



Predictors of Advance Care Planning Engagement Among Muslim Americans

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Advance care planning (ACP) enables people to discuss their physical, psychological, social, and spiritual needs before nearing death. Most literature examining the determinants of ACP engagement is limited and does not include minority faith communities in the United States, including Muslim communities. The purpose of this cross-sectional correlational study was to examine ACP engagement determinants among Muslims in the United States. Using the Social Ecological Model, we conceptualized the determinants of ACP engagement into intrapersonal, interpersonal, and community factors. The study self-administered questionnaires were distributed using convenience and snowball techniques. Multiple linear regression was used to predict ACP engagement. The total sample was 148 Muslim adults. The age range was 18 to 79 years. Among all tested factors, being Asian American, knowing a deceased person who had received aggressive or minimal medical treatments near death, being born in the United States, having knowledge and awareness about ACP, and being accepting of the American culture were the determinants of ACP engagement. Engagement in ACP is a multifactorial behavior. Several intrapersonal and interpersonal factors, but none of the community factors, were associated with ACP engagement among Muslim adults. Future ACP interventions targeted toward Muslim Americans should be planned with an understanding of the multifactorial nature of ACP engagement.

KEY WORDS

advance care planning, decision making, end of life, Islam, minority, Muslims, social-ecological

Shared decision making is essential to making health care-related decisions.¹ However, many people who have serious chronic illnesses become incapable of actively engaging in decision making at some point in the illness progression.¹ Given this challenge, in addition to the fact that the time of an individual's death is difficult to be predetermined accurately, some organizations who advocate for terminally ill patients have initiated efforts for supporting advance care planning (ACP).¹ Through self-determination, ACP involves a partnership between patients and their health care providers to make decisions that are congruent with their values and preferences.² The ACP process enables people to discuss their potential needs and concerns holistically, including physical, psychological, social, and spiritual needs, before they become unable to communicate.^{3,4}

Disparities in ACP engagement and low rate of ACP engagement have been commonly reported among racial and faith minority communities.⁵⁻¹⁰ Muslim Americans form a minority faith community whose engagement in ACP is as low as 13%.⁵ Disparities in ACP engagement have led to a substantial decline in the quality of end-of-life (EOL) care across American populations.¹

Understanding the determinants of ACP engagement provides a foundation for practical ways to promote engagement in ACP and to ensure that the receipt of high-quality EOL care is consistent with personal values and preferences.¹ In addition, identifying the determinants of ACP engagement is vital to developing culturally appropriate patient-centered health care programs that would promote engagement in ACP.^{11,12} Although identifying the determinants of ACP engagement has been the subject of intense debate within the scientific community, it has been agreed that engagement in ACP is a multifactorial behavior.¹ The purpose of this study was to examine the determinants of ACP engagement among Muslim community-dwelling adults living in the United States. The research questions were, among Muslim community-dwelling adults

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living in the United States, (1) what intrapersonal, interpersonal, and community factors are associated with ACP engagement and (2) what combination of intrapersonal, interpersonal, and community factors is associated with ACP engagement?

METHODS

Theoretical Framework

The conceptual framework for this current study was the Social Ecological Model (SEM).¹³ Through the lens of SEM, ACP engagement is a multifactorial behavior that can be explained by multiple levels of influence. Three constructs of SEM, which represent levels of influence, were used to conceptualize determinants of ACP engagement: (1) intrapersonal factors included sociodemographic characteristics, health status, EOL experiences, awareness of ACP, knowledge of ACP, and attitudes toward ACP; (2) interpersonal factors included social support and acculturation; and (3) community factors included community norms around ACP and decision-making style designated to a community.

Study Design, Sample, and Setting

A cross-sectional correlational design was used. Sampling procedures included convenience and snowball techniques. Inclusion criteria were self-identified as Muslim, 18 years or older, lived in the United States for at least 1 year, and able to read and write English. Participants were recruited from several Islamic community sites in North Carolina. Large Islamic organizations in 4 North Carolina counties, including the Piedmont Triad and Triangle midstate regions, were selected as recruitment sites. The large Islamic organizations included Islamic centers, mosques, clinics, halal grocery stores and restaurants, and Muslim student associations. Power analysis was performed using G*Power, version 3.1.9.3,¹⁴ and indicated a sample size of 122 participants needed for a simultaneous multiple regression model with a statistical power of 0.80, assuming a type I error rate of 0.05, a medium effect size of Cohen $f^2 = 0.15$, and the number of predictors of 26.

Measures

In the current study, concepts were examined using a structured self-reported questionnaire. The questionnaire consisted of items that operationally assessed ACP engagement as well as intrapersonal, interpersonal, and community factors. The Cronbach α coefficients for each instrument are presented in Table 1.

Intrapersonal Factors

A set of questions was used to assess selected socio-demographic characteristics. Health status was assessed using a single-item global self-rated health questionnaire.¹⁵ Awareness of ACP was measured by 1 yes-no question. Ex-

TABLE 1 Cronbach α Coefficients of the Tools Used in the Study

Variable	Tool	α in the Original Tool	α in This Study
ACP engagement	ACPES	.86	.89.
Knowledge about ACP	ACPES/ Knowledge subscale	.84	.95
Attitudes toward ACP	Pros	.86	.88
	Cons	.86	.85
Social support	MSPSS	.88	.94
Acculturation			
Adherence to Islamic identity	AIIS	.72	.69
Conformity to American norms	CANS	.79	.82
The community norms	ACP Values/ Belief	.89	.83
<i>Abbreviations: ACP, advance care planning; ACPES, Advance Care Planning Engagement Survey; MSPSS, The Multidimensional Scale of Perceived Social Support; AIIS, Adherence to Islamic Identity Subscale; CANS, Conformity to American Norms Subscale.</i>			

periences of decision making and EOL medical treatments were assessed by 6 dichotomous yes-no questions.¹⁶ Knowledge about ACP was assessed by using a 6-item subscale adapted from the Advance Care Planning Engagement Survey (ACPES).¹⁷ Attitudes toward ACP were measured by a 12-item tool developed by Fried and colleagues.¹⁸ The tool is divided into 2 equal sets of items, with one 6-item set measuring the pros of ACP and another 6-item set measuring the cons of ACP.¹⁸

Interpersonal Factors

Interpersonal factors included social support and acculturation. Social support was measured by the Multidimensional Scale of Perceived Social Support.¹⁹ The Multidimensional Scale of Perceived Social Support is a 12-item tool that measures a person's social support received from family, friends, and significant others.¹⁹ The Acculturation Scale for Muslim Americans was used to assess participants' acculturation.²⁰ The tool consists of the (1) Adherence to Islamic Identity Subscale (AIIS) and (2) Conformity to American Norms Subscale (CANS).²⁰

Community Factors

Community factors included (1) community norms and (2) decision-making style. Community norms were measured



by the ACP Values/Belief scale.¹⁸ Decision-making style was assessed using the Control Preferences Scale.²¹ Participants' responses were grouped into 3 categories: active (autonomous), collaborative, or passive.²¹

Outcome Variable (ACP Engagement)

The 4-item version of the ACPES (ACPES-4) was used to measure ACP engagement.¹⁷ The overall average score of ACPES-4 could range from 1 to 5, with a score of 5 indicating the highest engagement in ACP.¹⁷

Procedure

Participants were recruited with help from the community insiders at the recruitment sites. Study flyers, printed and electronic copies, were shared with the community members. Participants received a printed survey or a link to the digital survey (using Qualtrics^{XM} software). Five Muslim American adults participated in the pilot testing before the main study. For more details about data collection procedures, please refer to previous published study.⁵

Human Subjects Protection

Ethical considerations were assured throughout the study. The study was approved as "expedited" by the institutional review board of the university. The information sheet included the primary investigator contact information, the study timing and risks, and tactics to ensure anonymity and to minimize breaches of confidentiality. Remuneration in the form of a \$10 e-gift card was offered for each completed survey.

Statistical Analysis

Descriptive statistics of frequency, percentage, mean, and standard deviation were used to describe participants' characteristics and responses. For continuous variables, outliers and normality were examined in univariate analysis using boxplots, normal Q-Q plots, and Kolmogorov-Smirnov tests. Scores of ACP engagement, length of time living in the United States, and attitudes (pros, and cons) were transformed by using natural log method because the normality was violated. Dummy coding was performed for sociodemographic characteristics, decision-making and EOL experiences, and decision-making style. Associations between ACP engagement natural Log scores (ACPELs) and continuous variables were examined by the Pearson product-moment correlation; however, point-biserial correlation was used for dichotomous variables. Simultaneous multiple linear regression was performed to model ACP engagement, with all independent variables. Multiple imputations were used for missed average scores. All analyses were performed using SPSS v26 and Mplus software.^{22,23} A 2-sided *P* value <.05 was considered statistically significant.

RESULTS

Intrapersonal Factors

The total sample was composed of 148 eligible participants. The response rate for the printed surveys was 32.5% (39/120 were returned back). The number of the participants who completed the online survey was 109 individuals. The mean (SD) age was 36.7 (13.14) years. Most (62.2%) of the participants were immigrants, with an average length of time living in the United States reported as 16 years (SD, 1.04 years). Married participants comprised about two-thirds of the total sample (65.5%). The sample was diverse in terms of racial identity, with 77% self-identified as Asian, Black, Middle Eastern, or North African. Almost two-thirds (63.5%) were employed. Most (81.7%) reported having good or better health status. For more details about participants' characteristics, please refer to a previous published study.⁵

Approximately two-thirds (65%) of the total sample had experienced one of the measured decision-making and EOL experiences. Fewer than one-third had a serious illness or a major surgery or had made a health-related decision (26.4%, 32.4%, and 27%, respectively). The most commonly reported experience of decision making and EOL (37.8%) was knowing a person who had a bad death because of receiving either aggressive or minimal medical treatments.

The study participants reported a relatively low level of knowledge about ACP, with a mean (SD) score of 2.73 (1.20) of a possible score of 5. Attitudes toward ACP were relatively positive, indicated by a higher mean of ACP pros than that for ACP cons (3.68 and 2.81, respectively).

Interpersonal Factors

Social support among the study participants was relatively high, with an average of 64.93 (SD, 15.15) of a possible score of 84. However, the total score of social support varied, ranging from 12 to 84. The study participants reported high adherence to Islamic culture (the mean of AIIS was 19.4 of a possible score of 25). In contrast, the participants reported a relatively moderate adaptation of the American culture, with an average total score of 21.8 (SD, 7.18) of a possible score of 40 for CANS.

Community Factors

The average total score of the perceived community ACP norms varied among participants, with a range from 1 to 5. The study participants exhibited relatively positive values and beliefs regarding ACP, with a mean (SD) of 3.38 (0.81) of a possible score of 5 for an average of perceived community ACP norms. As can be seen in Table 2, most participants (60.8%) selected an active role as a preferred decision-making style. The remaining participants selected either the shared decision-making style or passive decision-making style (27% and 10.9%, respectively).



ACP Engagement

The ACPEL-4 average scores ranged from 1 to 4 of a possible score of 5. The participants exhibited a low engagement in ACP, as indicated by a low ACP engagement average scores (mean [SD], 2.03 [1.11]) (Table 4).

Associations Between ACP Engagement and Other Factors

Table 3 shows the results of Pearson product-moment and the point-biserial correlations. The factors that showed a positive significant linear relationship with ACPELs included length of time living in the United States, acculturation scores, ACP knowledge, being married, nonimmigrant status, Asian race, being employed, awareness about ACP, or previous decision-making and EOL experiences. Higher acculturation scores, being Middle Eastern, having an income lower than \$50 000, and having better health were significantly associated with lower ACPELs.

Predictors of ACP Engagement

Table 4 provides the results of simultaneous multiple linear regression models utilized to predict ACPELs when intrapersonal, interpersonal, and community factors might relate to ACP engagement. The percentage of variation in ACPELs explained by a regression model varied among all multiple linear regression models. Compared with all multiple linear regression models, the fourth model explained the highest variation in mean ACPELs, with approximately 66.3% of the variation ($R^2 = 0.663$). The second and third models explained the lowest variation, 25.8% and 2.1%, respectively. Overall, the results of this analysis show that among all tested factors, 5 intrapersonal factors, in addition to 1 interpersonal factor, were related to the ACPELs.

The results of the first model revealed that 5 intrapersonal factors were significantly related to the participants' predicted mean ACPELs. Whereas the predicted mean de-

creased for knowing a deceased person who received minimal EOL medical treatments, the predicted mean increased for those who were born in the United States, who had an awareness of ACP, who reported knowing a deceased person who received aggressive EOL medical treatments, and who had knowledge about ACP. The predicted mean ACPELs was 0.149 points lower for those who had known a deceased one who received minimal EOL medical treatments compared with those who had not known a deceased one who received minimal EOL medical treatments, adjusting for other intrapersonal factors ($b = -0.149, P = .044$). The predicted mean ACPELs was 0.204 points greater for those who were born in the United States versus those who were born in other countries, adjusting for other intrapersonal factors ($b = 0.204, P = .019$). The predicted mean ACPELs was 0.231 points greater for those who had heard about ACP compared with those who had not heard about ACP, adjusting for other intrapersonal factors ($b = 0.231, P = .002$). The predicted mean ACPELs was 0.250 points greater for those who knew a deceased one who received aggressive EOL medical treatments compared with those who did not know a deceased one who received such treatments, adjusting for other factors ($b = 0.250, P = .001$). For every additional point increase in the ACP knowledge mean score, the predicted mean of ACPELs increased by 0.118 points, adjusting for other factors ($b = 0.118, P = .048$).

The second model revealed that conformity to American norms acculturation subscale (CANS) mean score was the only interpersonal factor that significantly predicted participants' mean ACPELs. For every additional point increase in the CANS mean score, the predicted mean of ACPELs increased by 0.034 points, adjusting for social support and AIIS ($b = 0.034, P < .001$). Unlike the first and second models, the third model showed no factors that had a significant relationship with ACPELs. As seen in Table 4, no

TABLE 2 Participants' Preferred Decision-Making Styles (N = 148)^a

Response	Decision-Making Style	n (%)
I prefer to make the decision about what treatment I will receive.	Active role	37 (25.0)
I prefer to make the final decision about my treatment after seriously considering my doctor's opinion.	Active role	53 (35.8)
I prefer that my doctor and I share responsibility for deciding which treatment is best for me.	Collaborative role	40 (27.0)
I prefer to leave all decisions regarding treatment to my doctor.	Passive role	6 (4.1)
I prefer that my doctor makes the final decision about which treatment will be use, but seriously considers my opinion.	Passive role	10 (6.8)

^aData missing for 2 participants.



TABLE 3 Associations Between ACPE^a and Participants' Intrapersonal, Interpersonal, and Community Factors (N = 148)

Characteristic	r	Characteristic	r
Age	-0.001	Had a surgery in the past	0.309 ^b
Female vs male	-0.103	Made a health decision	0.523 ^b
Married vs otherwise	0.187 ^c	Know a deceased one who received ATs	0.415 ^b
Born in the United States	0.465 ^b	Know a deceased one who received MTs	0.228 ^b
Asian vs White	0.231 ^b	Know a person declared preferences	0.425 ^b
Black vs White	0.005	ACP knowledge	0.602 ^b
Middle Eastern vs White	-0.379 ^b	ACP attitudes (pros ^a)	0.150
Other race vs White	0.039	ACP attitudes (cons ^a)	0.105
Employed vs otherwise	0.363 ^b	Acculturation (CANS)	0.510 ^b
Income < \$50 000 vs ≥ \$50 000	-0.299 ^b	Acculturation (AII)	-0.254 ^b
Years in the United States ^a	0.319 ^b	Social support	0.132
Health status	-0.273 ^b	Norms	0.039
Religiosity	-0.028	Passive role vs shared role	-0.112
Heard about ACP vs otherwise	0.559 ^b	Active role vs shared role	0.098
Had a serious illness	0.262 ^b		

Abbreviations: ACPE, advance care planning engagement; ATs, aggressive treatments; MTs, minimal treatments; CANS, Conformity to American Norms Subscale; AII, Adherence to Islamic Identity Subscale.
^aTransformed scores (natural log).
^bCorrelation is significant with $P < .01$.
^cCorrelation is significant with $P < .05$.

community factor significantly predicted the participants' mean ACPELSs.

The fourth model was carried out to collectively predict study participants' intrapersonal, interpersonal, and community characteristics' associations with the mean ACPELSs. The results of the model indicated that in addition to all intrapersonal and interpersonal ACPELS predictors found in the previous models, Asian race became an additional ACPELS predictor ($P = .031$). The predicted mean ACPELS was 0.195 points greater for those who self-reported as Asian compared with those who self-reported as White, adjusting for other factors.

DISCUSSION

This novel study examined the potential intrapersonal, interpersonal, and community factors associated with ACP engagement behavior among Muslim community-dwelling adults living in the United States. Significant relationships between ACP engagement and several sociodemographic

characteristics, including income, length of time living in the United States, marital status, immigration status, race/ethnicity (Asian or Middle Eastern), and employment status, were found in this study. However, the effect of most of these characteristics on ACP engagement disappeared when their influences were adjusted for by intrapersonal, interpersonal, and community factors; exceptions were that being Asian or nonimmigrant did not disappear when adjusted. Although other studies have reported a lower ACP engagement among minority populations compared with Whites,^{11,24} this study reported that Asians were more likely to engage in ACP than their White counterparts. Although some researchers have found that race/ethnicity was an influential factor on ACP engagement, those researchers who controlled for the influence of other variables found that race/ethnicity alone could not explain variations in ACP engagement.^{8,11,12} For example, in a cross-sectional descriptive study, the researchers examined the effect of a combination of race/ethnicity and other sociodemographic variables on ACP engagement among



TABLE 4 Simultaneous Multivariable Linear Regression Analysis of ACPE of Muslims Living in the United States (N = 148)

Variable	n (%)	Mean ± SD	Model 1 (RQ 1)	Model 2 (RQ 2)	Model 3 (RQ 3)	Model 4 (RQ 4)
Social support		64.93 ± 15.15		0.002 (-0.005, 0.009) 0.453		-0.002 (-0.008, 0.004) 0.364
Acculturation/AIIS		19.6 ± 3.81		-0.007 (-0.036, 0.023) 0.552		-0.005 (-0.029, 0.019) 0.593
Acculturation/CANS		21.8 ± 7.18		0.034 (0.018, 0.050) <0.001		0.017 (0.003, 0.030) 0.002
Community norms		3.38 ± 0.81			0.008 (-0.127-0.143) 0.876	-0.030 (-0.142, 0.083) 0.498
Active DMR vs shared DMR	90 (60.8)				0.064 (-0.185-0.314) 0.505	-0.070 (-0.234, 0.095) 0.276
Passive DMR vs shared DMR	16 (10.8)				-0.167 (-0.549-0.214) 0.259	-0.091 (-0.360, 0.179) 0.387
Sex						
Females vs males ^{RC}	62 (41.9)		-0.046 (-0.207, 0.115) 0.461			-0.005 (-0.164, 0.154) 0.935
Born in the United States						
Yes vs no ^{RC}	56 (37.8)		0.204 (-0.020, 0.429) 0.019			0.248 (0.033, 0.463) 0.003
Marital status						
Married vs otherwise ^{RC}	97 (65.5)		0.047 (-0.141, 0.236) 0.518			0.046 (-0.143, 0.235) 0.530
Race/ethnicity						
Asian vs White ^{RC}	34 (23.0)		0.113 (-0.110-0.337) 0.191			0.195 (-0.038, 0.429) 0.031
African American vs White ^{RC}	18 (12.2)		-0.135 (-0.429, 0.159) 0.237			-0.042 (-0.329, 0.245) 0.704
Middle Eastern vs White ^{RC}	54 (36.5)		-0.090 (-0.317, 0.138) 0.312			-0.010 (-0.244, 0.225) 0.917

Continued



TABLE 4 Simultaneous Multivariable Linear Regression Analysis of ACPE of Muslims Living in the United States (N = 148), Continued

Variable	n (%)	Mean ± SD	Model 1 (RQ 1)	Model 2 (RQ 2)	Model 3 (RQ 3)	Model 4 (RQ 4)
Other race vs White ^{RC}	08 (5.40)		0.083 (-0.269, 0.435) 0.544			0.146 (-0.194, 0.486) 0.269
Employment status						
Employed vs otherwise ^{RC}	94 (63.5)		0.050 (-0.134, 0.234) 0.480			-0.009 (-0.190, 0.172) 0.897
Household income						
<\$50 000 vs ≥\$50 000 ^{RC}	76 (51.4)		-0.088 (-0.255, 0.079) 0.176			-0.094 (-0.251, 0.063) 0.123
Health status		3.41 ± 0.98	-0.054 (-0.141, 0.033) 0.113			-0.030 (-0.115, 0.055) 0.363
Religiosity		7.41 ± 1.59	0.025 (-0.024, 0.074) 0.190			0.036 (-0.012, 0.084) 0.053
Heard about ACP						
Yes vs no ^{RC}	78 (52.7)		0.231 (0.037, 0.424) 0.002			0.201 (0.007, 0.394) 0.007
Had a serious illness						
Yes vs no ^{RC}	39 (26.4)		-0.002 (-0.207, 0.203) 0.979			-0.022 (-0.217, 0.174) 0.776
Had a major surgery						
Yes vs no ^{RC}	48 (32.4)		0.077 (-0.114, 0.267) 0.299			0.118 (-0.069, 0.306) 0.104
Had a decision-making experience						
Yes vs no ^{RC}	40 (27.0)		0.051 (-0.264, 0.366) 0.675			0.005 (-0.296, 0.305) 0.969
Know a deceased one who received ATs						
Yes vs no ^{RC}	56 (37.8)		0.250 (0.050, 0.450) 0.001			0.234 (0.044, 0.425) 0.002
Know a deceased one who received MTs						
Yes vs no ^{RC}	56 (37.8)		-0.149 (-0.340, 0.042) 0.044			-0.164 (-0.349, 0.020) 0.022

Continued



TABLE 4 Simultaneous Multivariable Linear Regression Analysis of ACPE of Muslims Living in the United States (N = 148), Continued

Variable	n (%)	Mean ± SD	Model 1 (RQ 1)	Model 2 (RQ 2)	Model 3 (RQ 3)	Model 4 (RQ 4)
Know a person declared preferences						
Yes vs no ^{RC}	47 (31.8)		-0.057 (-0.291-0.177) 0.533			-0.060 (-0.283, 0.164) 0.491
Age in years		35.8 ± 12.95	0.093 (-0.204, 0.389) 0.421			0.182 (-0.115, 0.480) 0.115
Years in the United States		17.03 ± 12.54	0.022 (-0.088, 0.132) 0.602			-0.011 (-0.123, 0.102) 0.808
ACP knowledge		2.73 ± 1.20	0.118 (0.040, 0.196) <0.001			0.129 (0.047, 0.210) <0.001
ACP attitudes (pros)		3.68 ± 0.90	0.048 (-0.223, 0.318) 0.649			0.021 (-0.296, 0.339) 0.862
ACP attitudes (cons)		2.81 ± 0.98	0.015 (-0.210, 0.239) 0.868			-0.017 (-0.249, 0.216) 0.853
ACP engagement		2.03 ± 1.11				
Adjusted R ²			0.620	0.258	0.021	0.663
Abbreviations: ACPE, advance care planning engagement; RQ, research question; AIIIS, Adherence to Islamic Identity Subscale; CANS, Conformity to American Norms Subscale; DMR, decision-making role; ACPE, advance care planning; ATs, aggressive treatments; MTs, minimal treatments; RC, reference category. For models 1 to 4, the numbers presented are the slope, 95% CI, and P value.						

the diverse racial/ethnic group of Americans.⁸ The findings failed to support that race/ethnicity alone could explain variations in ACP engagement among study participants.⁸ Specifically, after the researcher adjusted for socio-demographic variables and perceived norms and attitudes toward ACP, the race/ethnicity variable became noninfluential.⁸ Similar findings were reported by Ko and Lee,¹² who found that the effect of race/ethnicity on the completion rate of ACP documents disappeared after controlling for the other personal and contextual factors.

Being born in the United States is a determinant of high ACP engagement in this study. This finding is similar to the findings in a study of ACP in Chinese immigrants, where researchers found that United States–born Chinese Americans were more likely to engage in ACP than those who were born outside the United States.²⁵ One explanation for this finding is that those who were born in the United States (nonimmigrants) might be more knowledgeable and aware of ACP than those who were not born in the United States (immigrants). In a study of ACP in Russian immigrants, researchers found that first-generation Russian

American immigrants had lower awareness and knowledge about ACP than nonimmigrant Russian Americans.²⁶ In addition, immigrant Russians were more likely to confuse living wills with the financial last wills and testaments.²⁶

In this study, self-reported health status was negatively associated with ACP engagement, which is similar to findings observed in previous research.^{11,27} However, after controlling for other factors, this relationship disappeared. This finding is similar to those in a retrospective cross-sectional study including 21 150 racially diverse American adults (18-64 years old), where the researchers found no relationship between health status and the completion of ACP documents.²⁸

The study results indicated that having the experience of a serious illness predicted ACP engagement, which is consistent with previous studies.^{8,16} Likewise, having an experience of knowing a deceased person who received aggressive or minimal EOL treatments was an ACP engagement determinant, which is consistent with other study findings.¹⁶ Poor health condition and experiencing EOL medical treatments might encourage people to consider planning for



their own end of lives, which means more engagement in ACP.²⁹

Similar to findings in previous ACP research, this study revealed that both ACP knowledge and awareness were positively associated with ACP engagement.^{12,30} For example, Ko and Lee¹² found that knowledge about ACP was one of the most influential factors on ACP engagement among a sample of 256 older adult Americans. Specifically, participants who reported a previous understanding of ACP were 15 times more likely to complete ACP documents than those who did not.¹² Similar findings were reported in a racial minority community.³⁰ A notably higher rate of ACP engagement (36.6%) was observed among Asian Americans who reported better knowledge of ACP compared with those who reported weak knowledge (5.3%).³⁰

This study indicated that neither attitudes toward ACP nor community norms were significantly related to engagement in ACP, which contradicts findings from other studies of American adults.^{8,12,31} Attitudes toward ACP is one of the critical factors shown to predict individuals' engagement in ACP behavior.¹² In 1 cross-sectional study, which included 256 racial minority older adults, the researchers found that per 1-point increase in attitudes score, there was an additional 20% increase in the likelihood of completion of ACP documents.¹² Likewise, McAfee et al⁸ noticed that attitudes toward ACP, as well as perceived norms, were the only significant determinants of people's intention to engage in ACP behavior.

As a central interpersonal factor for immigrants' lives, acculturation was investigated in this study for its impact on ACP engagement.^{30,32} Compared with American culture, Islamic culture was more prominent among the participants, indicating a higher adherence to Islamic traditions. However, greater acculturation with American culture contributed to higher engagement in ACP. Similar to this study's findings, greater acculturation was associated with a higher likelihood of engagement in ACP.³³ Similarly, Asian American adults who reported greater acculturation were significantly more likely to have ACP documents than those who had a lower level of acculturation (14.2% vs 6.8%).³⁰ Higher acculturation might lead to better knowledge and awareness of ACP, which might lead to greater engagement in ACP.^{30,33} In addition, acculturation might lead to better acceptance of discussions about ACP and death. For example, the second-generation immigrant Russians, who expressed high level acculturation, felt more comfortable than those from the first generation to speak with others about ACP and death.²⁶

PRACTICE IMPLICATIONS

An essential implication of this study is that health care professionals should be aware that Muslims in the United States have a lower engagement in ACP. This lower rate of ACP is related to immigrant status, lack of awareness

and knowledge about ACP, lack of experience with EOL situations, and stronger identification with Islamic culture. Health care providers, especially those who provide patient education and counseling, can address this disparity in ACP engagement in Muslim adults by initiating ACP discussions with Muslim patients in a culturally sensitive manner. To provide culturally sensitive ACP services, health care workers should be aware about Muslim teachings and traditions around ACP and EOL. Knowledge of ACP requirements in their health systems and laws in their states would be needed, as well as how patients and families can access those ACP resources. Providers' understanding of the factors that affect ACP engagement should facilitate initiating ACP discussions with the Muslim population and enhance the clarity for patient decision making. Thus, it is recommended that patient navigators, social workers, nurses, physicians, admission staff, and others should receive training and orientation in ACP for the Muslim population.

Appropriately tailored interventional and educational programs that address ACP awareness and knowledge should be initiated with consideration of the context of the Muslim population. Future research should provide multilanguage surveys. Collaborative efforts are needed with the involvement of the Muslim community and religious leaders, clergy services in hospital settings, nurses and other health care professionals, and social services to discuss innovative methods to mitigate ACP engagement disparity among the Muslim population.

CONCLUSION

In summary, this study is unique in terms of examining ACP engagement behavior based on a broad contextual perspective of influence derived from the SEM conceptual framework.¹³ Unlike previous studies that explored ACP engagement among American Muslims,³⁴ this study included a diverse sample of Muslim adults in terms of age, race/ethnicity, country of origin, native languages, and immigrant and health status. Several intrapersonal and interpersonal factors, but none of the community factors, were associated with ACP engagement among this study sample of Muslim community-dwelling adults. Health professionals have a responsibility to be knowledgeable and resourceful for Muslim patients in light of ACP engagement.

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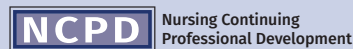
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