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Sociocultural Factors Associated with Awareness of Palliative Care and Advanced Care Planning among Asian Populations

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Objective: Underutilization of palliative care (PC) among racial/ethnic minorities remains consistent despite projected demand. The purpose of this study was to examine knowledge of palliative care and advanced care planning (ACP) and potential variations among subgroups of Asian Americans.

Design: A survey was conducted to collect information about awareness, knowledge, and perspective of PC and ACP in the southwestern region of the United States, from October 2018 to February 2019. A total of 212 surveys were collected from the general public at such places as health fairs, New Year celebration events, church, and community centers; 154 surveys were included in the descriptive and multivariate data analysis.

Results: About 46.1% and 40.3% participants reported having heard of palliative care and advanced care planning, respectively. The average score of the Knowledge of Care Options Instrument (KOCO) was 6.03 out of 11 and the average score of the Palliative Care Knowledge Scale (PaCKS) was 4.38 out of 13. Among those who have heard of PC, both Chinese (odds ratio (OR) .19 [CI, .05, .73]) and Vietnamese (.22 [.06, .84]) were less likely to have heard of palliative care compared with Filipinos (1.00). Among those who have ever heard of advanced care planning, age (.60 [.43, .84]) was negatively and education level (1.91 [1.18, 3.08]) was positively associated with awareness about advanced care planning. The majority of survey participants preferred family members to serve as their power attorneys.

Conclusion: The low levels of palliative care and advanced care planning awareness and knowledge in the diverse Asian groups living in the United States raise concerns and shed light on the critical need for culturally appropriate education programs. *Ethn Dis*. 2020;30(3):459-468; doi:10.18865/ed.30.3.459

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Introduction

According to the US Census Bureau, older adults aged >65 years will comprise 21.4 % of the US population by 2050.[1] Given this demographic shift and the increase in chronic conditions associated with advancing age, the need for palliative care services will continue to grow. However, underutilization of palliative care among racial/ethnic minorities remains consistent despite projected demand. Although Asian populations are one of the fastest growing ethnic groups in the United States, the rates of palliative care use at end of life (hospice care) are low.[2] From 2014 till 2017, Asian beneficiaries who received hospice care increased by 32.7%; however, Asians comprised only 1.7% of patients who utilized hospice care compared with 82.5% of non-Hispanic Whites.[2] To date, the limited research that has been conducted suggests that, due to lack of knowledge of hospice[3] and advance care planning,[4,5] Asians, compared with Whites, are less likely to access palliative care and consistently report receiving poorer quality palliative care.[6-8] In addition to informational barriers, attitudinal barriers are also responsible for precluding the use of advance care planning.[8] Cultural barriers include the belief that talking about death may cause it (fatalism),[9,10] challenges in initiating communications,[11] filial piety (the duty to respect and care for elders and parents), and potential feelings of failure if they allow someone else

to care for their aging parents.[4,9,12]

Although knowledge regarding the effects of sociodemographic factors on advance care planning is limited[12-14] recent research indicates that older age, female gender, White non-Hispanic ethnicity, higher income and education, and better health status are associated with completing advance care planning.[12,15-17] Given these findings, culturally diverse regions such as Nevada are particularly challenged to meet the needs of the burgeoning Asian population as they are the fastest growing demographic group, making up 11% of the population.[1] The US Census Bureau designates "Asian" as one race category[1] and studies focused on racial and ethnic disparities in palliative care often identify Asians as one group in comparison to others such as African Americans and Hispanics.[2,7] However, recent studies indicate that Asian subgroups have distinct socio-cultural, national, religious, and ancestral attributes that could affect decision making across the health care continuum.[8] Investigating the influence of sociodemographic factors on the knowledge of palliative care and advance care planning among Asian subgroups will be helpful in eliminating healthcare disparities, providing practical implications, research and policy.

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Given that very limited literature exists that differentiates need of palliative care among the various Asian groups, the purpose of this study was to examine overall level of knowledge of palliative care and advanced care planning among Asian populations, potential variations in the knowledge among subgroups within the Asian populations, as well as to identify factors associated with those variations.

Methods

Data

We conducted a survey to collect information about awareness, knowledge, and attitudes of palliative care and advanced care planning (ACP). We collected survey data at general public events (eg, health fairs such as ACDC Health Fair and Healthy Aging Fair; post-Sunday services meetings at Vietnamese and Korean churches; Chinese New Year Chinatown Fair, the Container Park Event, and La-Vang Church celebration) and focus group meetings with different groups (eg, the Nevada Chinese Association, Buddhist Tzu Chi Foundation, Asian Community Development Council, and Filipino Las Vegas) in the Southwestern region of the United States between October, 2018 and July 2019. For data collection at the focus group meetings, attendees filled out the survey before we started focus group discussions. A total of 212 surveys were collected, 172 (81.1%) were completed by Asian populations. After excluding missing values, 154 surveys were included in the data analysis. The study was approved by the University of Nevada at Las Vegas' institutional review board (IRB) prior to participant recruitment.

Survey Instruments

Five instruments, combined into one survey, were used in this study: a demographic survey created by the researchers, the Knowledge of Care Options instrument (KOCO),[17] the Palliative Care Knowledge Scale (PaCKS)[14]; the Hospice / Palliative Care Questionnaire[8]; and the Advance Care Planning Questionnaire.[18] Respondents were given the option to choose their preferred language (ie, English, Chinese, Korean, or Vietnamese) for the survey measures.

The researcher-developed demographic survey was used to collect socio-cultural data. The survey consisted of 13 questions related to age, sex, nationality / language, health conditions and self-reported health status.

The Knowledge of Care Options instrument (KOCO)[17] consists of 11 true-false items written at an eighth grade reading level and was developed to identify gaps in knowledge regarding an individual's care options of curative, palliative and hospice care. It

was developed based on the National Consensus Project for Quality Palliative Care definitions and was reviewed by a multidisciplinary panel of palliative care experts. Despite a degree of overlap, the three care options involve different approaches to health care; treatment decision-making may be hindered by lack of knowledge of options. The KOCO has a high internal consistency of .89 (Kuder-Richardson formula [KR-20]) and can capture change in knowledge of care options over time (signed rank test = 42.5, P<.006). While it was initially tested on cancer populations, the authors recommend its use among non-cancer populations and that it be tailored to fit various populations for generic or mixed samples. Most items were general questions about options for care. Three questions included reference to "cancer" and for purposes of our study, was replaced to read "disease." Scoring is based on the number of correct responses.

The Palliative Care Knowledge Scale (PaCKS)[14] is a 13-item measure developed to ascertain knowledge of palliative care. While the KOCO focused on understanding and differentiating knowledge about the different treatment options (curative, palliative, and hospice care) and when they would be appropriate, the PaCKS focused only on laypersons' knowledge of palliative care. The items consist of statements that may be rated true, false, or I don't know. The PaCKS incorporate the "I don't know" option to eliminate guessing, as a 50% chance of being correct exists in a true/false formatted scale. The total score is based on the number of correct responses (0–13) with "I don't know" responses scored as incorrect. The validity and reliability of the measure have been well-established with Cronbach alpha of .94.

The Hospice / Palliative Care Questionnaire[8] is a brief measure that examines attitudes and familiarity about hospice/palliative care, utilization, and interest in receiving further information. Questions were designed to be simple, easy to understand and complete, and to be appropriate for health literacy levels in the communities. The questionnaire includes six items for hospice and six for palliative care with answer options of yes/no and unsure. It has been used in large community settings of Asian and Hispanic adults and is available in four languages.

The Advance Care Planning Questionnaire[18] consists of five items developed to identify awareness and attitudes regarding advance care planning (ACP), preferences toward truth telling, health care autonomy, and end-of-life care and was originally used and validated in a large study of community-dwelling older Chinese adults. The questions were general and focused on whether the respondents have heard of ACP, their preference regarding making their own health care decisions, from whom they would like to hear news about any health conditions, and their preference regarding life-prolonging interventions.

Analysis

Descriptive analyses, such as frequency and percent, mean and standardized deviation, were conducted on individual questions in the survey. Six dependent variables derived from the survey instruments were analyzed using multivariable models to examine potential associated factors. Two questions from the Palliative Care Questionnaire ("Have you ever heard the term of palliative care" and "Like to receive more information about palliative care") were each measured by a dichotomous variable with a value of "1" indicating "Yes" and a value of "0" indicating "No" or "Unsure". Then, the total number of correct answers for KOCO and the total number of correct answers for PaCKS were analyzed, respectively. Furthermore, three questions from the Advance Care Planning Questionnaire were each analyzed. "Have you ever heard of advanced care planning before" and "are you willing to endure specific life-prolonging interventions (such as chronic ventilator and feeding tube) to avoid death if you had an irreversible condition" were measured by a dichotomous variable, respectively. Finally, the preference of power attorney was measured by a dichotomous variable with a value of "1" indicating a family member(s) and a value of "0" indicating others.

The key independent variables being used in the multivariable analyses were specific ethnic groups within Asian population, that is, dummy variables were created to indicate Chinese, Korean, and Vietnamese, and other Asians, respectively, whereas Filipino served as the reference group. Other variables being analyzed included age group (<30, 30–44, 45–59, ≥60), sex, marital status, education level, religion, having a chronic condition(s), non-English speaking, immigrated or born in the United States, and self-rated health status. To avoid multicollinearity problems

that were detected among the independent variables during the preliminary analysis, the step-wise approach was applied to obtain results from the parsimonious regression models.[19]

Results

Patient sociodemographic and cultural characteristics are shown in Table 1. Among the survey participants, 14.3% were Vietnamese, 25.3% were Koreans, 26.0% were Chinese, 28.6% were Filipinos; 69.5% were females; and the average age was 49.4 years old. More than half (59.7%) of the participants earned a bachelor or higher degree; 19.5 received high school or lower education; 39.0% were Catholic, 19.5% were Christian, 19.5% were Buddhist and 12.3% were without religion affiliation. About 86% immigrated to the United States and 41.6% did not speak English. About 64% of the participants had one or more chronic conditions such as hypertension and more than 70% rated their health as good. It also can be seen that group variations exist in some of those sociodemographic and cultural characteristics.

Overall, 46.1% of participants

Table 1. Participant sociodemographic and cultural characteristics (N=154)

	Chinese	Korean	Filipino	Vietnamese	Other Asian[a]	Total[b]
	n (%)	n (%)	n (%)	n (%)	n (%)	
Total	40 (26)	39 (25.3)	44 (28.6)	22 (14.3)	9 (5.9)	154 (100)
Age, mean, SD	53 (16.9)	57.1 (14.3)	43.44 (17.7)	41.5 (17.6)	46.3 (18)	49.4 (17.5)
Female	29 (72.5)	25 (64.1)	34 (87.1)	13 (59.1)	6 (31.6)	107 (69.5)
Marital status						
Single	6 (15)	1 (2.6)	19 (43.2)	9 (40.9)	1 (11.1)	36 (23.4)
Married or with a companion	23 (57.5)	32 (82.1)	19 (43.2)	10 (45.5)	6 (66.7)	92 (59.7)
Divorced or widowed	10 (25)	5 (12.9)	6 (13.6)	3 (13.6)	2 (22.2)	26 (16.9)
Education level						
High school or lower	12 (30)	8 (20.5)	5 (11.4)	4 (18.2)	1 (11.1)	30 (19.5)
Some college or technical school	8 (20)	4 (10.3)	11 (25)	7 (31.8)	2 (22.2)	32 (20.8)
Bachelor degree or higher	20 (50)	27 (69.2)	28 (63.6)	11 (50)	6 (66.7)	92 (59.7)
Income						
Less adequate	22 (57.9)	23 (59)	21 (50)	17 (77.3)	3 (33.3)	44 (28.6)
Adequate	11 (29)	11 (28.2)	12 (28.6)	3 (13.6)	3 (33.3)	86 (55.8)
More than adequate	5 (13.2)	5 (12.8)	9 (21.4)	2 (9.1)	3 (33.3)	24 (15.6)
Religion						
Buddhism	22 (55)	0 (0)	1 (2.3)	6 (27.3)	1 (11.1)	30 (19.5)
Catholic	1 (2.5)	13 (33.3)	33 (75)	12 (54.5)	1 (11.1)	60 (39)
Christian	5 (12.5)	14 (35.9)	6 (13.7)	0 (0)	3 (33.3)	30 (19.5)
Other	4 (10)	2 (5.1)	1 (2.3)	2 (9.1)	4 (44.4)	15 (9.7)
No religion	7 (17.5)	9 (23.1)	1 (2.3)	2 (9.1)	0 (0)	19 (12.3)
Immigration						
Born in US	6 (15)	3 (7.7)	8 (18.2)	1 (4.5)	4 (44.4)	22 (14.3)
Immigrated to US	34 (85)	36 (92.3)	36 (81.8)	21 (95.5)	5 (55.6)	132 (85.8)
Language						
English speaker	20 (50)	14 (35.9)	38 (86.4)	13 (59.1)	5 (55.6)	90 (58.4)
Non-English speaker	20 (50)	25 (64.1)	6 (13.6)	9 (40.9)	4 (44.4)	64 (41.6)
With 1 or more chronic conditions	22 (57.9)	31(79.5)	29 (65.9)	10 (45.4)	6 (66.7)	98 (63.6)
Health status						
Bad	3 (7.5)	2 (5.1)	10 (22.7)	1 (4.5)	0 (0)	16 (10.4)
Fair	6 (15)	8 (20.5)	7 (15.9)	7 (31.8)	0 (0)	28 (18.2)
Good	31 (77.5)	29 (74.4)	27 (61.4)	14 (63.6)	9 (100)	110 (71.4)

a. Other Asian includes Japanese, Native Hawaiian or other Pacific Islander, Mixed.
b. Data are expressed as frequency and percentage unless otherwise indicated.

had heard of palliative care, with Chinese having the lowest percentage of awareness (35%) and Filipino having the highest percentage (56.8%). The majority of the participants (70.8%) wanted to obtain more information about palliative care (Table 2). With regard to the number of correct answers of the KOCO instrument, the unadjusted average score of all participants was 6.03 out of the total score of 11, with Chinese having the highest average of 6.65 and Vietnamese having the lowest average of 5.55; and accordingly, the percentage of correct answers ranged from 50.5% (Vietnamese) to 60.5% (Chinese) across the four ethnic groups, with the overall average of 54.8%. The participants scored the PaCKS instrument even lower with a group average ranging from 3.50 (Vietnamese) to 4.72 (Korean); and accordingly, all of the four groups had <40% of correct answers, with the overall average of 33.7% (Table 2).

In the area of "heard of PC", as compared with Filipinos, both Chinese and Vietnamese were less likely to have heard of palliative care before (odds ratios [95% CIs]), .19 [.05, .73] and .22 [.06, .84] for Chinese and Vietnamese, respectively) whereas Koreans showed a similar likelihood (.98 [.36, 2.71]) (Table 3). Additionally, age group and immigration to the United States were negatively associated with having heard of palliative care. However, higher education level, no religion affiliation, and Buddhism were positively associated with "heard palliative care before." In addition, for "like to receive more information about PC", Koreans tended to say "yes" more often than Filipinos (4.60 [1.34, 15.76]) while Chinese and Vietnamese were similar to Filipinos (Table 3).

In the area of knowledge of care options and palliative care knowledge, results differ from the above. With regard to the KOCO score, as compared with Filipinos, Chinese obtained, on average, 1.08 points higher whereas both Koreans and Vietnamese received similar scores, respectively. Further, age group was negatively associated with the KOCO score while both education level and English as a second language were positively associated with the KOCO score. Specifically, when the age group moved up one level, the KOCO score, on average, reduced by .45 point; when the education level moved up one level, the KOCO score increased by. 42 point; and participants with English as a second language scored .83 points higher than native speakers (Table 3). With regard to the PaCKS, no differences were observed among the four Asian groups and the only significant associated factor was age group, that is, when the age group moved up one level older, the PaCKS score reduced by .48 point (Table 3).

In the area of advanced care planning (ACP), no difference in "ever heard of advanced care planning" was observed among the four Asian groups. Age was negatively associ-

Table 2. Participants' palliative care and care option awareness and knowledge

Variable	Chinese, n= 40	Filipino, n=44	Korean, n=39	Vietnamese, n=22	Total[a], N=154
Palliative care awareness	35	56.8	46.2	36.4	46.1
More palliative care information	67.5	59.1	89.7	77.3	70.8
Knowledge of Care Options [KOCO][8]					
KOCO score, mean (std.)	6.65(2.5)	5.73(2.39)	6.08(2.39)	5.55(2.61)	6.03(2.45)
% KOCO score, total=11	60.5	52.1	55.3	50.5	54.8
Palliative Care Knowledge [PaCKS][18]					
PaCKS score, mean (std.)	4.13(3.06)	4.68(3.33)	4.72(3.04)	3.5(2.61)	4.38(3.05)
% PaCKS score, total=13	31.8	36	36.3	26.9	33.7
Heard of advanced care planning	37.5	50	35.9	31.8	40.3
Life sustaining preference	20	22.7	35.9	27.3	26
Family member as 1st power attorney choice	70	75	92.3	59.1	76.6

a. Data are expressed as percentage unless otherwise indicated.

Table 3. Factors associated with palliative care awareness and knowledge

Variable	Odds Ratio	95% CI	P
Palliative care awareness (Have you ever heard of palliative care?)[8]			
Asian ethnic group			
Filipino (reference)	1	-	-
Chinese	.19	[.05, .73]	.02
Korean	.98	[.36, 2.70]	.97
Vietnamese	.22	[.05, .84]	.03
Age group	.5	[.33, .74]	<.01
Education	2.16	[1.27-3.69]	<.01
Religion			
Catholic	1	-	-
Buddhism	6.73	[1.63, 27.7]	<.01
No religion affiliation	3.87	[1.05, 14.25]	.04
Immigration			
Not an immigrant	1	-	-
Immigrated to US	.1	[.02, .41]	<.01
More palliative care information (Would you like to receive more information on palliative care?)[18]			
Asian ethnic group			
Filipino (reference)	1	-	-
Chinese	1.49	[.58, 3.85]	.41
Korean	4.6	[1.34, 15.76]	.01
Vietnamese	2.41	[.71,8.14]	.16
Immigration			
Not an immigrant	1	-	-
Immigrated to US	4.48	[1.45, 13.9]	<.01
KOCO Score (Knowledge of care options instrument [KOCO]): 11 questions[17]			
	Parameter Estimate	Standard Error	P
Asian ethnic group			
Filipino (reference)	-	-	-
Chinese	1.08	.52	.04
Korean	.34	.54	.53
Vietnamese	-.44	.61	.47
Age group	-.45	.18	.01
PaCKS Score (Palliative care knowledge scale (PaCKS): 13 questions[14]			
Asian ethnic group			
Filipino (reference)	-	-	-
Chinese	-.25	.64	.7
Korean	.31	.66	.64
Vietnamese	-1.22	.76	.11
Age group	-.48	.23	.04

Multivariable models controlled for age, sex, marital status, education level, religion, immigration status, non-English speaking, having a chronic condition(s), and self-rated health status. Except for the results of the four ethnic groups, only statistically significant results are displayed in this table.

ated with having heard of ACP, and education level was positively associated with it (.60 [.43, .84] for moving up the age group one level older and 1.91 [1.18, 3.08] for moving up the education one level higher) (Table 4). Similarly, no difference in "willing to endure specific life-prolonging interventions" was detected among the four Asian groups. Once again, age group was negatively associated with this variable. Interestingly, self-reported health status was positively associated with this variable, that is, when the health status moved up one level higher, the odds of "willing to endure specific life-prolonging intervention" increased by 74% (1.73 [1.08, 2.82]). Finally, no difference in selecting a family member(s) as the first preference of

Table 4. Factors associated with advanced care planning awareness and knowledge

Variable	Odds Ratio	95% CI	P
Advanced care planning awareness			
Asian ethnic group			
Filipino (reference)	1	-	-
Chinese	.97	[.38, 2.45]	.95
Korean	.84	[.33, 2.13]	.72
Vietnamese	.46	[.15, 1.39]	.18
Age group	.6	[.43, .84]	<.01
Education	1.91	[1.18, 3.08]	<.01
Life sustaining preference			
Asian ethnic group			
Filipino (reference)	1	-	-
Chinese	.83	[.25, 2.75]	.76
Korean	2.39	[.76, 7.54]	.14
Vietnamese	1.11	[.32, 3.91]	.87
Age group	.52	[.34, .79]	<.01
Health status	1.73	[1.08, 2.82]	.02
First power attorney choice as spouse/family member			
Asian ethnic group			
Filipino (reference)	1	-	-
Chinese	.69	[.26, 1.82]	.45
Korean	3.14	[.8, 12.33]	.1
Vietnamese	.38	[.13, 1.13]	.08

Multivariable models controlled for age, sex, marital status, education level, religion, immigration status, non-English speaking, having a chronic condition(s), and self-rated health status. Except for the results of the four ethnic groups, only statistically significant results are displayed in this table.

power attorney was found across the four Asian groups (Table 4).

Discussion

The purpose of this study was to better understand knowledge, awareness, and attitudes regarding palliative care and advance care planning among Asian populations. The results revealed that less than half of the participants in this study reported having heard of palliative care (46.1%) and advanced care planning (40.3%). Although this number is greater than the average awareness of palliative care among a nationally representative sample of US adults (29%)[20] and for the worldwide population (14%),[21] it still suggests there is limited awareness of palliative care and advanced care planning among Asian communities. This low level of awareness indicates that Asian respondents are underexposed to these services, despite well-documented benefits and efforts made to promote palliative care and advanced care planning programs. Moreover, our findings reveal that this low level of awareness may, at least partially, result from the low level of knowledge about palliative care (indicated by the low PaCKS score) and care options (indicated by the low KOCO score). It also implies that there is room for improvement in message framing and message dissemination strategies in palliative care and advance care planning promotional programs to increase the level of awareness among Asian target audiences.

While Asian groups are often not differentiated based on nationality and are considered one culture, this study found intergroup differences, highlighting that not all Asian groups have similar levels of knowledge and attitudes about PC and ACP. On average, all groups had higher level of awareness of PC (46.1%) than ACP (40.3%). Considering the significant benefits of ACP, more efforts can be made to promote ACP among the Asian groups studied. The Filipino group showed the highest awareness

level for both PC and ACP, but they had relatively lower level of knowledge about PC than other groups. This demonstrates the need for health education programs focused on palliative care in the Filipino study group to increase their knowledge about PC. The Chinese group, on the other hand, had the lowest level of awareness about PC, but they scored the highest in the knowledge of care options (KOCO) scale. This implies that there is great demand for diversified and customized message dissemination strategy for the Chinese group to increase their level of awareness about these issues. The Vietnamese group scored the lowest across levels of PC awareness, and similarly, scored the lowest in both KOCO and PaCKS. A distinguishing factor, which may provide insight into low scores earned by Vietnamese, is the high rate of immigration to the United States, which was negatively associated with awareness of PC in the total sample. An overwhelming 95.5% of the Vietnamese group had immigrated and were not born in the United States. Thus, this group may need to be the priority target for health education programs on PC and ACP. The Korean group had relatively high awareness and knowledge about PC and ACP and the highest level of wanting more information, thus consistent efforts should be made to increase their awareness and knowledge about the topic. In contrast, Pan and colleagues found their Korean group was significantly less likely to want information.[8]

The results revealed that less than half of the participants in this study reported having heard of palliative care (46.1%) and advanced care planning (40.3%).

Overall, the KOCO scores were higher than the PaCKS. This suggests that Asians who participated in this study know more regarding what care options they may have, but they know less about specific details and benefits of palliative care. All Asian groups had high levels of willingness to receive more information about PC. Therefore, health care providers and policy makers need to diversify message channels and customize the educational materials for different Asian groups to meet their needs.

Among the demographic factors, age group was negatively associated with awareness of PC and ACP. Consistent with other studies,[18] our findings indicate that older people may be less aware of PC and ACP. Age group was also negatively associated with KOKO and PaCKS scores. This indicates that the older age group had less knowledge of their care options and palliative care in general. In contrast, past studies reported that age is positively associated with motivation to complete advance care planning[12] and knowledge about the type of care offered by palliative treatment and hospice care[22,23] however, these studies included White and African American participants and did not differentiate Asian participants. Other studies of Asian sub-groups found that higher acculturation and education were associated with more positive attitudes regarding end-of-life planning and communication.[6]

The underlying factors for the low level of awareness and knowledge about PC and ACP among older Asians in this study requires further investigation. Among the study group, 85.8% were immigrants from their original countries to the United States, and may keep their original cultural norms about death, which may lead to the reluctance to have conversations about end-of-life, and this may translate to their lower level of awareness and knowledge about PC and ACP. Filipino Americans, for example, generally believe in bahala na, leaving one's fate to God, and suffering should be endured as it is "God's will."[23] Other Asian cultures subscribe to fatalism (accepting pain as inevitable), or believe that talking about death may cause it; these beliefs may be more prevalent among older age groups who immigrated to the United States. This implies that tailored educational materials should be developed for older age groups in immigrant Asian communities.

The concept of advance care planning and early decision-making is new and culturally challenging to most Asian populations, particularly those with low education attainment.[24,25] The similar findings in this study could also be attributed to the fact that about 80% of the participants were foreign-born immigrants. Individuals who are accustomed to mainstream American culture are

more open to end of life (EOL) issues and likely to be aware of PC and to complete advanced directives.[26] Culturally sensitive education may promote better understanding of EOL issues and serve as a critical enabler toward ACP awareness, which in turn can increase confidence and ability to engage in completing ACP.[24,26]

Study Limitations

Several limitations should be considered when interpreting the study findings. This study used a cross sectional design and involved a regionally defined sample and limited sample size. Therefore, caution should be used when drawing causal inferences. For example, the limited sample size might not be able to detect some differences across the ethnic groups, which means that our findings might underestimate some cross-group variations among Asian groups. Future studies may use a larger sample size to further analyze those potential differences.

Conclusions

The present study contributes to the literature by adding a perspective that reveals a low level of palliative care awareness and knowledge for a diverse Asian group and highlights differences among the Asian nationalities. While health and demographic data often categorize and represent aggregate Asian data, the US Asian population is, in fact, diverse, representing more than 20 countries with unique cultures, languages, and immigration histories.[27] Findings from our study underscore the need to approach culturally appropriate education programs based on the uniqueness of the diverse Asian nationalities. The low levels of palliative care awareness and knowledge in the present study sheds light on the critical need for culturally appropriate education programs that avoid a "one size fits all" approach. Our findings reinforce the need for palliative care awareness and knowledge strategies tailored to age groups, education levels, and the different Asian cultures.

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Conflict of Interest

No conflicts of interest to report.

Author Contributions

Research concept and design: Shen, Dingley, Yoo; Acquisition of data: Shen, Dingley, Yoo, Rathi, Frost; Data analysis and interpretation: Shen, Dingley, Rathi, Kim, Kang; Manuscript draft: Shen, Dingley, Rathi, Kim; Statistical expertise: Kang; Acquisition of funding: Shen, Yoo; Administrative: Shen, Dingley, Rathi, Kim, Kang, Frost; Supervision: Shen, Dingley

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