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# Chinese Diaspora Communities' Knowledge of and Engagement with Advance Care Planning: A Systematic Integrative Review

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## Abstract

**Objectives:** To synthesize evidence regarding Chinese diasporas' understanding, experience, and factors influencing engagement with advance care planning. **Methods:** A systematic integrative review using content analysis. Seven electronic databases (Embase, CINAHL, SCOPUS, Web of Science, Medline (OVID), PsycINFO, and The Cochrane Library) and gray resources were searched for studies from January 1990 to March 2022. Study quality appraisal was undertaken. **Results:** 27 articles were identified and rated as moderate to good. Two overarching and interrelated themes were identified, “**Awareness and knowledge**” and “**Engagement with advance care planning.**” There are low levels of awareness, knowledge and engagement with advance care planning for Chinese diaspora. Findings highlight that this is influenced by two key factors. First, the geographic context and legal, cultural, and social systems within which the Chinese diasporas are living act as a potential catalyst to enhance awareness and engagement with advance care planning. Second, aspects of Chinese diasporas' original culture, such as filial piety and a taboo surrounding death, were reported to negatively affect the promotion and engagement of advance care planning. **Significance of Results:** Chinese diasporas are intermediaries between two divergent cultures that intertwine to strongly influence engagement with advance care planning. Hence, a bespoke culturally tailored approach should be accommodated in future research and practice for Chinese communities in multicultural countries to further advance palliative and end-of-life care awareness among this group.

## Keywords

advance care planning, Chinese diaspora, Asian continental ancestry group, culture, knowledge, engagement, review

## Introduction

In the last decade, public health palliative care has gained recognition and momentum globally, and has been advocated for communities to improve the experience of health, dying, and bereavement.<sup>1</sup> Advance care planning (ACP), traditionally advocated for the elderly or those diagnosed with a life-limiting condition, has seen a gradual shift in global and national policy<sup>2,3</sup> encouraging people to think about planning ahead regardless of their age or condition.

Advance care planning allows individuals to define, plan, and record their wishes and preference for future medical treatment and care.<sup>3</sup> It aims to help ensure individuals obtain the care they desire that is consistent with their values, goals and preferences when they no longer have the capacity to make any care decisions for themselves.<sup>3</sup> In the last two decades, Western cultural practices have led the understanding, delivery, and practice of advance care planning across the world.<sup>4,5</sup> This may have resulted in many

such initiatives being Western-driven with little consideration of the needs of different ethnic groups.

However, international migration and diasporic populations have led to rapidly changing demographic characteristics across Western society. Debates on the accessibility and applicability of health care by different groups have raised questions regarding the provision of culturally appropriate healthcare in general.<sup>6,7</sup> Evidence suggests that mainstream healthcare and

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**Table 1.** Search Terms.

Combination of Medical Subject Headings (MeSH) and keywords—Advance care planning and Chinese or Chinese diaspora, by using Boolean operators.

Key search concepts	Example terms
Advance care planning	“advance care planning” [MeSH] OR “advance care planning” [keyword] OR “advance*care plan*” [keyword] OR “advance health care plan” [keyword] OR “advance medical plan” [keyword] OR “advance healthcare plan*” [keyword] OR “advance health-care plan*” [keyword] OR “advanced medical plan*” [keyword] OR “advance discussions” [keyword] OR “advance directives” [MeSH] OR “advance directive*” [keyword] OR “advanced directive*” [keyword] OR “written advance directive*” [keyword] OR “advance*directive*” [keyword] OR “advance directives” [keyword] OR “advance*directive* [keyword] OR “Living Wills” [MeSH] OR “living will*” [keyword] OR “End of life planning” [keyword] OR “End of life conversation*” [keyword] OR “End of life decision making” [keyword]
Chinese	“Chinese” [MeSH, keyword] OR “Asian Continental Ancestry Group” [keyword]
Chinese diaspora	“Chinese immigrants” [keyword] OR “Chinese immigrant” [keyword] OR “Chinese migrant” [keyword] OR “Chinese diaspora” [keyword] OR “Chinese American*” [keyword] OR “Chinese immigrant health” [keyword] OR “Chinese-Speaking” [keyword] OR “Chinese Australian*” [keyword] OR “Asian American*” [keyword]

palliative care often do not serve ethnic populations effectively<sup>7-9</sup> with barriers related to culture, language, awareness, and adaptation reported.<sup>7,10,11</sup>

The Chinese community represents the biggest and fastest-growing ethnic community around the globe,<sup>12</sup> yet engagement with advance care planning remains low,<sup>13</sup> similar to that of other ethnic minorities.<sup>14-16</sup> Some authors attribute this to differing cultural, sociodemographic, and health-related factors.<sup>13,17</sup> Lee et al<sup>17</sup> in their review, emphasized the appropriateness and importance of collectivism and familism as major decision-making influences among Chinese people from Eastern and Western cultures rather than individual autonomy and self-determination.

However, there are few advance care planning public health campaigns exist that are tailored to the multicultural society in which they live.<sup>18,19</sup> It therefore could be argued that the developmental experiences of advance care planning in Western countries may not be aligned with ethnic minorities. A previous review by Jia et al<sup>13</sup> systematically synthesized the evidence regarding advance care planning among Chinese communities and recommended the need for campaigns to consider the Chinese communities’ traditional social norms and culture. However, to date, there is a lack of evidence exploring the empirical and gray literature to inform a fuller picture relating to Chinese diaspora engagement and understanding of advance care planning. Consequently, this study aims to review and synthesize the evidence regarding Chinese diasporas’ understanding and experience of advance care planning, and factors influencing their engagement with it.

## Methods

### Design

A systematic integrative review was conducted, guided by Whittemore and Knaf<sup>20</sup> methodological approach enabling the integration of evidence from multiple designs.<sup>21</sup> This

review was reported in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.<sup>22</sup>

### Search Strategy

A comprehensive literature search was carried out for peer-reviewed papers published in English and Chinese from January 1990 to March 2022. The start date reflects the introduction of terms relating to advance care planning, such as advance directives and living wills.<sup>23</sup> Seven bibliographic databases were searched (Embase, CINAHL, Web of Science, Medline (OVID), SCOPUS, PsycINFO, The Cochrane Library (Cochrane Central Register of Controlled Trials, Cochrane Methodology register).

The electronic search was supplemented by hand searches of gray literature from the reference lists of included studies and other gray resources including EThOS, ProQuest Dissertations and Theses Global, OpenDOAR, and GreyNet. The search terms included a combination of two key terms, namely “advance care planning,” “Chinese Diaspora,” combined with medical heading terms and text words (see table 1). As “advance care planning” and “advance directive” are terms used interchangeably,<sup>3</sup> the term “advance directive” and related terms were also included to assure the recall ratio. Search strategies were tailored for each bibliographic database (see Appendix 1 for CINAHL search strategy).

### Inclusion and Exclusion Criteria

Articles were included if they presented empirical studies about advance care planning among Chinese diasporas. There was no restriction by country. Table 2 provides detailed inclusion and exclusion criteria.

**Table 2.** List of Eligibility Criteria.

Inclusion	Exclusion
Original research.	Articles focused on euthanasia, physician-assisted suicide with no discussion of advance care planning.
Chinese diaspora $\geq$ 18 years old.	Systematic or literature reviews regarding advance care planning for Chinese diasporas; however, the reference lists of any literature reviews (of any design) retrieved in the search will be manually searched for primary studies to include.
Focused on advance care planning (eg, Chinese diasporas' understanding and experience on advance care planning, barriers and facilitators drive for Chinese diasporas' engagement with advance care planning).	Conference abstracts, notes, editorials, letters, opinion pieces, protocols, individual study.
Chinese diaspora as majority participants $\geq$ 50% in original study or clear data analysis specifically for Chinese diaspora group.	
Written in English or Chinese.	
Published between 1990 and 2022.	
Articles available in full text.	

### Selection Process

The results of searches from each database were exported and managed by Zotero software where duplications were removed. A two-step process was used for screening:

1. two reviewers (ZL & FH) independently read and eliminated studies from the title and abstract based on the identified inclusion and exclusion criteria. All articles that were considered relevant by each reviewer were included in the full text evaluation.
2. two independent reviewers evaluated the full-text studies based on inclusion to identify the final articles included in this review.

Any discrepancies in study selection were discussed by both reviewers and adjudicated by a third reviewer (EB). To enhance rigor, the third reviewer screened a random selection of 10% of the included papers. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram<sup>22</sup> was used to record the screening process at each of the steps of the review process for visual representation. The search resulted in a sample of 1657 papers, with 27 studies included (see Figure 1).

### Critical Appraisal

Articles were assessed for risk of bias independently by two reviewers (ZL & FH) using a range of appraisal tools aligned to the studies<sup>24,25</sup> (see Appendix 2). Mixed Methods Appraisal Tool (MMAT) is a 5-item assessment tool that has been widely used in previous studies for its characteristics of ease of use, efficiency, and reliability. Appraisals by MMAT were presented with detailed information on each criterion rather than the total score of the MMAT for each study guided by the tool's developer.<sup>25</sup> Appraisals by Joanna Briggs

Institute Critical Appraisal Tools were presented and classified as High (a score below 49%), Moderate (50-74%), and Low (75 +%) by accounting for the number of "yes" answers and expressing them as a percentage of questions in the tool. The quality of papers were assessed as "high" in 5 qualitative, 9 quantitative, and 1 mix-method studies, "Moderate" in 7 qualitative and 5 quantitative studies (see appendix 2). All of these 27 studies were included in the synthesis.

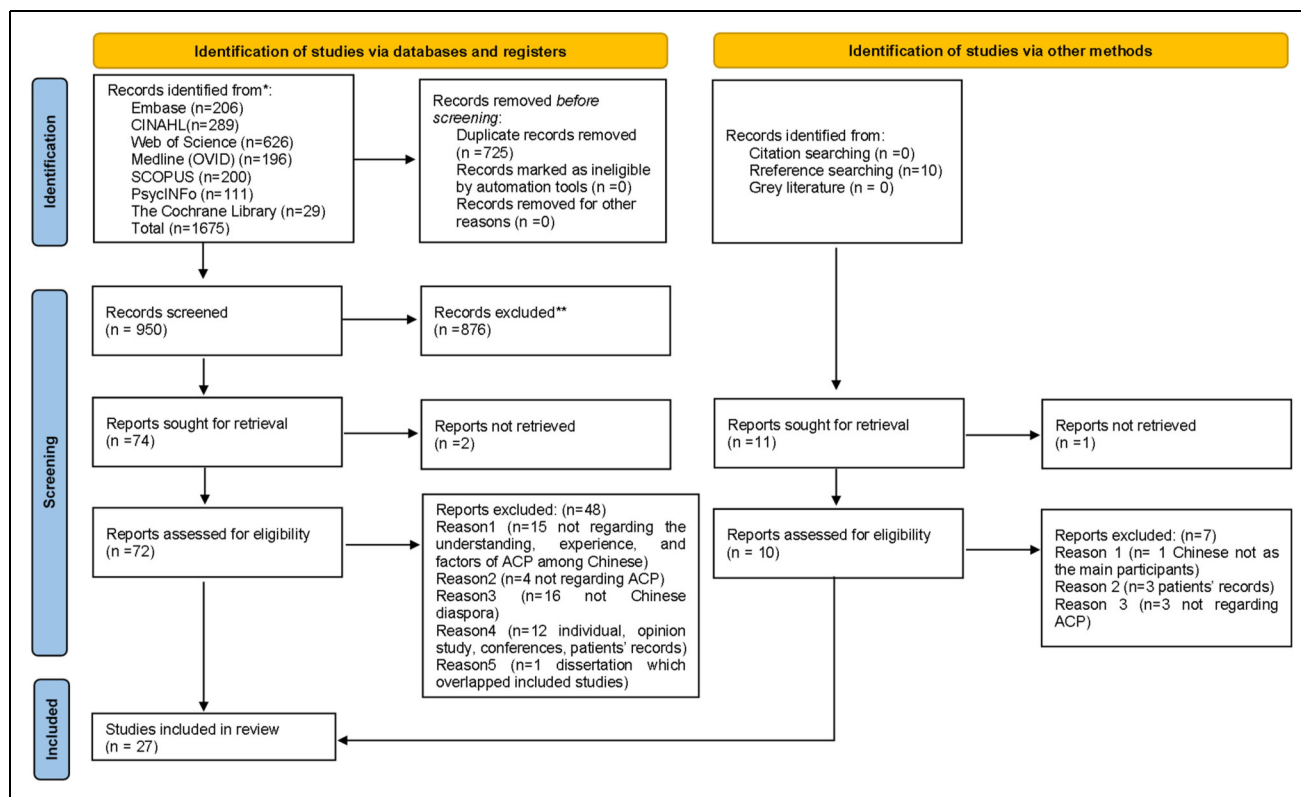
### Data Extraction and Analysis

Data were extracted independently by two reviewers (ZL & FH) using a generic data extraction template and disagreements were mediated by a third reviewer (EB) (Table 3). Key extracted information includes (a) author and location of research; (b) year of publication; (c) aims, objectives, and/or research questions; (d) characteristics of study population; (e) methodology; (f) major findings and information relevant to research questions; and (g) limitations. The data extraction process was based on the four stages identified by Whittemore and Knafl<sup>20</sup>: data reduction, data display, data comparison, and conclusion drawing. Given the diversity of methodologies, the data were synthesized using content analysis which facilitates the identification of patterns, commonalities, and finally were contrasted in line with shifting perspectives to allow critical analysis of data.<sup>26</sup> The initial analysis was completed by the lead author and the themes were reviewed for accuracy by the team.

## Results

### Study Characteristics

A total of 27 studies comprised twelve qualitative studies,<sup>18,27-37</sup> fourteen quantitative<sup>38-51</sup> and one mixed-method study.<sup>52</sup> Qualitative research design used a combination of in-depth interviews,<sup>18,28,29,32-35,37</sup> focus groups,<sup>18,27,30,31,36</sup> and informal field observation.<sup>34</sup> Quantitative studies adopted cross-sectional,<sup>38-44</sup>



**Figure 1.** PRISMA 2020 flowchart for study selection.

longitudinal<sup>45</sup> and non-randomized experimental designs.<sup>46-51</sup> The mixed-method research design included both survey and in-depth interviews.<sup>52</sup> Study characteristics and summary are provided in table 3.

While studies were internationally spread they mainly represented the United States (n = 18),<sup>27,30,31,33,34,37,38,40-44,47-52</sup> followed by Singapore (n = 4),<sup>18,29,39,46</sup> Australia (n = 2),<sup>32,45</sup> Canada (n = 1),<sup>28</sup> Malaysia (n = 1)<sup>35</sup> and cross-country included Taiwan, Hong Kong, Singapore, and Australia (n = 1).<sup>36</sup> No studies were undertaken in the UK.

3566 participants were included within the 27 papers, of whom 378 were patients, 39 caregivers of people with life-limiting conditions, and 40 were healthcare professionals. The majority of participants were members of the Chinese general public.

Chinese general public participants were mainly recruited from local Chinese community-based settings (n = 18),<sup>27,28,30-34,38-40,42-45,47-49,52</sup> using a mixture of bilingual materials (English and Mandarin or Cantonese). Five papers focused on patients with life-limiting illnesses or early cognitive impairment (n = 5)<sup>18,37,41,46,50</sup> and one paper focused on caregivers (n = 1).<sup>29</sup> Three of the twenty-seven papers included Chinese health professionals as one group of participants.<sup>18,33,34</sup> The care setting for recruiting patients, caregivers, and healthcare professionals was diverse, including healthcare institution, primary care practice, tertiary hospital, cancer center, and hospice.

Advance directives were the focus of 3 studies, and advance care planning was the focus of the remaining studies. Three

advance directive studies<sup>27,43,48</sup> addressed a set of outcomes: advance directive related knowledge, beliefs and attitudes, intention, completion, and associated factors. The remaining studies regarding advance care planning were reported in detail.

Two different but overlapping main themes were identified which reflect Chinese diaspora engagement with advance care planning; namely, awareness and knowledge were identified in 10 studies,<sup>18,30-32,39,41,45,47,50,51</sup> and engagement with advance care planning in 20 studies.<sup>29-42,44-47,49,52</sup>

### Theme 1: Awareness and Knowledge

Ten studies<sup>18,30-32,39,41,45,47,50,51</sup> reported on the levels of awareness and knowledge regarding advance care planning among Chinese diasporas. Combined findings indicate levels of advance care planning ranged from low<sup>18,30-32,39,41,45,50</sup> to moderate.<sup>47,51</sup>

However, levels were influenced by a range of demographic and socio-cultural factors. For example, sociodemographic attributes such as education level, acculturation stage, language barrier, and age group were identified as key influencing variables.<sup>32,38,39,41,45</sup> For example, Gao et al<sup>38</sup> in a study of Chinese American elders (n=385) using a cross-sectional survey, found that participants with higher acculturation levels or with a college education were more likely to know about advance care planning/advance directive. Similar findings have also been noted by Yap et al<sup>32</sup> who undertook a qualitative study adopting semi-structured interviews with 30 Chinese

**Table 3.** Data Extraction Table.

Qualitative studies					
Authors, Year	Aim (s)	Country and setting	Subjects	Design	Major findings regarding ACP
Braun and Nichols <sup>27</sup>	To learn more about Asian American approaches to death and dying.	United States, community	Chinese American N=5 Age: not stated	Focus groups	<ol style="list-style-type: none"> <li>The completion of AD is becoming more acceptable and popular.</li> <li>The views of death influenced by Confucianism, Taoism and Buddhism.</li> </ol>
Bowman and Singer <sup>28</sup>	To examine attitudes of Chinese seniors toward end-of-life decisions.	Canada, community	Chinese Seniors N=40 Average age: 73 Age range: 60–95	Ethnography, semi-structured interviews, constant comparisons	<ol style="list-style-type: none"> <li>Factors: inter-related concepts: hope, suffering and burden, the future, emotional harmony, life cycle, respect for doctors, and the family.</li> </ol>
Ng et al <sup>29</sup>	To examine the knowledge, attitudes, and perceptions of ACP in caregivers of patients with advanced illness in Singapore.	Singapore, Hospital and hospice	Chinese N=1 Mean age: 43.2	Semi-structured interviews, content analysis	<ol style="list-style-type: none"> <li><b>Awareness:</b> all participants had low awareness of ACP and the AD.</li> <li><b>Attitudes:</b> ACP is important, all participants would consider ACP for themselves.</li> <li><b>Perceptions:</b> perceived benefits of ACP were that it respects autonomy, guides patients and families, and reduces burden of decision-making near the end-of-life. Involvement of the family unit and physicians in ACP were viewed as important.</li> <li><b>Barriers:</b> non-disclosure of diagnosis, uncertainty about when and how ACP should be discussed, and cultural taboos. Some were ambivalent about discussing ACP with their loved ones, especially when their loved ones were of an older generation.</li> </ol>
Yonashiro-Chio et al <sup>30</sup>	To explore the knowledge, attitudes, and preferences of older Chinese Americans toward ACP.	United States, community	Chinese American N=34 Age range: 70.6% participants were aged 65 and older	Grounded theory, focus groups, thematic analysis	<ol style="list-style-type: none"> <li><b>Knowledge:</b> knowledge of and experience with ACP and end-of-life decision-making varied according to focus group.</li> <li><b>Preferences:</b> Chinese older adults preferred to use indirect communication strategies stating their wishes, and informal contexts. Parents should initiate EOL discussions.</li> <li><b>Factors:</b> health status.</li> </ol>
Lee et al <sup>31</sup>	To explore the beliefs, facilitators, and barriers of ACP discussion among different generations of Chinese Americans.	United States, community	Chinese Americans N=60 Average age: 53 Age range: 29-79 75% were females OG: aged 65 years or above (n=30) YG: below 65 years old (n=30)	Theory of planned Behavior; focus groups, framework analysis	<ol style="list-style-type: none"> <li>Older and younger Chinese participants had different beliefs in the norm and control related to ACP discussions, but not in the belief of attitudes about ACP discussions.</li> <li><b>Attitude:</b> OG and YG both have positive attitudes about ACP.</li> <li><b>Factors:</b> Facilitators: prior experience related to death and dying, community outreach programs (Both group), indirect approach (OG). Barriers: Lack of appropriate opportunity for ACP discussion (Both group), knowledge of ACP; language barriers, culturally sensitive AD (OG), burdens of making decisions (YG).</li> </ol>
Yap et al <sup>32</sup>	To identify factors that influence the engagement of Chinese Australians with advance care planning.	Australia, community	Chinese Australians N=30 Age range: over 55 Average age: 73	Grounded theory, semi-structured interviews, thematic analysis	<ol style="list-style-type: none"> <li><b>Knowledge and awareness:</b> 22 of 30 participants reported that they have not heard of or seen a brochure regarding ACP.</li> <li><b>Attitude:</b> participants had positive and negative attitude of ACP.</li> <li><b>Factors:</b> education, religion</li> </ol>
Chi et al <sup>33</sup>	To explore older Chinese Americans and adult children's communication preferences and optimal timing for HCPs to initiate the EOL care discussions.	United States, community	Total n=30 Older Chinese American (n=14) Adult children (n=9) HCPs (n=7) Average age: 57–77 (older)	Focused ethnography, semi-structured interviews, thematic analysis and constant comparative analysis	<ol style="list-style-type: none"> <li><b>Attitude:</b> open to EOL care discussion (Both older Chinese and adult children).</li> <li><b>Communication preferences:</b> intrafamilial communication-spouses (older Chinese American), patient-provider, communication-initially by HCPs (both older Chinese and adult children).</li> </ol>

(continued)

Table 3. Continued.

Quantitative studies	Aim (s)	Country and setting	Subjects	Design	Major findings
Chi et al <sup>34</sup>	To explore communication strategies for HCPs to initiate EOL care discussions with older Chinese Americans in the San Francisco Bay Area.	United States, community	Total n=30 Older Chinese American (n=14) Adult children (n=9) HCPs (n=7) Average age: 57-77 (older Chinese American), 31-51 (adult children), 31-57 (HCPs)	Focused Ethnography, semi-structured interviews, constant comparative analysis	<p>3. <b>Recognition of the optimal time:</b> triggering events, health status, and age.</p> <p>4. <b>Perspectives of optimal time:</b> "the earlier the better" (older Chinese American), various health status markers as the optimal time to discuss EOL care (Adult Children), older (70-80s) and sicker (HCPs), EOL care discussions with older Chinese Americans before their decision-making capacity is impaired (all participants).</p> <p>5. <b>Experience:</b> most of them has engaged in the EOL care discussion.</p> <p>1. <b>Communication preferences:</b> indirect communication approaches to initiate discussion. Approaches should be culturally targeted.</p> <p>2. <b>Major prerequisites to determine the Chinese Americans' readiness for EOL care discussion:</b> health-care system integration of advance care planning and HCP practice.</p>
Menon et al <sup>18</sup>	To study the attitudes and perceptions of patients with life-limiting illnesses, informal caregivers, doctors, nurses, and medical social workers regarding ACP in a multicultural family centric community.	Singapore, various health care institutions	Total n=61 Patients (n=15) Caregivers (n=13) HCPs (n=33) Age range: 24-61 (HCPs), 22-72 (Patients and caregivers)	Focus groups, in-depth interviews, inductive thematic analysis	<p>1. <b>Awareness:</b> most doctors had heard of ACP and knew details. Awareness among nurses and MSWs was more variable, with some having heard of ACP but were unaware of the details, and others knew nothing. Most patients and caregivers were unaware of ACP.</p> <p>2. <b>Perception:</b> participants had positive and negative expectations of ACP.</p> <p><b>Experience:</b> EOL preferences were not discussed by any respondents.</p> <p>2. <b>Perceptions of EOL communication:</b> taboo and religious beliefs, ideal funeral planning, dignity, and life after, EOL decisions made by other people, and the need for open discussion.</p>
Jiao and Hussin <sup>35</sup>	To investigate the experience and perception of EOL communication among Chinese elderly nursing home residents in Malaysia.	Malaysia, A non-government nursing home	Elderly residents N=13 Age range: over 60	Interviews, thematic analysis	<p>1. <b>Attitude:</b> significantly more open.</p> <p>2. <b>When:</b> on any occasion.</p> <p>3. <b>Where:</b> anywhere with no restriction on the type of setting.</p> <p>4. <b>Who:</b> relatives (spouses, children).</p> <p>5. <b>What:</b> End-of-life medical treatments, setting for end-of-life care.</p> <p>6. <b>How:</b> direct discussion with family members to express their wishes regarding end-of-life care.</p> <p><b>Facilitators:</b> Governmental policies.</p> <p><b>Factors:</b> Facilitators: Participants' trust in their clinicians and the study institution is a key support for clinicians. Barriers: Participants' preconceptions about clinicians' professional responsibilities and their belief in an uncertain future may prevent an open discussion of future medical care goals and values.</p> <p>A key moderating factor: acculturation to local care, behavioral, and communication norms may influence participants' views of ACP.</p>
Chiang et al <sup>36</sup>	To understand the impact of cultural integration of Chinese ethnic groups with different levels of westernization on the promotion of advance medical plans, and the key factors in promoting ACP.	Singapore, not stated	Chinese in Singapore N=17 (76.2% are Chinese)	Transnational focus group interviews, thematic analysis	<p>1. <b>Attitude:</b> significantly more open.</p> <p>2. <b>When:</b> on any occasion.</p> <p>3. <b>Where:</b> anywhere with no restriction on the type of setting.</p> <p>4. <b>Who:</b> relatives (spouses, children).</p> <p>5. <b>What:</b> End-of-life medical treatments, setting for end-of-life care.</p> <p>6. <b>How:</b> direct discussion with family members to express their wishes regarding end-of-life care.</p> <p><b>Facilitators:</b> Governmental policies.</p> <p><b>Factors:</b> Facilitators: Participants' trust in their clinicians and the study institution is a key support for clinicians. Barriers: Participants' preconceptions about clinicians' professional responsibilities and their belief in an uncertain future may prevent an open discussion of future medical care goals and values.</p> <p>A key moderating factor: acculturation to local care, behavioral, and communication norms may influence participants' views of ACP.</p>
Jia et al <sup>37</sup>	To explore barriers and facilitators to ACP among Chinese patients with advanced cancer and their caregivers.	United States, one U.S. comprehensive cancer centre	Total n=28 Patients (n=20) Caregivers (n=8) Middle age: 57.7±12.5 (patients), 50.0±15.3 (caregivers) Most common cancer diagnosis for patients: gastrointestinal Relationship between patients and caregivers: spouse or child	Socioecological theory, semi-structured interviews, thematic analysis	<p>1. <b>Awareness, Knowledge, and experience:</b> 21% of participants had heard about ADs, among those who had</p>
Gao et al <sup>38</sup>	To describe knowledge of AD and preferences regarding EOL care communication, decision making, and	United States, community	Chinese N=385	Cross-sectional study, structured interview	

(continued)

**Table 3.** Continued.

Qualitative studies	
Ng et al <sup>39</sup>	<p>designations of surrogates in Chinese American elders and to examine the role of acculturation variables in AD awareness.</p> <p>Age range: 55 and older Average age: 73 Purposive sampling</p> <p>To investigate the awareness, attitude, and factors of the local Singapore community toward ACP.</p> <p>Chinese N=273/406 Average age: 46.8</p> <p>Singapore, community dwellers</p> <p>Cross-sectional study, questionnaires</p> <p>heard of an advance directive, an average participant answered five of seven questions correctly and only 10% had completed one.</p> <p><b>Facilitators for awareness of ADs:</b> higher education, higher acculturation levels, prior experiences with seriously ill relatives and friends, residing in United States ≥ 20 years.</p> <p><b>Preferences:</b> 82.8% participants preferred physicians or family to initiate AD discussions. Participants preferred children and spouses as the healthcare surrogate.</p> <p><b>Factors:</b> concerns about causing burdens on families as the most important factor in making EOL decisions (89.3%), best interests in the eyes of family members (86.6%), the possibility of being cured (78.7%), and financial cost (78.3%), religious beliefs (50%) is an important factor in their decision-making process.</p> <ol style="list-style-type: none"> <li><b>Awareness:</b> 14.4% of respondents had heard of ACP.</li> <li><b>Attitude:</b> After education, most 60.1% respondents were willing to begin an ACP discussion.</li> <li><b>Experience:</b> 12.5% respondents had a previous discussion regarding their ACP.</li> <li><b>Factors:</b> Facilitators: an older age, having a life-threatening illness and having more knowledge about ACP. Barriers: perceiving oneself as still healthy and preferring the family to make decisions instead.</li> </ol>
Liu <sup>40</sup>	<p>To understand the factors that influence Chinese American older adults' ACP on end-of-life care.</p> <p>Chinese American elders N=298 Age range: 55–101 Mean age: 73.67</p> <p>United States, community</p> <p>Cross-sectional study, questionnaires</p> <p><b>Factors:</b> Both the <b>TPB</b> and <b>HBM</b> had predictive power to explain the target population's intentions. The predictability of TPB and HBM measures varied across the two behaviors. <b>Acculturation</b> moderated the relationship between attitudes and intentions to complete an AD negatively. <b>Family cohesion</b> moderated the relationship between perceived benefits and intentions to discuss end-of-life care plans with family members negatively. <b>Predictors:</b> attitudes, subjective norms, and self-efficacy (both behaviors).</p>
Dhingra et al <sup>41</sup>	<p>To describe attitudes and beliefs concerning ACP in older, non-English-speaking Chinese Americans in a medically underserved urban region.</p> <p>Patients N=179/215 Average age: 68</p> <p>United States, a large community-based primary care practice</p> <p>Cross-sectional study, questionnaires</p> <ol style="list-style-type: none"> <li><b>Acculturation:</b> most participants had low acculturation and highly rated physical and mental health.</li> <li><b>Experience:</b> few patients (15.1%) had an advance directive.</li> <li><b>Awareness:</b> 56.8% were unfamiliar with ACP. Less than 20% heard about ACP relevant elements.</li> <li><b>Willingness:</b> 74.4% were willing to complete one in the future.</li> <li><b>Beliefs:</b> thirty-two percent "agreed" that "talking about death in the presence of a dying person would accelerate death."</li> <li><b>Factors:</b> there were no statistically significant associations among any of the patient characteristics and any of the beliefs or attitudes about AD or about dying and death.</li> </ol>
Pei et al <sup>42</sup>	<p>To examine how immigrant status and family relationships are associated with ACP engagement and (EOL) preference in burial planning among older Chinese Americans, the largest subgroup of Asian Americans.</p> <p>Chinese American N=430 Age range: 55 and older Average age: 74 Snowball sampling and convenience sampling</p> <p>United States, Community</p> <p>Cross-sectional study, questionnaires</p> <ol style="list-style-type: none"> <li><b>ACP engagement:</b> about half of the participants had ACP contemplation and ACP discussion.</li> <li><b>EOL preference:</b> 24.1% had EOL preference in burial planning in the hypothesized situation.</li> <li><b>Factors:</b> Facilitators: the US-born Chinese Americans, and family conflict. Family cohesion was not associated with these study outcomes.</li> </ol>
Wang et al <sup>43</sup>	<p>Chinese American</p> <p>United States, community</p>

(continued)



Table 3. Continued.

Qualitative studies	
To examine the factors of AD completion among older Chinese Americans.	<p>N=435 Age range: 55 and older Average age: 75 A convenience sample</p> <p>Chinese American</p> <p>N=260 Age range: 55 and older Average age: 74 A convenience sample</p> <p>Chinese-speaking people N=325 of 519 for data analysis Most participants were female aged 60 and above (n=226)</p> <p>United States, Community</p> <p>United States, Community</p>
Wang et al <sup>14</sup>	<p>United States, Community</p> <p>United States, Community</p> <p>United States, Community</p>
Wong et al <sup>15</sup>	<p>Australia, community</p> <p>Australia, community</p> <p>Australia, community</p>
MPsych et al <sup>16</sup>	<p>Singapore, a tertiary hospital</p> <p>Singapore, a tertiary hospital</p> <p>Singapore, a tertiary hospital</p>
Lee et al <sup>17</sup>	<p>United States, community</p> <p>United States, community</p> <p>United States, community</p>
Sun et al <sup>18</sup>	<p>United States, Community (church)</p> <p>United States, Community (church)</p> <p>United States, Community (church)</p>
Hinderer and Lee <sup>19</sup>	<p>United States, Community</p> <p>United States, Community</p> <p>United States, Community</p>

1. **Experiences:** approximately 14% of participants completed an AD.

2. **Facilitators:** older age, higher level of acculturation, higher expectation for inter-generational support, and having US citizenship were positively associated with AD completion. **Factors:** Family relationships had a significant positive total effect on attitude toward family involvement in EOL care.

1. **Awareness of ACP and experience:** the majority (63%, n=206) were previously unaware of ACP. Of those aware of ACP (29%, n=93), only 25% (n=21) had undertaken ACP. **Facilitators:** perception of receipt of useful information positively correlated with motivation to undertake ACP. English-speaking had a significantly greater likelihood of completing an ACP (n = 6 vs 3).

**Barriers:** no perceived need, lack of knowledge, believing it was too complicated, social stigma and lack of time.

1. **Willingness to engage ACP:** 46.4% participants was not ready to initiate ACP. Fifty-two persons were keen on ACP.

2. **Factors:** education, FAB, and passive coping.

3. **Predictors:** FAB, and passive coping.

1. **Knowledge:** After intervention, participants' ACP knowledge increased significantly.

2. **ACP engagement:** 62.5% did not have previous ACP discussions. Of the 45 individuals who did not have a previous ACP discussion, 35.6% reported having an ACP discussion at Time 3.

3. **Advance directive completion:** 69.4% participants have not completed an AD before attending the seminar. 20% completed an AD 1 month later (Time 3).

4. **Perceived seminar effectiveness:** During the nurse-led seminar, knowledge, AD completion, and ACP discussions increased significantly. A significant increase of AD knowledge was noted between Time 1 and Time 2, with no change in knowledge scores between Time 2 and Time 3.

5. **Facilitators:** increased Age, female gender

6. Educational level has no association with AD and ACP engagement.

1. **Effectiveness:** after the intervention, there was significant improvement in AD knowledge (34%–87%), intention to complete AD (68%–78%), and intention to have a proxy conversation (70%–85%) among Asian adults.

2. **AD Completion:** by three months after the intervention, majority of Chinese Americans had completed an AD (T0-T2: 0%–65%–71%), and a small proportion had a proxy conversation (T0-T2: 0–26.6%–28%).

3. **Facilitators to AD completion:** lived in United States longer, greater English proficiency, family support.

1. **Experience:** at the time of the workshop (time 1/time 2), 29.5% participants had an AD and 36.6% previously engaged in a discussion with friends and/or family about their ACP wishes. One month following the workshop (time 3), of those who did not have an AD or no previous ACP

(continued)

**Table 3.** Continued.

Qualitative studies	
Dhingra et al. <sup>50</sup>	<p>To evaluate a culturally tailored toolkit's usability, acceptability, and preliminary outcomes regarding ACP</p> <p>United States. Two community-based practices (joint primary care and oncology)</p> <p>Outpatients N=66 Average age: 70 A convenience sample Chronic conditions included cancer (19.6%), diabetes (19.6%), and hypertension (22.7%).</p> <p>Quasi-experimental, single-arm pilot study, questionnaires</p> <p>1. <b>Understanding and effectiveness:</b> 78.8% participants did not understand the purpose of ACP before the discussion. After the ACP discussion, 97.0% participants had understanding. During the discussion, 58 patients (87.9%) completed a new proxy naming a health care agent, 21 (31.8%) requested a non-hospital DNR order, and two (3%) completed a living will.</p> <p>2. <b>Effectiveness:</b> participants' attitude toward AD have increased after the seminar, and remained stable after one month (T2, T3). There was a significant positive relationship between attitudes and AD completion and ACP discussions.</p> <p>1. <b>Knowledge:</b> (pre: mean 6.04 [SD, 2.28]; post: mean 8.75 [SD, 0.53]; P &lt; .01).  <b>Attitude:</b> (pre: mean 47.31 [SD, 5.69]; post: mean 53.59 [SD, 4.37].  <b>Effectiveness:</b> participants' knowledge and attitude have been increased significantly following online ACP education.  <b>Facilitators:</b> a high level of acculturation and previous knowledge, English speaking, educational level (for ACP knowledge), number of years in US (for attitude), gender (for attitude).  <b>Barriers:</b> Lack of previous ACP knowledge                  Age was not found to be correlated with attitude and knowledge.</p>
Ye et al. <sup>51</sup>	<p>To explore Chinese Americans' knowledge and attitudes about ACP following completion of a web-based culturally tailored health education program.</p> <p>United States. An open-to-public website</p> <p>Chinese American N=96 Age range: 28-83 Mean age: 52.34±10.78 A convenience sample</p> <p>Quasi-experimental, a pretest and posttest repeated measures design, questionnaires</p> <p>1. <b>Knowledge:</b> (pre: mean 6.04 [SD, 2.28]; post: mean 8.75 [SD, 0.53]; P &lt; .01).  <b>Attitude:</b> (pre: mean 47.31 [SD, 5.69]; post: mean 53.59 [SD, 4.37].  <b>Effectiveness:</b> participants' knowledge and attitude have been increased significantly following online ACP education.  <b>Facilitators:</b> a high level of acculturation and previous knowledge, English speaking, educational level (for ACP knowledge), number of years in US (for attitude), gender (for attitude).  <b>Barriers:</b> Lack of previous ACP knowledge                  Age was not found to be correlated with attitude and knowledge.</p>
Mixed method study Authors, Year Hsiung <sup>52</sup>	<p>Aim (s) To describe the factors that influence Chinese Americans' readiness for advance care planning.</p> <p>Country and setting United States, community</p> <p>Subjects Chinese American N=211 (quantitative) Age range: 45 and over N=28 (qualitative) Age range: 65 and over</p> <p>Design Mixed method (a triangulation design), interview and questionnaires</p> <p>Major findings                  1. <b>Readiness:</b> about 68% participants intended to initiate advance care planning. Only 11% were willing to execute their ADs within next 6 months and 30 days, respectively.                  2. <b>Predictors:</b> cultural belief, and knowledge related to advance care planning were found to be an important predictor for Chinese Americans to advance in their stage of readiness.                  3. <b>Major inhibitors:</b> a lack of knowledge or misunderstandings leading to ACP being negatively perceived; a sense of no urgency and/or procrastination; difficulties of facing or initiating talk of death topics, with adult children; and a possible unwillingness to make a commitment about future EOL situations.</p>

Notes: **OG:** older group; **YG:** younger group; **ACP:** advance care planning; **AD:** advance directive; **EOL:** end-of-life; **GP:** general practitioners; **HCPs:** healthcare professionals; **TPB:** the theory of planned behavior; **HBM:** health belief model.

Australian elders, reporting higher levels of awareness among participants who had completed higher education. However, education was not reported as a consistent influencing factor by Ng et al<sup>39</sup> whose cross-sectional study with 273 (67.4%) Chinese diaspora residing in Singapore reported educational attainment had no association with advance care planning. However, the reason for these divergent results was not documented.

Most of the studies retrieved investigated the influence of age on awareness and knowledge levels. Although the majority of papers are focused on the middle (>48 years) to older age participants (>65 years) evidence suggested that as age progresses, higher receptivity toward advance care planning was observed.<sup>32,38,39,41,45</sup> For example, Ng et al<sup>39</sup> in a cross-sectional study of the Chinese general public (n = 406) (>21 years) in Singapore reported that about 14% of participants were aware of advance care planning, representing an older cohort (50.8 years vs 46.2 years,  $p = 0.045$ ,  $t = 2.0$ ,  $df = 402$ ). However, the influence of age on awareness of advance care planning was not consistent in some studies.<sup>38,41,45</sup> For example, in a cross-sectional study undertaken in the United States of patients (n = 179) aged 55 + recruited via a community medical unit, Dhingra et al<sup>41</sup> reported no statistically significant associations among any of sociodemographic factors, including age and awareness of advance care planning. Age was also not associated with knowledge level with Ye et al<sup>51</sup> and Lee et al<sup>47</sup> reporting moderate knowledge levels in advance care planning/advance directive among Chinese American elders. Furthermore, even among those who report an awareness of advance care planning, misconceptions were common, often associating it with living wills or euthanasia.<sup>18,31,32</sup>

However, other authors highlighted language among Chinese Diasporas as a factor influencing the awareness and knowledge of advance care planning.<sup>30,32</sup> In a study of older Chinese American adults (n = 34) using focus groups, Yonashiro-Cho et al<sup>30</sup> found participants in English-speaking groups had a greater understanding of, and familiarity with, advance care planning than those in Mandarin and/or Cantonese-speaking groups. This suggests that language ability may affect the ease with which participants become aware but also gain information about advance care planning. Both Yap et al<sup>32</sup> and Yonashiro-Cho et al<sup>30</sup> recommended the need for culturally tailored language materials to educate and facilitate the Chinese diaspora's engagement with advance care planning.

Several papers reported on the implementation of culturally tailored educational interventions,<sup>46,47,49-51</sup> all of which reported significantly improved outcomes. For example, in a study of Chinese American adults (n = 72), Lee et al<sup>47</sup> provided educational material in both English and Mandarin guided by the Five Wishes, a type of legal advance directive document in the United States, and found knowledge and engagement significantly improved. A similar programme has also been noted in the study conducted by Hinder and Lee.<sup>49</sup> However, all these retrieved studies were conducted in the United States and limited to only quasi-experimental methods, hence questions

are raised about the generalizability of the results to other countries.

## Theme 2: Engagement with Advance Care Planning

Of the 27 papers, 20<sup>29-42,44-47,49,52</sup> reported on the levels of engagement among Chinese diasporas and found low levels regardless of socio-demographic factors.<sup>30,38,39,41,42,45,47,49</sup> However, geographical location of the studies, where the legal, cultural, and social system acted as a catalyst, had a significant bearing on engagement with advance care planning. Compared to the sparse studies undertaken in geographical locations such as Australia,<sup>32,45</sup> Singapore,<sup>29,39,46</sup> and Malaysia,<sup>35</sup> thirteen of the retrieved studies were conducted in the United States<sup>30,31,33,34,37,38,40-42,44,47,49,52</sup> where the authors recognized the underpinning legal, financial, and policy frameworks supporting engagement with advance care planning. This is echoed in an international qualitative study by Chiang et al<sup>36</sup> undertaken with Chinese diasporas located across Taiwan, Hong Kong, Singapore, and Australia which reported significant regional variances in participants' understanding and experience of advance care planning that were attributed to the legal, financial, and policy frameworks in different regions and the culture of westernization.

Acculturation was found by several studies to have an influential role when discussing advance care planning among Chinese living in multicultural countries.<sup>30-32,36,40,42,45</sup> Participants who had greater proficiency in English<sup>30-32,45</sup> or lived in the host countries longer<sup>40,42</sup> were found to be more likely to engage with advance care planning. For example, in a study undertaken in the United States, Lee et al<sup>31</sup> found that older Chinese diaspora generations who lacked English proficiency tended not to engage in advance care planning. However, this was not an issue for younger generations who were multilingual.

Other facilitating factors enhancing engagement were the diagnosis of a health-related problem (ie, falls, hospitalization, the decline in health) and/or a diagnosis of a life-limiting condition which acted as key triggers to engagement.<sup>30</sup> Several authors who undertook their research in America and Singapore<sup>33,39,46,52</sup> noted that participants who regarded themselves as healthy did not feel any requirements to engage in advance care planning discussions, regardless of age and geographical location. Only one study by Wong et al<sup>45</sup> contrasts this view. Adopting a cross-sectional design in Australia, findings indicated that there is no significant association between someone suffering from chronic illness or cancer and participating in advance care planning. However, this result was based upon a small (n = 26) sample of whom only seven had engaged in advance care planning.

Culture was also reported to partially affect the promotion and engagement with advance care planning. Jiao and Hussin<sup>35</sup> undertook a small-scale qualitative study in Malaysia, a highly collectivistic society, that reported none of the 13 participants had engaged in advance care planning discussions. Several authors have also highlighted traditional Chinese culture, where a taboo

surrounding death, fear of upset, and causing physiological burdens among family members, hindered such topics from being broached.<sup>32,35</sup> Discussing dying and making advance care plans were found to be considered taboo subjects regardless of sociodemographic factors.<sup>29,31,35,36,38,41,52</sup> Some studies indicated that participants preferred the initiation of such conversations to be led by healthcare professionals or community representatives rather than by themselves or family.<sup>28-34,37</sup> Furthermore, Lee et al<sup>31</sup> indicated that both older and younger Chinese Americans expressed concerns about causing burdens to their families that inhibit their behavior to advance care planning. The experience and impact of the family burden on advance care planning conversations are echoed in other studies<sup>29,31,36,37,52</sup> that indicated the burden usually tends to be a double-edged sword. Fear of causing upset, facing one's own mortality, and the realization of older person care is the duty and burden of the remaining family members were key barriers to engagement. However, Yap et al's<sup>32</sup> qualitative study of 30 older Chinese Australians found that many participants were open to discussing death, end-of-life, and advance care planning. They suggested that the low uptake of advance care planning among Chinese Australians might not be culturally motivated but rather due to language barriers that prevent access to health information and services.

Several studies<sup>29,32,34,39,40-42,44</sup> identified facilitators to advance care planning engagement such as social and health-related networks. The influence of a strong family culture was viewed as the foundation for promoting family involvement in decision-making. Liu<sup>40</sup> reported that family cohesion acts as the moderator. A similar finding was reported by Wang et al<sup>44</sup> who undertook a cross-sectional study of 260 Chinese Americans aged 55+ years and found that family relationships had a significant positive overall effect on the attitude toward family involvement in end-of-life discussions. However, conflicting evidence regarding the family's influence exists. Wang et al<sup>43</sup> previously stated that there is no correlation between family cohesion and the completion of advance directives among older Chinese Americans. Moreover, Pei et al<sup>42</sup> found that family conflict, not cohesion, was associated with the engagement of advance care planning and end-of-life discussion.

## Discussion

### *Main Findings/Results of the Study*

These findings highlight that awareness and knowledge, and engagement with advance care planning in the Chinese diaspora communities are variable. Two factors, geographical context and culture, were found to be particularly important.

Chinese diaspora living in countries where advance care planning is supported by legal, cultural, and social systems are more likely to have awareness and knowledge of it and engage in these conversations. Although knowledge of and engagement with advance care planning remain low internationally, the United States was the country most prominent in the promotion of advance care planning.<sup>46,47,49-51</sup> The concept of advance care

planning first emerged and was advocated in the United States.<sup>23</sup> Funded hospitals and nursing homes are required through federal legislation to provide an opportunity for the public to familiarize themselves with and complete an advance directive underpinned by the Patient Self-Determination Act of 1990.<sup>53</sup> It is pertinent to note that challenges around the usage of language and terminology in different cultural contexts exist. Across the papers, the terms advance care planning and advance directives are used synonymously yet they have different procedures, focuses, and distinct meanings. The implications of this on the general public, particularly the Chinese diaspora, are unknown. The supportive social contexts that embed advance care planning may help to understand the divergence in findings.<sup>13,14,54,55</sup> The importance of geographical context is echoed in McIlpatrick et al's<sup>56</sup> study which highlighted the importance of government-driven policies and a positive social atmosphere to promote advance care planning. However, only one paper in this review indicated the role of policy as the influence. Chiang et al<sup>36</sup> found that the Chinese diaspora assigns great weight and aligns their behavior to national policy. This likely stems from the role of and trust often placed in government in Chinese cultures. The realization of the influence of strong policy initiatives at the health system and institutional level is considered an influential factor in advance care planning's acceptance among Chinese populations.<sup>4</sup>

Second, the findings from the review indicated that culture was reported to partially affect the promotion and engagement of advance care planning.<sup>32,35</sup> In traditional Chinese culture, common perspectives about death are a pragmatic acceptance of death's inevitability and this is also reported in the Chinese diaspora.<sup>57,58</sup> However, as this review confirms death is viewed as taboo, and death-related issues as sensitive topics. They believe conversations regarding death-related topics could result in ominous things and cause burdens on families.<sup>32,35</sup> This may help to explain why the Chinese population prefers indirect communication approaches rather than directly discussing end-of-life care plans or advance care planning with family members or healthcare professionals. As Jia et al<sup>13</sup> proposed, effective communication strategies need to be tailored to individuals and culturally appropriate. This is also echoed in other diasporas globally.<sup>16</sup> The Chinese tradition of reciprocal filial piety, in which adult children are expected to look after elders was found to be an influence on engagement with advance care planning.<sup>57,59,60</sup> However the evidence of the influence of this is unclear. Some research suggests filial relations in the West are consistent with that supported by the reciprocal aspect of filial piety in Chinese societies.<sup>57,59</sup> However evidence from this review suggested that in an attempt to reduce the burden of planning for the future, members of the Chinese diaspora generally prefer others in authority (ie healthcare professionals or community representatives), rather than themselves, to initiate advance care planning.<sup>28-34,37</sup>

The findings from the review also indicated the influence of a strong family culture in decision-making, reflected in other review<sup>54</sup> which is a characteristic of the Asian culture. This emphasizes the importance of familism in making major decisions rather than individuals' autonomy and self-determination.<sup>61</sup> It is

imperative, therefore, to understand the cultural differences to help inform public health approaches to enhance knowledge and engagement with advance care planning.

This review highlights some gaps in the evidence base with regard to the influence of cross-cultural integration and generational differences on advance care planning engagement.

### What This Study Adds?

Advance care planning has been advocated as one way in which to improve the Chinese diaspora's end-of-life care experience. However, evidence suggests knowledge and uptake of it are low across multicultural countries. This study updates previous reviews on components of advance care planning for Chinese diasporas and highlights that Chinese diaspora's awareness, knowledge and engagement with advance care planning is not a linear process. In addition to the socio-demographic factors which have been recognized in previous studies as influencing engagement in advance care planning, two additional considerations were identified. First, in the geographical context and culture within which the Chinese diasporas are living, the legal, cultural, and social systems act as a catalyst to enhance awareness of and engagement with advance care planning. However, most studies, especially those that investigated bespoke culturally tailored advance care planning educational interventions, were conducted in the United States and limited to only quasi-experimental methods. There is a lack of evidence in other multicultural countries such as the UK. Second, Chinese diaspora's original culture has a significant impact on engagement with advance care planning. It is crucial to accommodate their traditional cultural beliefs in the practice of advance care planning. This review indicates the lack of high-quality culturally tailored educational interventions to improve knowledge of advance care planning. It is therefore imperative to conduct more research to address these issues, in turn promoting Chinese diaspora engagement with advance care planning across multicultural countries.

### Strengths and Limitations

While this comprehensive systematic global literature review was guided by standard methodology, it has several limitations. First, this review only included English and Chinese language studies, limiting the inclusion of other languages. Secondly, this review included papers published from 1990 to 31<sup>st</sup> March 2022, and new studies published after this date may not be reflected in the analysis, so the conclusion should be treated with caution. Finally, a plethora of terms are used to denote advanced care planning, and it is possible that some terms were missed.

### Conclusion

The review provided an international insight into the Chinese diaspora's knowledge of, and engagement with advance care planning. Overall, the results indicate that Chinese diaspora

engagement is not a linear process but is influenced by a myriad of socio-demographic factors. Such findings are not novel and have been reported elsewhere; however, the influence of identity and culture has been neglected in the delivery and engagement with advance care planning among diaspora groups. The realization of geographical context and culture within which the Chinese diaspora are living, as well as their original culture, were found to be key factors influencing engagement. Therefore, a culturally tailored approach should be accommodated in future research and practice for Chinese communities in multicultural countries, especially in the UK.

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## Appendices.

### Appendix I.

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CINAHL Search Strategy.

Interface – EBSCOhost Research Databases

Search Screen - Advanced Search

Database: CINAHL with Full Text

Search

Limiters – Published Data: 1990–2022 March; Language: English and Chinese; Scholarly (Peer Reviewed) Journals

Search modes - Find all my search terms

ID	Query	Results
S16	S11 AND S15	289
S15	S12 OR S13 OR S14	72786
S14	"chinese immigrant*" or "chinese migrant*" or "chinese diaspora*" or "Chinese American*" or "Chinese-Speaking" or "Chinese Australian*" or "Asian American"	4354
S13	Chinese	70551
S12	(MH "Chinese")	7687
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10	43019
S10	"end of life" or EOL N3 (plan* or conversation* or "decision making" or discussion* or directive* or "care preference*")	32770
S9	"living will"	1356
S8	"advance* directive"	7060
S7	"advance* discussion*" or "advance* decision*" or "advance* statement"	583
S6	"advance* medical plan"	5
S5	"advance* health care plan*" or "advance* healthcare plan*" or "advance* health-care plan"	12
S4	"advance* care plan"	5643
S3	(MH "Living Wills")	1013
S2	(MH "Advance Directives +")	9456
S1	(MH "Advance Care Planning")	4437

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## Appendix 2: Quality appraisal.

Phase I JBI Low = <49% Medium = 50 – 74% High = >75%

### Qualitative studies (n=12) (Joanna Briggs Institute Tools).

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Score	%	Grade
Bowman and Singer 2001	UN	Y	Y	Y	Y	N	N	Y	Y	Y	7/10	70	M
Chi et al 2018 a	N	Y	Y	Y	Y	N	Y	Y	Y	Y	8/10	80	H
Chi et al 2018 <sup>b</sup>	N	Y	Y	Y	Y	N	Y	Y	Y	Y	8/10	80	H
Jiao and Hussin 2020	N	Y	Y	Y	Y	N	UN	Y	Y	Y	7/10	70	M
Jia et al 2022	N	Y	Y	Y	Y	N	UN	Y	Y	Y	7/10	70	M
Menon et al 2018	N	Y	Y	Y	Y	N	Y	Y	Y	Y	8/10	80	H
Ng et al 2013	N	Y	Y	Y	Y	N	UN	Y	Y	Y	7/10	70	M
Braun and Nichols 1997	N	Y	Y	Y	Y	N	UN	Y	UN	Y	6/10	60	M
Lee et al 2017	N	Y	Y	Y	Y	N	UN	Y	Y	Y	7/10	70	M
Chiang et al 2021	N	Y	Y	Y	Y	N	UN	Y	Y	Y	7/10	70	M
Yap et al 2018	N	Y	Y	Y	Y	N	Y	Y	Y	Y	8/10	80	H
Yonashiro-Cho et al 2016	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/10	90	H

### Non-randomized experimental studies (n=6) (Joanna Briggs Institute Tools).

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score	%	Grade
Hinderer and Lee 2019	Y	Y	N	N	Y	Y	Y	Y	Y	7/9	77	H
Sun et al 2017	Y	Y	Y	N	Y	Y	Y	UN	Y	7/9	77	H
Dhingra et al 2021	Y	Y	Y	N	N	UN	Y	UN	Y	5/9	55	M
Lee et al 2015	Y	Y	Y	N	Y	Y	Y	UN	Y	7/9	77	H
MPsych et al 2015	N	Y	Y	N	N	N	Y	Y	Y	5/9	55	M
Ye et al 2021	Y	Y	Y	N	Y	N	Y	Y	Y	7/9	77	H

### Cross-sectional studies (n=8) (Joanna Briggs Institute Tools).

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score	%	Grade
Dhingra et al 2020	Y	UN	Y	Y	Y	UN	Y	Y	Y	7/9	77	H
Wang et al 2022 <sup>b</sup>	Y	N	UN	Y	Y	Y	UN	Y	Y	6/9	66	M
Wang et al 2021 <sup>a</sup>	Y	N	UN	Y	Y	Y	Y	Y	UN	6/9	66	M
Pei et al 2021	Y	Y	Y	Y	Y	Y	N	Y	Y	8/9	88	H
Gao et al 2015	Y	Y	UN	Y	Y	Y	Y	Y	UN	7/9	77	H
Wong et al 2022	Y	UN	Y	Y	Y	UN	Y	UN	UN	5/9	55	M
Liu 2018	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9	100	H
Ng et al 2017	Y	Y	Y	Y	Y	N	Y	Y	Y	8/9	88	H

Screening questions (combine general question, qualitative, quantitative descriptive and mixed methods)	Hsiung 2011
I. Are there clear research questions?	Y
Do the collected data allow to address the research questions?	Y
Is the sampling strategy relevant to address the research question?	Y
Is the sample representative of the target population?	Y
Are the measurements appropriate?	Y
Is the risk of nonresponse bias low	Y
Is the statistical analysis appropriate to answer the research question?	Y
Is the qualitative approach appropriate to answer the research question?	Y
Are the qualitative data collection methods adequate to address the research question?	Y
Are the findings adequately derived from the data?	Y
Is the interpretation of results sufficiently substantiated by data?	Y
Is there coherence between qualitative data sources, collection, analysis and interpretation?	Y
Is there an adequate rationale for using a mixed methods design to address the research question?	Y
Are the different components of the study effectively integrated to answer the research question?	Y
15. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	Y
Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	UN
Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	Y
Comment	None

Mix-method studies (n=1) (Mixed Methods Appraisal Tool).