

## RESEARCH ARTICLE

# Readiness for advance care planning and its relationship to coping style in patients with chronic diseases in communities: A cross-sectional study

Xinru Wang  | Yu Sheng

Chinese Academy of Medical Sciences & School of Nursing, Peking Union Medical College, Beijing, China

**Correspondence**

Yu Sheng, Chinese Academy of Medical Sciences & School of Nursing, Peking Union Medical College, No.33 Badachu Road, Shijingshan District, 100144, Beijing, China.  
Email: shengyumm@126.com

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**Abstract**

**Aim:** This study aimed to assess advance care planning readiness among patients with chronic diseases and identify its relationship to patients' coping styles.

**Design:** A cross-sectional study.

**Methods:** Patients with chronic diseases ( $N = 168$ ) were recruited from community health service centres. We used a self-designed and validated "advance care planning readiness questionnaire" to measure the patients' advance care planning readiness and a "simplified coping style questionnaire" to measure the patients' coping styles.

**Results:** Multiple linear regression analyses observed a positive relationship between "active coping style" ( $p = .002$ , 95%CI: 1.788, 7.599) with ACP readiness and a negative relationship between "passive coping style" ( $p < .001$ , 95%CI: -10.526, -4.274) with ACP readiness. Our study showed that there was a clear relationship between coping styles and ACP readiness. We suggest encouraging patients to choose more active coping strategies and to explore suitable conversation strategies for different coping styles when facilitating ACP discussion.

**KEYWORDS**

advance care planning, advance care planning readiness questionnaire, chronic disease, community, coping style, cultural issues, long-term condition, readiness

## 1 | INTRODUCTION

The ageing of the population has given rise to an increase in chronic diseases, which kill 41 million people each year, equivalent to 71% of all deaths globally (World Health Organization, 2018a). In China, chronic diseases have been the first leading cause of death and are associated with significant healthcare utilization and costs (World Health Organization, 2018b). The 5 most common chronic diseases in China include hypertension (67.06%), hyperlipidaemia (33.09%), diabetes mellitus (30.15%), coronary heart disease (20.20%) and stroke (7.87%) (Duan & Chen, 2020).

The patients and their families face complex healthcare decisions related to goals of care and treatment options as the diseases progress. People with long-term illnesses may have wished for the kind of care they would want, or not want, yet their illnesses render them temporarily or permanently unable to express their wishes. Understanding and respecting the end-of-life preferences and choices of chronic disease patients is a priority for healthcare providers (Dennis et al., 2008).

The idea of advance care planning (ACP) is derived from the core values of palliative care, which is beneficial to protect chronic patients' autonomy (Thorne et al., 2016). ACP is defined as a process

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in which people define their future end-of-life (EOL) care and discuss their preferences and goals with healthcare professionals and/or family, to prepare for the time when they lose competency to express their wishes (Sudore et al., 2017). Individuals living with chronic conditions can engage in ACP at any point along their disease trajectory, which helps to improve the consistency between the medical care they receive and personal values, goals and preferences (Health Canada, 2008; Yap et al., 2018). Evidence also showed that the implementation of ACP optimized patients' quality of life during end of life (Jimenez et al., 2018) and alleviated the family members' stress, anxiety and grief (Weathers et al., 2016). Advance care planning should be promoted as an important part of chronic disease self-management (Centers for Disease Control & Prevention, 2018).

## 2 | BACKGROUND

Internationally, advance care planning programmes tend to measure success by the completion rate of formal advance directives or plans (Blackford & Street, 2012). However, there are many countries and regions such as mainland China, Japan and Korea that have not yet issued legislation on advance directives (McDermott & Selman, 2018). Therefore, it is limited to judge the success of ACP only by evaluating the signing of formal documents. Furthermore, this outcome measure provides little information about how to promote the ACP process during usual care for health providers. ACP comprises formal and informal components. Formal ACP means the completion of written documentation. In most developed countries, formal ACP is the legal form to record patients' EOL care preferences and powers of attorney (Sabatino, 2010). Informal ACP is the broader, holistic process of discussion and decision-making involving patients and healthcare providers, and/or their families (McDermott & Selman, 2018). Informal ACP could serve as a preparatory step that leads to a formal type of ACP because such discussions provide an opportunity for the family members and healthcare providers to understand patients' preferences regarding end-of-life treatments during disease trajectory (Hong & Kim, 2020). Informal ACP is associated with decreasing the use of life-sustaining treatments and promoting goal-concordance care (Johnson et al., 2018; You et al., 2014) and is beneficial for family members both during the hospitalization and afterwards in bereavement (Bandini, 2020).

In Asian culture, most people are uncomfortable talking about death and would prefer to avoid undertaking open-ended conversations on their EOL issues (Deng et al., 2019). Research indicates that end-of-life decision-making is a process spanning chronic diseases, which involves three phases: preparation, decisions and outcomes (Levoy et al., 2020). "Readiness" is a key indicator to predict patients' participation in ACP (Simon et al., 2015), which is distinct from acceptance and can be conceptualized as the precursor to behaviours that are associated with adoption or resistance (Armenakis, 1993). By assessing patients' readiness to

engage in ACP conversation, healthcare providers could identify the appropriate time to talk with patients who have been prepared and find out information about the reason why some patients feel unprepared. Most previous studies with patients' ACP readiness employed the surveys which include items asking about the readiness to complete legal documents (Liu et al., 2020; Schnur & Radhakrishnan, 2019) or used qualitative interviews to reveal participants' readiness for ACP (Chan & Pang, 2011). The literature that examines the readiness for informal ACP on a quantitative approach is scarce.

Issues on end-of-life care often come with multiple sets of uncertainty for chronic disease patients, and the corresponding medical decision-making issues may bring psychological pressure to them. According to Lazarus and Folkman's Psychological Stress and Coping Theory, when a situation is appraised as stressful and requires efforts to manage or resolve the event, coping actions are enacted (Folkman & Lazarus, 1988). Coping styles are recurrent patterns of behaviour that characterize the individual when confronting new or problematic situations (Beutler et al., 2011). Coping styles reflect an individual's cognitive level, emotional state and personality characteristics during the stress and coping process. There were various classifications of coping styles from different researchers' views (Parker et al., 1986; Skinner et al., 2003). The most commonly mentioned classification of coping styles includes problem-focussed and emotion-focussed coping (Folkman & Lazarus, 1988). Chinese scholar Xie put forward that the classifications of coping styles proposed by different scholars have certain common features, namely some coping styles have more active components and some have more passive components. Based on Lazarus and Folkman's view and observations of the Chinese population, Xie developed the Simplified Coping Style Questionnaire and classified coping styles into active and passive dimensions, corresponding to the problem-oriented and emotion-oriented coping (Xie, 1998). For example, some patients take active efforts to manage uncertainties associated with illness through seeking information or expressing concerns, and other patients may take passive responses through avoidance or postponement of such conversations to get rid of emotional stress or discomfort.

Researches that analysed the relationship between coping style and ACP were limited, there is only one study by Loberiza (Loberiza et al., 2011) in America, showed that having written plans for ACP was associated with reported coping patterns that were problem-focussed, as opposed to emotion-focussed, because problem-focussed coping or active coping strategies generally address stress by trying to change the situation. Further analysis of the factor of coping styles affecting readiness is helpful to identify patients who have higher readiness for ACP discussion. However, there was still a gap in literature exploring the readiness and the influencing factors of patients with chronic diseases engaging in ACP. Furthermore, community health services usually cover prevention, medical treatments, health care, rehabilitation and health education, playing an important role in the management of chronic diseases. Understanding

the ACP readiness of chronic disease patients can provide a basis for policymakers and practitioners for promoting ACP.

Research questions:

1. What is the level of the chronic disease patients' readiness for ACP in communities?
2. Are there any relationships between individuals' coping styles and ACP readiness?

### 3 | METHODS

#### 3.1 | Study design

A descriptive, cross-sectional and correlational study was developed. Patients with chronic diseases were recruited through convenience sampling from September 2018 to January 2019 in community health service centres.

The criteria for patients to be considered for inclusion in the study were as follows: (1) Chinese adults (age  $\geq 18$  years old); (2) a medical diagnosis of any type of chronic diseases including cardiovascular and cerebrovascular disease, chronic respiratory disease, diabetes, chronic digestive disorder and chronic nephrosis; (3) those who had been aware of the medical diagnosis; (4) be capable of reading Chinese or answering questions; (5) agreed to take part in the study. Excluded from the study were individuals with the following characteristics: (1) patients who were in the acute phase of the illness or critical condition requiring continuous monitoring; (2) those who were unable to communicate because of adynamia and listening problems.

The sample size calculation formula for the cross-sectional study was used, a relative error of 0.1 and a significant level of 0.05, the coefficient of variation was estimated according to the research data ( $\sigma/\mu \approx 0.60$ ) (Hsiung, 2012), and a minimum number of 138 patients are required. Besides, Pedhazur and Schmelkin's recommendation of approximately 10 patients per predictor for a reliable regression equation was employed (Pedhazur & Schmelkin, 1991). Because 9 predictors were used to examine their influences on the dependent variable, a minimum number of 90 patients for the regression equation are required. To ensure the required number of samples, 187 patients were approached.

Of the 187 eligible patients who were approached, 19 declined. The reasons given by patients for refusing to participate in the study were that they were not interested in the study ( $N = 6$ ), or they did invalid questionnaires with multiple or empty choices ( $N = 13$ ). As a result, a total of 168 patients were included in the study.

#### 3.2 | Measurement

The questionnaire was composed of a socio-demographic questionnaire, a self-developed questionnaire namely the Advance Care Planning Readiness Questionnaire, and Simplified Coping Style Questionnaire for coping style.

#### 3.2.1 | Socio-demographic questionnaire

A demographic and background information sheet was used to collect information on socio-demographic characteristics and clinical data of the patients. The socio-demographic data included age, gender, level of education, nationality, religious belief, domestic status, number of children, occupation, religious belief and income level. The clinical data included the following: (1) The duration of the disease: ask the duration of the patient's chronic disease, when the patient had multiple long-term conditions, the longest duration of the patient's long-term illnesses was recorded. (2) The self-report intensity of the disease: the patient made a self-evaluation on the severity of the disease according to their feelings and chose the item in "normal," "mild," "moderate," "severe" and "extremely severe." (3) The previous EOL experiences: accessed by "previous EOL experiences scale (Chinese version)" in Hsiung's research (Hsiung, 2012), including the questions about patients' previous experiences related to EOL circumstances.

#### 3.2.2 | Advance Care Planning Readiness Questionnaire

The Advance Care Planning Readiness Questionnaire used in this study was designed using several strategies, then validated in chronic diseases patients in communities. First, the concept of ACP readiness was analysed based on a review of the literature. Armenakis et al (Armenakis, 1993; Holt et al., 2007) outlined a model of organizational readiness for change, where readiness "is reflected in organizational members' beliefs, attitude and intentions regarding the extent to which changes are needed and the organization's capacity to successfully make those changes." The readiness of ACP in this study is defined as the extent to which individuals are psychologically prepared to participate in informal ACP conversations and does not include signing formal documents. The components of ACP readiness include the following domains: (1) Attitude: refers to the psychological tendency to participate in ACP conversations contains subjective evaluation and acceptance. (2) Belief: refers to the confidence in the benefits of participating in informal ACP based on the judgement of personal values, which support an individual's participation in the process. (3) Motivation: refers to the internal drive that drives or impedes an individual's participation in ACP conversations. Then, a 40-item pool was developed based on data collected in a semi-structured interview with chronic disease patients and items adapted from relevant questionnaires (Fried et al., 2012; Lai et al., 2016; Tripken et al., 2016). After item screening by the research group, discussion and assessment of critical ratio, correlation index and Cronbach's alpha, five medical and nursing experts with clinical or research experience were invited to evaluate the content validity of the questionnaire. Then, exploratory factor analysis was performed and showed that the most interpretable solution consisted of 3 factors which explained 59.998% of the variance of the total scale. Lastly, calculated Cronbach's alpha and split-half reliability to

assess the internal reliability. The Advance Care Planning Readiness Questionnaire (see it in "Measurement\_SupplInfo") consists of 22 questions making up three domains: attitude (10 items), belief (7 items) and motivation (5 items). All questions are scored by Likert 1 ~ 5, questions in "attitude to ACP" are based on reverse scoring, and the other two dimensions are based on positive scoring. A higher score indicates a higher level of ACP readiness. The content index for items ranges from 0.80 to 1.00, and the content index for the questionnaire was 0.986. The Cronbach's alpha for the overall questionnaire and 3 dimensions, respectively, was 0.923, 0.900, 0.835 and 0.880. Split-half reliability was higher than 0.80. The score of ACP readiness (range from 22 to 110) was divided into four levels: 22 ~ 43 for low level, 44 ~ 65 for medium level, 66 ~ 87 for medium level and 88 ~ 110 for high level.

### 3.2.3 | Simplified Coping Style Questionnaire

Coping style was measured by Simplified Coping Style Questionnaire (SCSQ), which is a self-reported measure developed by Xie (1998) based on the Ways of Coping Questionnaire (WCQ) by Folkman and Lazarus (1988) and practical observations on Chinese people (see SCSQ in "Measurement\_SupplInfo"). Exploratory factor analysis in a sample of 846 urban Chinese individuals showed that 20 coping style items yield two dimensions defined as "passive coping" and "active coping." Active coping is used to handle the problem arousing emotional distress (Kraaij et al., 2002), such as "seeking advice from relatives, friends or classmates." Whereas passive coping is used to handle the distressing emotions caused by the problem (Kraaij et al., 2002), such as "believing that time will change the situation, the only thing to do is waiting" and "Trying to forget the whole thing." A four-point Likert-type scale is used for scoring each item (0 = never do, 1 = seldom do, 2 = often do, 3 = always do), and the total score for each subscale is obtained by a simple summation of the individual item. The higher score of each dimension indicates frequent usage of this coping style. The Cronbach's alpha for the overall questionnaire, active coping and passive coping was, respectively, 0.900, 0.890 and 0.780. The retest correlation coefficient was 0.890 which was tested in 20 college students twice and an interval of 2 weeks (Xie, 1998). In this study, the Cronbach's alpha coefficients for the two dimensions of SCSQ were 0.887 and 0.801 respectively. SCSQ has been widely used in Chinese research because it has good reliability and validity, and the characteristics of the two dimensions are also easy to be observed and understood in daily life.

### 3.3 | Data collection

All participants signed informed consent after understanding the purpose of this study. Participation was voluntary, and participants had the right to withdraw from the study at any time. All of the information from participants would remain confidential, and their anonymity would be preserved. The participants were invited to

complete the questionnaires in empty outpatient clinics of community health service centres by themselves or with the help of the researcher if needed, to protect their privacy and keep them away from disturbances. The researchers introduced ACP to the patients with uniform information material, which includes the concept, implementation process and expected effects of ACP. None of the participants reported feeling discomfort or distress while filling out the questionnaire. All the surveys were collected by the researcher to avoid any measurement bias.

### 3.4 | Data analysis

The data analysis was performed using the Statistical Package for the Social Sciences (SPSS, version 25.0). The demographic characteristics of the participants are described as frequencies and percentages. The continuous variables were tested by Kolmogorov-Smirnov test and z test for normality. For the z test, a z-score could be obtained by dividing the skew values or excess kurtosis by their standard errors. For medium-sized samples ( $50 < n < 300$ ), reject the null hypothesis at absolute z-value over 3.29, which corresponds with  $\alpha$  level 0.05, and conclude the distribution of the sample is non-normal (Hae-Young, 2013). ACP readiness and coping style were tested to conform to the approximately normal distribution and were described using means and standard deviations. The dependent variable was the score of ACP readiness, and the independent variables were (1) coping styles; (2) potential associated variables, such as gender, age, level of education, income level, number of children, duration of disease, the self-report intensity of the disease and previous EOL experiences. The study used independent-Sample t test, one-way ANOVA, Pearson's correlations and Spearman's correlations to examine the associations between different independent variables and ACP readiness. The level of significance was set at  $p < 0.05$ .

Multiple linear regression was used to evaluate which factors were associated with ACP readiness while adjusting for statistically significant covariates. Preparing the data for the multiple linear regression involved the following tasks: (1) creating dummy variables for categorical variables, including gender, level of education, income level and previous EOL experiences. For example, for the variable gender, the dummy variable of male versus female was created by coding male = 1 and female = 0; (2) to avoid omitting important variables, variables with  $p < .2$  in univariate analysis results were taken as independent variables in the multiple linear regression. The data were tested to be conformed to the premise hypothesis of linear regression analysis. First, the tolerance of the independent variables in the model was greater than 0.4, and the variance inflation factors were all less than 0.3, so it can be assumed that there was no multicollinearity between the independent variables. Then, the Durbin-Watson test showed the value of Durbin-Watson is 1.892, which means that there was no autocorrelation between the residuals. Third, the residuals were approximately normally distributed. Lastly, homogeneity of variance was checked because the scatter plot of the standardized residuals

TABLE 1 Participant demographics (N = 168)

Category	Different categories	N	(%)
Gender	Male	95	56.5
	Female	73	43.5
Age(years)	≤40	22	13.1
	41-50	48	28.6
	51-60	45	26.8
	61-70	45	26.8
	≥71	22	13.1
Nationality	The Han nationality	156	92.9
	National minority	12	7.1
Religious belief	Yes	152	90.5
	No	16	9.5
Domestic status	Married or domestic partnership	156	92.9
	Single, never married	6	3.6
	Divorced, no remarried	4	2.4
	Widowed, no remarried	2	1.2
Number of children	0	15	8.9
	1	97	57.7
	2	37	22.0
Education level	Bachelor degree or above	50	29.8
	High school level/college degree	87	51.8
	Junior high school level below	31	18.4
Occupation	Retired	73	43.5
	Institution officer	44	26.2
	Staffers infirm	11	6.5
	Individual worker	6	3.6
	Civil servant	5	3.0
	Job-waiting/ being unemployed	5	3.0
	Others	24	14.3
Salary(Yuan)	≤3000	39	23.2
	3001-6000	63	37.5
	6001-9000	33	19.6
	>9000	33	19.6
Type of disease	Hypertension	90	53.6
	Hyperlipidaemia	79	47.0
	Diabetes	43	25.6
	Coronary heart disease	27	16.1
	Bone and joint diseases	11	6.5
	Cancer	5	3.0
	Fatty liver	5	3.0
	Stoke	3	1.8
	COPD	3	1.8
	Chronic nephritis	3	1.8
	Peptic ulcer	2	1.2
	Asthma	2	1.2
Chronic cholecystitis	1	0.6	

(Continues)

TABLE 1 (Continued)

Category	Different categories	N	(%)
Duration of disease(years)	<3	63	37.5
	3 ~ 10	65	38.7
	>10	40	23.8
Intensity of disease	Normal	32	19.0
	Mild	88	52.4
	Moderate	37	22.0
	Serious	11	6.6

TABLE 2 ACP Readiness score of participants(N = 168)

Category	Score range	Average of the total score( $\bar{x} \pm SD$ )	95% CI	Level
ACP readiness	42 ~ 110	87.48 $\pm$ 12.96	85.50, 89.45	above-average
Attitude to ACP	13 ~ 50	37.83 $\pm$ 8.03	36.61, 39.06	above-average
Belief in participating in ACP	9 ~ 25	21.13 $\pm$ 2.79	20.70, 21.55	high
Motivation to undertake ACP	9 ~ 35	28.52 $\pm$ 4.32	27.86, 29.18	above-average

and the standardized predicted values was evenly distributed. Unstandardized Beta ( $\beta$ ) coefficients with 95% confidence interval and P-value < .05 were computed to assess the level of association and statistical significance in the final multiple linear regression analysis.

### 3.5 | Ethics

The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was reviewed and approved by the Ethics Review Boards of School of Nursing Peking Union Medical College before initiation. All participants indicated their willingness to participate in the study by signing a written informed consent. The information collected in questionnaires was completely anonymous.

## 4 | RESULTS

### 4.1 | Demographic characteristics

A total of 168 questionnaires were included for analysis (valid response rate: 168/187 = 89.8%). Table 1 shows the socio-demographic characteristics and clinical data of the included patients. Of the respondents, 95 were males (56.5%), 73 were females (43.5%), and the mean age was 55.02 years old (Standard Deviation = 11.75; range 26–88 years). As concerns the previous EOL experience, the 26 patients (15.5%) had experienced a life-threatening illness or accident, 15 patients (8.9%) had been

a patient in the intensive care unit(ICU), 98 patients (58.3%) had taken care of a dying family member, and 60 patients (35.7%) had participated in discussions regarding life-sustaining treatment for a family member.

### 4.2 | Readiness to engage in ACP

The outcome of the ACP readiness questionnaire with an overall mean score and three subscales is shown in Table 2. The overall ACP readiness score ranged from 42 to 110, while the mean score was 87.48  $\pm$  12.96 (95%CI: 85.50, 89.45), the score for three dimensions, respectively, was as follows: attitude to ACP was 37.83  $\pm$  8.03 (95%CI: 36.61, 39.06), belief in participating in ACP was 21.13  $\pm$  2.79 (95%CI: 20.70, 21.55), motivation to undertake ACP was 28.52  $\pm$  4.32 (95%CI: 27.86, 29.18). The lowest scoring items in three dimensions of ACP readiness, respectively, were item 5 “participating in the ACP discussion would make me heavy-hearted” (3.42  $\pm$  1.31); item 15 “Choosing the medical treatments I would like in advance could help avoid unnecessary treatments” (4.11  $\pm$  0.83); item 17 “I realized that I might lose the ability to make decisions because of a serious illness or trauma in the future” (3.79  $\pm$  1.00).

### 4.3 | Coping styles of the respondents

The description of the patients' score of coping style was shown in Table 3. The average score of active coping style was 2.34  $\pm$  0.75. The average score of the passive coping style was 1.64  $\pm$  0.70. Compared with the Chinese National norm level of coping style, the active coping style was higher ( $p < .01$ ).



Subscale	Average total score( $\bar{x} \pm SD$ )	95% CI	National norm( $\bar{x} \pm SD$ )	t	p-value
Active coping style	2.34 $\pm$ 0.75	2.23, 2.45	1.78 $\pm$ 0.52	9.247	<0.001**
Passive coping style	1.64 $\pm$ 0.70	1.54, 1.75	1.59 $\pm$ 0.66	0.888	0.375

TABLE 3 Description of participants' coping style and comparison with national norm(N = 168)

#### 4.4 | Factors associated with ACP readiness

In the multiple linear regressive model, ACP readiness was negatively associated with passive coping style ( $B = -7.400$ , 95%CI:  $-10.526$ ,  $-4.274$ ,  $p < .001$ ), positively associated with active coping style ( $B = 4.694$ , 95%CI:  $1.788$ ,  $7.599$ ,  $p = .002$ ), longer duration of disease ( $B = 0.305$ , 95%CI:  $0.107$ ,  $0.503$ ,  $p = .003$ ) and more previous experiences ( $B = 4.124$ , 95%CI:  $0.661$ ,  $7.588$ ,  $p = .020$ ). Compared with patients with an income level below 3k, patients with an income level of more than 9k would have higher ACP readiness.

## 5 | DISCUSSION

To the best of our knowledge, the present study is one of the most detailed exploring ACP readiness among community-dwelling chronic disease patients in China. We developed an ACP readiness questionnaire in Chinese cultural background to measure the level of readiness for ACP. In this study, we surveyed 168 Chinese community-dwelling adults with chronic conditions. We found the average ACP readiness score was above medium level, which may indicate that chronic diseases patients in the community have been prepared to participate in ACP to some extent. This result is similar to Zhu's study, which found that 79.3% of the 523 community-dwelling older adults thought that ACP discussion would be necessary and meaningful, and they would consider discussing ACP in the future (Zhu et al., 2020). In China, life-sustaining treatments are normally applied for most patients at the terminal stage of life to prolong their life (Deng et al., 2019). A study in China showed that 76.36% of patients in the ICU experienced external chest compressions in the last 6 months, and 81.82% of these patients experienced trachea intubation (Rao et al., 2016), whereas it is uncertain whether these measures are in line with patients' wishes. ACP is a good way to understand patients' wishes for medical treatments and care, as well as a good approach to promote communication among patients, their families and medical staff.

There were also some points under the social-cultural background the healthcare providers need to be concerned about. The respondents in this study were born in the background of the implementation of the one-child-per couple policy in the 1970s in China when the birth rate of the population decreased significantly. Most of the study patients had only one child (57.7%). A "421" type family structure is formed, and the children would face a heavy burden of taking care of the elders in the future(Mao, 2011). According to the previous studies, ACP discussion is helpful to reach a consensus between patients and family members on the medical care preferences, reduce children's psychological and financial burden and avoid

potential family conflicts and moral dilemmas(Kwon et al., 2012). At the same time, with the acceleration of the population ageing process, the state's spending on pension security services has increased, and the Chinese pension system would face great challenges. In this context, respondents with chronic diseases could easily understand the benefits of considering medical choices in advance. This suggests that the sociological background of the patient and the state pension status should be comprehensively considered when implementing ACP.

The lowest scoring item in the belief of ACP indicated the patients may hold uncertainty on whether their medical preferences can be adopted after ACP discussion. The situation could be explained by the shortage of laws and policies on formal ACP in mainland China. ACP needs to be established in the existing healthcare system as part of usual care to enhance the belief that supports participants to have ongoing ACP talks. The lowest scoring item in attitude to ACP showed patients' view of death in Chinese culture, which may be easily associated with reluctance to discuss EOL issues. It is suggested that healthcare providers use indirect and feasible ways to communicate with patients (Chi et al., 2018). In the dimension of motivation to ACP, the lowest item indicated that the patients may lack the awareness to make their own decisions to some extent. The participants' preferences for a passive role in decision-making were supported by several studies (Chan & Pang, 2011; Chan & Pang, 2007). Many participants did not see the value of the role of being actively involved in decision-making and were afraid of making the wrong decisions (Chan & Pang, 2011).

The linear regression analysis identified that for participants with a longer duration of disease, less passive coping styles, more active coping styles and previous experience of taking care of a dying family member, ACP readiness would be higher. The finding that coping styles were associated with ACP readiness in this study is consistent with prior research from Loberiza et al. (2011). An individual with active coping strategies generally addresses to solve stress matters by trying to change or eliminate the stressors (Lazarus et al., 1985). In contrast, a passive coping style is used when individuals feel difficult to control the situation, and they tend to protect their emotional status which was influenced by stressful events first (Folkman, 1986), whereas it should be noted that people could simultaneously use both active and passive coping strategies in the stress process (Folkman & Moskowitz, 2004). To increase individuals' ACP readiness, the healthcare professionals can encourage patients to take active control of their autonomy in end-of-life decision-making and provide emotional management to reduce patients' psychological burden.

Furthermore, the factors of duration of disease and previous EOL experience were identified to have a positive influence on ACP

**TABLE 4** Factors associated with ACP readiness of the patients by multiple linear regressions( $N = 168$ )<sup>†</sup>

Independent variables	$B^{\ddagger}$ (95% CI <sup>§</sup> )	Standard error	SE $B^{\#}$	$p$ -value
Constant	79.410 (67.793, 91.026)	5.881	–	<0.001**
Passive coping style	-7.400(-10.526, -4.274)	1.583	-0.398	<0.001**
Duration of disease	0.305(0.107, 0.503)	0.100	0.219	0.003**
Active coping style	4.694(1.788, 7.599)	1.471	0.273	0.002**
Previous experience	4.124(0.661, 7.588)	1.753	0.157	0.020*
Salary1(3k–6k)	4.105(-0.855, 9.066)	2.511	0.154	0.104
Salary2(6k–9k)	-1.339(-6.796, 4.119)	2.763	-0.041	0.629
Salary3(>9k)	6.964(0.726, 13.203)	3.158	0.214	0.029*

<sup>†</sup>:Summary of standard multiple linear regression between age, gender, education level, salary, number of children, disease duration, previous experience of taking care of a dying family member, coping style and ACP readiness. Model performance:  $R^2 = 0.315$ , adjusted  $R^2 = 0.271$ ,  $F = 7.208$ ,  $p < .001$ .

<sup>‡</sup>Unstandardized regression coefficients.

<sup>§</sup>confidence interval.

<sup>#</sup>Standardized regression coefficients, Previous experience: previous experience of taking care of a dying family member.

readiness in Table 4. Patients with a longer course of illness may experience more disease recurrences and have more opportunities to consider the prognosis of the disease. Relevant studies can support the above results, and the death attitudes survey of 216 elderly inpatients (Shen et al., 2004) showed that patients who had contacted dying patients were more likely to accept death. The community members and caregivers in Fried et al.'s (2009) study said that a fear of bad experiences during death and dying increased their participation in ACP. Hence, it was suggested that previous EOL experience could motivate patients to think about death and thus better prepare for ACP. Our study did not identify the associations with disease severity and general demographic factors, and future studies are suggested to use mixed-methods designs or enlarge the samples to explore potentially relevant factors.

The results of this study would be representative of the community-dwelling patients in stable condition to concern about ACP. In this study, 82.2% of the patients were aged from 41 to 70 years old, which was consistent with the age group where chronic diseases were mainly concentrated. The average monthly household income was 3001 ~ 6000 Yuan (37.5%), which was higher than that of Tang et al. (2014), possibly because the patients were mostly located in the urban area of Beijing, the economic level was better than people in a remote area. The prevalence of hypertension was the largest, similar to the results of Duan and Chen (2020). 71.4% of the patients thought they had a normal or mild intensity of the disease, which means more than half of the patients were in a stable state of the chronic diseases. Patients with stable chronic disease rarely face situations where their condition deteriorates rapidly and require urgent crisis management, should consider ACP as early as possible to gradually express their true wishes in a non-stressful situation (National Institute on Aging, 2014).

This study focussed on patients' readiness to participate in ACP conversations, and other factors need to be considered for promoting ACP. Several studies pointed out the barriers in engaging

patients in ACP (Conroy et al., 2009; Deng et al., 2019), including the legislation, clinician's competence, and confidence to start ACP discussion, healthcare system engagement etc. The effective implementation of ACP requires collaboration on all of these fronts. The medical staff needs to further promote ACP awareness and identify the patient with higher ACP readiness to start ACP conversations in the future. Promoting ACP has been on the policy agenda of the National People's Congress and Chinese People's Political Consultative Conference in Mainland China since 2010. Before the legislation is passed, a few outcomes of ACP conversations are expected to be achieved, which include understanding patients' values and care preferences, preparing for EOL decision-making, and identifying common goals of care (Mack et al., 2010).

## 5.1 | Limitations

The limitations of this study are as follows. First, the fact that data collection was carried in one municipality in China, which may lead to some limitations in population representation. Second, the cross-sectional design prevented the exploration of the causal relationship between ACP readiness and the related factors, which need to be further tested. Finally, because the relevant factors included in ACP readiness studies are still limited, the value of R squared is relatively low for the included variables in the multiple linear regression model. Future studies should address these limitations to reinforce the results achieved in this study.

## 6 | CONCLUSION

It is feasible to implement ACP in the current environment of actively promoting palliative care in China. Our study provides important information about the factors especially coping styles that were



associated with ACP readiness among Chinese people who have stable chronic diseases to engage with such conversations. Encouraging chronic diseases patients to use positive coping measures to address end-of-life care issues, such as accessing information, obtaining social support and proactively communicating with healthcare providers, would be helpful to improve patients' ACP readiness. These results would help clinicians to identify patients with a higher level of ACP readiness and provide the basis for making targeted interventions to improve patients' ACP readiness.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

## AUTHOR CONTRIBUTIONS

All the authors have contributed to the design, analysis and writing of this study.

- (I) Conception and design: All authors.
- (II) Administrative support: Yu Sheng.
- (III) Provision of study materials or patients: All authors.
- (IV) Collection and assembly of data: Xinru Wang.
- (V) Data analysis and interpretation: All authors.
- (VI) Manuscript writing: All authors.
- (VII) Final approval of manuscript: All authors.

## DATA AVAILABILITY STATEMENT

The data used to support the findings of this study are available from the corresponding author upon reasonable request.

## ORCID

Xinru Wang  <https://orcid.org/0000-0003-0978-6305>

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## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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