 267-275.
19. Ko E, Lee J. Completion of advance directives among low-income older adults: does race/ethnicity matter? *Am J Hosp Palliat Care*. 2014;31(3):247-253.
20. Berry J. Conceptual approaches to acculturation. In Chun K, Organista P, Marin G, eds. *Acculturation: Advances in Theory, Measurement, and Applied Research*. Washington, DC: American Psychological Association; 2002:17-37.
21. Chiriboga D. Some thoughts on the measurement of acculturation among Mexican American elders. *Hisp J Behav Sci*. 2004;26(3): 274-292.
22. Islam NS, Khan S, Kwon S, Jang D, Ro M, Trinh-Shevrin C. Methodological issues in the collection, analysis, and reporting of granular data in Asian American populations: historical challenges and potential solutions. *J Health Care Poor Underserved*. 2010;21(4):1354-1381.
23. Lee SK, Cheng YY. Reaching Asian Americans: sampling strategies and incentives. *J Immigr Minor Health*. 2006;8(3): 245-250.
24. Jang Y, Yoon H, Park NS, Chiriboga DA. The health vulnerability of immigrants with limited English proficiency: a study of older Korean Americans. *J Am Geriatr Soc*. IN PRESS.
25. Tay SY, Davison J, Jin NC, Kiat PL. Education and executive function mediate engagement in advance care planning in early cognitive impairment. *J Am Med Dir Assoc*. 2015;16(11):957-962.
26. Caralis PV, Davis B, Wright K, Marcial E. The influence of ethnicity and race on attitudes toward advance directives, life-prolonging treatments, and euthanasia. *J Clin Ethics*. 1993;4(2): 155-165.