



# Effect of advance care planning discussions with trained nurses in older adults with chronic diseases in Japan

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**Background:** Advance care planning (ACP) discussions are often procrastinated due to both physician and patient factors. However, ACP should be started earlier, to provide more time for reviewing one's values and discussing them with loved ones and medical professionals. This study examined the effectiveness of ACP discussions with health care providers held among older adults with chronic diseases.

**Methods:** This was a non-randomized controlled trial among chronically ill people aged 65 years and older. A 6-month follow-up was conducted in the intervention group, in which participants had ACP discussions with trained nurses (n=115), and the control group, in which participants did not discuss ACP (n=115). Questionnaires were administered at baseline and at 6 months, to examine knowledge, ACP readiness and self-efficacy, and comprehensive quality of life (QoL).

**Results:** A total of 200 participants were included in the analysis. The mean age of participants was 69.6 years. There was only a small change in knowledge scores before and after the intervention, with no significant difference between the two groups. ACP engagement was significantly higher in the intervention group than in the control group at 6 months (P=0.016). Comprehensive QoL was significantly higher in the intervention group than in the control group (P<0.001). After adjusting for confounders using multiple regression analysis, there was still an association between those higher scores and the intervention (P=0.01, P=0.044).

**Conclusions:** This study showed that older adults with chronic diseases can have better communication with their families and health care providers and a higher QoL if they engage in ACP discussions with trained nurses at an early stage.

**Keywords:** Advance care planning (ACP); end of life discussion; physician-patient relationships; older adults; health communication

Submitted Aug 04, 2021. Accepted for publication Oct 12, 2021.

doi: 10.21037/apm-21-2161

View this article at: <https://dx.doi.org/10.21037/apm-21-2161>

## Introduction

Advance care planning (ACP) is a decision-making process for end-of-life care in which goals and preferences for future treatment and care are identified and discussed with

family members and health care professionals, documented, then reviewed as needed (1). In 2018, the European Association for Palliative Care conducted an international Delphi study to define ACP and recommended elements

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of ACP, including “exploring the individual’s experiences, knowledge, values, and preferences about the medical care they will receive in the future” and “appointing a personal representative to discuss their role and options” (1).

There are several benefits to ACP for individuals and families. The benefits for the individual include respect for their values regarding treatment and care, increased autonomy over treatment choices, and increased dialogue with family and health care providers (2-6). For family members, the benefits include reduced burden in decision-making and reduced stress and depression after death (7). In addition, patients and family members who had end-of-life discussions with health care providers who had completed communication skills training had a lower risk of developing depression and more frequent communication between health care providers (8,9). However, despite these reported benefits, various countries have reported low rates of ACP completion (10-13).

One important issue in promoting ACP is the timing of when to begin such discussions (14). In a previous large cohort study of patients with colon cancer, the first end-of-life discussion was held 33 days before death, on average (15). Many Japanese people do not feel comfortable discussing the end of life, and it is said that many people want to spend the last part of their lives without having any awareness about death (16,17). Similarly, although health care providers recognize the need for and responsibility to discuss end-of-life care with patients, they avoid or fail to initiate such discussions (3,18-20). As a result of the delay in ACP for these reasons, the question of whether to provide life-sustaining treatment is only addressed after the patient is in very critical condition (21,22). Additionally, the progression of a serious illness often leads to loss of the ability to make medical decisions. Therefore, it is important not to delay the timing of ACP. However, there are no studies in Japan that have examined the impact of early recommendations for and implementation of ACP by health care providers on later life.

The purpose of this study was to clarify the relationship between ACP discussions with medical professionals and knowledge and attitudes about ACP and quality of life (QoL) in older patients with stable chronic diseases. Based on the results of this study, we discuss the expansion of the target group for initiating ACP discussions, from patients who are at serious condition to a wider range of patients who are within the reach of medical professionals.

We present the following article in accordance with the STROBE reporting checklist (available at [https://apm.](https://apm.amegroups.com/article/view/10.21037/apm-21-2161/rc)

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## Methods

### *Study design*

This was a non-randomized controlled trial among chronically ill people aged 65 years and older. A 6-month follow-up was conducted in the intervention group, in which participants had ACP discussions with trained nurses, and the control group, in which participants did not discuss ACP. Questionnaires were administered at two time points: pre-intervention and 6 months post-intervention. The intervention was conducted in a conference room in a one-on-one setting. And the questionnaire survey was conducted online by entering responses into a web-based questionnaire. Reminders of the survey were sent by e-mail according to the timing of each target survey.

### *Ethical considerations*

The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). All participants received an explanation of the study contents from the researcher before the survey, and the survey system allowed participants to enter their responses to the questionnaire only if they agreed to do so. This study was conducted with the approval of the Ethics Committee of the Faculty of Medicine, University of Tokyo (Application No. 11270).

### *Participants*

Participants were recruited from people registered with an online research company between January and May 2018. Email was sent to registered users who agreed to participate in the study. Emails were sent to registered users who were willing to participate. Those who could participate in the one-hour intervention were included in the intervention group, and those who could participate only in the questionnaire survey were included in the control group.

The inclusion criteria for both the intervention and control groups were as follows: chronic disease (cardiovascular disease, respiratory disease, malignancy, renal disease, liver disease) with at least one hospital visit every 3 months, never received palliative care services, being independent in daily living activities, and able to go to the hospital on their own. The exclusion criteria were as follows: the investigator judging that the patient had

Step	Contents
1	Let's think about what would happen if... (What's important to you?)
2	Identify a surrogate decision-maker. <ul style="list-style-type: none"> <li>• What is a surrogate decision-maker and why do we need to decide on one?</li> <li>• Who might be able to guess your thoughts correctly? Why is that?</li> </ul>
3	Let's think about your life. <ul style="list-style-type: none"> <li>• Which do you value more, "being able to live longer" or "being able to live comfortably"?</li> <li>• About life-sustaining treatment</li> </ul>
4	Communicate your wishes to your family or surrogate decision-maker. <ul style="list-style-type: none"> <li>• What kind of information should you tell them?</li> <li>• How should you tell them?</li> </ul>
5	Talk to your doctor or health care provider. <ul style="list-style-type: none"> <li>• What questions should I ask?</li> <li>• What should I tell them?</li> </ul>

**Figure 1** Details of intervention.

difficulty with understanding explanations or completing the questionnaire, the investigator judging that the patient had serious physical or mental symptoms that made it difficult to participate in the study, and the patient having difficulty understanding Japanese.

The sample size was calculated in a *t*-test of the difference in means for the primary endpoint of comprehensive QoL. The effect size was set at 0.4 (Cohen's *d*), two-sided alpha 0.05, and power 0.8 from a previous study (23). The calculated sample size was 100 participants in each group. To account for losses to follow-up and drop-outs we set the final sample size to 115 in each group, for total of 230 participants.

### Intervention

Two nurses who completed the 2-day ACP facilitator training conducted the ACP discussion for the intervention group. The training program is the Education for Implementing End-of-Life Discussion (E-FIELD), which consists of lectures, role-plays, and discussions (24). The intervention in this study was the introductory part of the ACP discussion covered in E-FIELD. Details of the intervention are shown in *Figure 1*, which consisted of five steps. The content required varies depending on the health status of the subject (25). If the patient is healthy or has a mild disease, the end-of-life scenario is more abstract and requires broad and shallow content, such as an exploration

of values. For more advanced patients, the assumptions are more specific and focused, such as whether to take, withhold, or terminate a particular treatment. The content of the discussion depends on the situation of the patient and changes from abstract to concrete decision making. The intervention of this study dealt with the introductory part of the ACP discussion for patients with mild chronic illness, which is the concept of a surrogate decision maker, the introductory part of the identification of the person's hopes and values in treatment and life, and the way of communication to share them with the family and medical professionals. Normally, after this, the content would be more specific to the individual's condition depending on the patient's medical condition and situation. Facilitators were also trained in the E-FIELD program to conduct such specific discussions.

The nurses conducted an ACP discussion intervention among study participants in approximately 1 h. To make the intervention content consistent, the nurses provided ACP support based on a common scenario. They also provided examples of other people's narratives that matched each participant's life and disease situation, simulated specific communication to promote ACP with family members and the attending physician, and developed specific plans to promote ACP. Participants in the control group did not receive any of these programs.

### Measurement

#### Sociodemographic data

We queried participants' age, sex, education level, history of present illness, severity of each disease, family living together, health literacy, ACP-related experiences, and decision-making preferences. The Charlson comorbidity index (CCI) was used to assess the comorbidity of chronic diseases (26).

For health literacy, we used the Communicative, Critical Health Literacy instrument developed by Ishikawa *et al.* (27). The scale consists of five items, with five-point Likert scale (1 = strongly disagree, to 5 = strongly agree). The mean is the score. The Cronbach's alpha in this study was 0.87.

For preferences in the medical decision-making process, based on a control preference scale used in a previous study, we asked, "How you would like your treatment to be decided?" Responses were on a five-point scale (1 = I prefer to make the decisions on my own, to 5 = I prefer to leave the decisions regarding my treatment completely to my doctor) (28).

### Knowledge about ACP

A test to assess knowledge about ACP was developed based on a previous study (29). The test consisted of five true/false questions, e.g., “Effectiveness of cardiopulmonary resuscitation at the end of life” and “Whether or not to change the decision after it has been made”. We administered this questionnaire at baseline and 6 months later.

### Advance Care Planning Engagement Survey

The 15-item version of the Advance Care Planning Engagement Survey, developed by Sudore *et al.*, was used to assess participants’ ACP processes (self-efficacy and readiness) (30). The full version of this scale developed in 2013 includes 82 items, six shortened versions were developed in 2017 and validated for validity and reliability (31). The 15-item version focuses on two behavior change constructs (self-efficacy and readiness) in four domains (surrogate decision makers, values and QoL, leeway in surrogate decision-making, and asking doctors questions) using a 5-point scale. The mean is the score, and the range is 1–5. The higher the score, the higher the level of involvement in ACP. In this study, 15 item Japanese version was used only at the second time point (6 months later) because development of the Japanese version had not been completed at the beginning of this study (32). The Cronbach’s alpha in this study was 0.93.

### Comprehensive Quality of Life Outcome (CoQoLo) scale

It has been reported that ACP makes it possible for the patient to reach the end of life in the desired place and circumstances and to achieve what the patient and their family to consider to be a “good death” (33). The CoQoLo is a validated and reliable scale that allows patients themselves to rate the concepts that constitute a “good death” before their own death (23). The original 54 items version and the shortened 18 items version are available, and in this study we used the 18-item version. Each item was evaluated on a seven-point Likert scale (1 = totally disagree, to 7 = totally agree). We administered this questionnaire at baseline and at 6 months. The Cronbach’s alpha in this study was 0.89 at baseline and 0.84 after 6 months.

### Pilot test of the questionnaires

For the purpose of testing the face validity and content validity of the questionnaire, five chronically ill patients over 65 years old were recruited by snowball sampling and

asked to complete the questionnaire. After completing the questionnaire, a structured interview was conducted to check whether the font size and line spacing were appropriate, whether there were any questions that were difficult to understand or to answer, whether questions lacked appropriate response options, and whether there were any questions that participants did not want to answer or that they found offensive. Based on the results, the questionnaire was revised to ensure the face and content validity of the questionnaire.

### Statistical analysis

Descriptive statistics were conducted for each sociodemographic variable.

For knowledge of ACP and QoCoLo, *t*-tests were conducted for group differences in the change from baseline to 6 months. To address confounding bias, multiple regression analysis was conducted, with the change from baseline to 6 months as the dependent variable for each of these two indicators. Independent variables were the presence or absence of ACP discussions, sex, age (years), whether living with family, duration from diagnosis (months), CCI, health literacy, decision-making preferences, ACP-related experiences, and baseline scores for each. For the QoCoLo, to confirm which question items among the scales were affected by the intervention, we conducted multiple regression analysis with the same independent variables for 8 items related to ACP, out of the total 18 items.

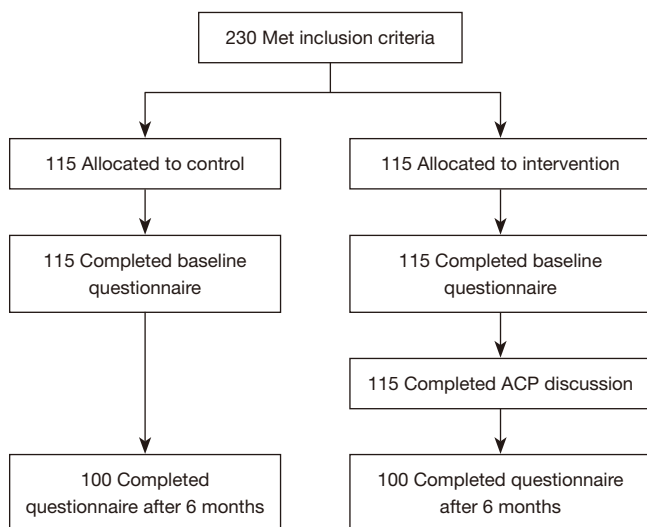
For the ACP Engagement Survey, *t*-tests were conducted for differences between groups. Then, multiple regression analysis was conducted with the score at 6 months as the dependent variable. The dependent variables were: presence or absence of ACP discussions, sex, age (years), whether living with family, duration from diagnosis (months), CCI, health literacy, decision-making preferences, and ACP-related experiences.

Due to the specifications of online research, no missing values will be generated. In addition, dropouts were not included in the analysis.

All tests were two-sided, with the significance level set at 5%. IBM SPSS version 25 (IBM Corp., Armonk, NY, USA) was used for the analysis.

### Results

We recruited participants who met the eligibility criteria of older adults with chronic diseases and who were



**Figure 2** Study flow chart. ACP, advance care planning.

registered with an Internet survey company. A total of 115 participants in the intervention group and 115 participants in the control group consented to participate in the study, and a total of 230 participants responded to the baseline questionnaire. One hundred participants in the intervention group participated in ACP discussions and responded to the questionnaire. Two hundred participants also responded to the survey 6 months after the baseline (follow-up rate: 87%), and all 200 participants were included in the final analysis (Figure 2). Thirty did not respond to the request and the reason was unknown.

The sociodemographic characteristics of participants in this study are shown in Table 1. The mean participant age was 69.6 years, with the youngest age 65 years, and the oldest 81 years old.

The results of knowledge scores and crude analysis are shown in Table 2 for the overall group and for each group. And the results of multiple regression analysis regarding differences in knowledge scores between the two time points as the dependent variable are shown in Table 3. There was no significant association between the change in knowledge score and the presence of ACP discussion.

The scores for comprehensive QoL and the results of the crude analysis are shown in Table 2. In the intervention group, there was a tendency toward an increase from baseline to 6 months. The results of multiple regression analysis with the change in comprehensive QoL score at two time points as the dependent variable are shown in Table 3. A statistically significant association was detected between

the change in comprehensive QoL and the presence of ACP discussions ( $P=0.01$ ). The results of multiple regression analysis for the change in each item of the CoQoLo showed a statistically significant association between the presence of ACP discussion in four items: “I feel that it is hard to bother others (reverse scoring:  $P=0.018$ )”, “I am able to spend time in a natural way ( $P=0.006$ )”, “I am able to tell my loved ones what is important to me ( $P=0.011$ )”, “I am able to ask what I want to know about what will happen in the future ( $P=0.001$ )”.

The ACP Engagement Survey scores at 6 months for the overall group and for each group and the results of the crude analysis are shown in Table 4. The scores tended to be higher in the intervention group than in the control group. The results of multiple regression analysis adjusted for sociodemographic variables are shown in Table 5. A statistically significant association was detected between ACP Engagement Survey scores and the presence of ACP discussions ( $P=0.044$ ). In the subscales, only the readiness score showed a significant association with the presence of ACP discussions ( $P=0.01$ ; Table 5).

## Discussion

This study examined the effect of ACP discussions on ACP engagement and comprehensive QoL in older adults with chronic diseases by comparing them with a control group. The results showed that having discussions about ACP was associated with higher ACP readiness and higher comprehensive QoL.

### Discussion of results

The ACP process in terms of self-efficacy and readiness was measured using the ACP Engagement Survey. Participants that held ACP discussions tended to be more engaged in ACP than the control group, and the impact of the intervention was particularly seen with regard to readiness. The readiness items of the ACP Engagement Survey were constructed based on the Transtheoretical Model. The result means that the intervention group is in a state that is more likely to take the action of ACP. In this study, a trained nurse presented to each participant narratives of patients with similar diseases at the end of their lives. Narratives from people with similar characteristics evoke greater emotions, are more memorable, and lead to changes in behavior (34). This enabled the participants to imagine the end of life while being exposed to the ideas of people



**Table 1** Participant characteristics

Variables	Total (n=200)	Intervention (n=100)	Control (n=100)	P*
Sex, n (%)				
Male	177 (88.5)	86 (86.0)	91 (91.0)	0.268
Female	23 (11.5)	14 (14.0)	9 (9.0)	
Age (years), mean $\pm$ SD	69.6 $\pm$ 3.6	69.3 $\pm$ 3.4	70.0 $\pm$ 3.8	0.155
Education level, n (%)				0.963
Junior high school	2 (1.0)	1 (1.0)	1 (1.0)	
High school	39 (19.5)	18 (18.0)	21 (21.0)	
College	14 (7.0)	7 (7.0)	7 (7.0)	
University	121 (60.5)	63 (63.0)	58 (58.0)	
Postgraduate	24 (12.0)	11 (11.0)	13 (13.0)	
Charlson comorbidity index, mean $\pm$ SD	0.9 $\pm$ 1.6	0.6 $\pm$ 1.5	1.2 $\pm$ 1.6	0.012
Duration from diagnosis (months), mean $\pm$ SD	134.8 $\pm$ 99.2	157.5 $\pm$ 102.3	112.2 $\pm$ 91.0	0.001
Living with family, n (%)				0.428
Yes	178 (89.0)	78 (78.0)	90 (90.0)	
No	22 (11.0)	12 (12.0)	10 (10.0)	
Health literacy, mean $\pm$ SD	3.7 $\pm$ 0.6	3.8 $\pm$ 0.6	3.7 $\pm$ 0.6	0.317
Decision-making preferences, n (%)				0.110
Active	12 (6.0)	3 (3.0)	9 (9.0)	
Active shared	57 (28.5)	26 (26.0)	31 (31.0)	
Collaborative	97 (48.5)	55 (55.0)	42 (42.0)	
Passive shared	21 (10.5)	12 (12.0)	9 (9.0)	
Passive	13 (6.5)	4 (4.0)	9 (9.0)	
ACP-related experiences, n (%)				
Discussion with medical professional	9 (4.5)	5 (5.0)	4 (4.0)	1.000
AD/LW	3 (1.5)	0	3 (3.0)	0.246

\*, age, Charlson risk index, duration of illness, and health literacy by *t*-test. Educational level, decision-making preferences, and ACP-related experiences by Fisher's exact test. Hospitalization experience and living with family by chi-square test. ACP, advance care planning; SD, standard deviation; AD, advance directive; LW, living will.

**Table 2** Comparison of knowledge and comprehensive QoL (CoQoLo) with and without ACP discussion

Variables	Total (n=200)		Intervention (n=100)		Control (n=100)		Mean difference (95% CI)*	P†
	Baseline	At 6 months	Baseline	At 6 months	Baseline	At 6 months		
Knowledge	3.2 $\pm$ 1.5	3.3 $\pm$ 1.4	3.5 $\pm$ 1.2	3.4 $\pm$ 1.3	3.1 $\pm$ 1.6	3.1 $\pm$ 1.5	0.0 (-0.4-0.4)	0.964
CoQoLo	89.5 $\pm$ 14.1	89.8 $\pm$ 11.7	90.1 $\pm$ 13.3	92.5 $\pm$ 10.8	88.8 $\pm$ 14.8	87.2 $\pm$ 12.0	7.1 (2.6-11.6)	<0.001

\*, between-group differences in pre-post differences. †, *t*-test for differences. CoQoLo, Comprehensive Quality of Life Outcome; ACP, advance care planning; CI, confidence interval.

**Table 3** Multiple regression analysis for knowledge and comprehensive QoL (CoQoLo)

Variables	B	$\beta$	95% CI	P*	Adjusted R <sup>2</sup>
Knowledge					0.19
Presence of ACP discussion	0.07	0.02	-3.48-4.59	0.786	
Sex	0.10	0.21	-0.34-0.47	0.748	
Age	-0.13	-0.33	-0.07-0.04	0.621	
Living with family	0.37	0.08	-0.24-0.98	0.232	
Duration from diagnosis	-0.01	-0.05	-0.03-0.01	0.460	
CCI	-0.41	-0.44	-0.16-0.08	0.513	
Health literacy	0.43	0.18	0.11-0.75	0.009	
Decision-making preferences	0.22	0.14	0.02-0.43	0.034	
ACP-related experience	0.22	0.10	-0.09-0.52	0.158	
Baseline score	0.39	0.37	0.25-0.53	<0.001	
CoQoLo					0.24
Presence of ACP discussion	4.11	0.18	1.01-7.22	0.010	
Sex	2.63	0.07	-2.00-7.26	0.264	
Age	0.04	0.01	-0.37-0.46	0.839	
Living with family	1.87	0.05	-2.88-6.62	0.438	
Duration from diagnosis	0.00	0.02	-0.01-0.02	0.795	
CCI	0.04	0.01	-0.91-0.99	0.937	
Health literacy	6.97	0.36	4.47-9.47	<0.001	
Decision-making preferences	1.62	0.13	0.03-3.20	0.046	
ACP-related experience	0.28	0.02	-2.07-2.63	0.814	
Baseline score	0.17	0.21	0.67-0.28	0.002	

\*, multiple regression analysis with the change in ACP knowledge and CoQoLo as dependent variables. CoQoLo, Comprehensive Quality of Life Outcome; ACP, advance care planning; CCI, Charlson comorbidity index; CI, confidence interval.

**Table 4** Comparison of ACP engagement with and without ACP discussion

Variables	Total (n=200)	Intervention (n=100)	Control (n=100)	Mean difference (95% CI)*	P <sup>†</sup>
ACP engagement survey	2.4±0.9	2.5±1.0	2.3±0.7	0.3 (0.1-0.5)	0.016
Self-efficacy	19.1±6.2	19.4±6.3	18.7±6.2	0.8 (-1.0 -2.5)	0.396
Readiness	17.0±8.6	18.8±9.9	15.2±6.5	3.6 (1.3-6.0)	0.003

\*, between-group differences; †, t-test for differences. ACP, advance care planning; CI, confidence interval.

with similar values.

Many Asians, especially the elderly, feel barriers to expressing their opinions to their physician (31). They also do not want to bother the people around them because of them (35). ACP for people with these beliefs does not start

with just giving them knowledge and information (35). In this study, nurses who completed the Communication Skills Training for ACP (E-FIELD) conducted the ACP discussion (24). This intervention included simulations of communication in specific situations, such as how to

**Table 5** Multiple regression analysis of ACP engagement

Variables	B	$\beta$	95% CI	P*	Adjusted R <sup>2</sup>
ACP engagement survey					0.14
Presence of ACP discussion	0.26	0.15	0.01–0.52	0.044	
Sex	–0.05	–0.02	–0.41–0.31	0.778	
Age	0.02	0.06	–0.02–0.05	0.360	
Living with family	–0.19	–0.07	–0.56–0.18	0.308	
Duration from diagnosis	0.00	–0.08	0.00–0.00	0.239	
CCI	0.03	0.05	–0.08–0.21	0.554	
Health literacy	0.28	0.20	0.09–0.47	0.004	
Decision-making preferences	–0.04	–0.04	–0.16–0.08	0.520	
ACP-related experience	0.36	0.28	0.18–0.55	<0.001	
Self-efficacy (subscale)					0.09
Presence of ACP discussion	0.12	0.01	–1.68–1.93	0.893	
Sex	0.11	0.01	–2.58–2.81	0.935	
Age	0.03	0.02	–0.21–0.27	0.787	
Living with family	–2.22	–0.11	–4.97–0.53	0.115	
Duration from diagnosis	–0.01	–0.08	–0.01–0.00	0.253	
CCI	0.18	0.05	–0.38–0.73	0.530	
Health literacy	2.57	0.25	1.15–3.98	<0.001	
Decision-making preferences	–0.12	–0.02	–1.05–0.80	0.791	
ACP-related experience	2.13	0.22	0.69–3.49	0.002	
Readiness (subscale)					0.13
Presence of ACP discussion	3.23	0.19	0.80–5.67	0.010	
Sex	–0.78	–0.03	–4.42–2.85	0.672	
Age	0.18	0.07	–0.15–0.50	0.287	
Living with family	–0.80	–0.03	–2.93–4.51	0.673	
Duration from diagnosis	–0.01	–0.08	–0.02–0.01	0.238	
CCI	0.71	0.13	–0.03–1.46	0.061	
Health literacy	1.67	0.12	–0.24–3.58	0.086	
Decision-making preferences	–0.42	–0.05	–1.66–0.83	0.510	
ACP-related experience	3.44	0.26	1.61–5.28	<0.001	

\*, multiple regression analysis with ACP engagement and subscales (self-efficacy and readiness) as the dependent variable. ACP, advance care planning; CCI, Charlson comorbidity index; CI, confidence interval.

communicate wishes about treatment and care to physicians and loved ones. Participants that held this ACP discussions tended to be more engaged in ACP than the control group. In CoQoLo scale, the items “I feel that it is hard to bother others (reverse scoring)”, “I am able to tell my loved ones

what is important to me”, and “I am able to ask what I want to know about what will happen in the future” were significantly associated with presence of ACP discussions. It is possible that the communication skills provided to the intervention group had a broad impact not only on ACP,



but also on communication with physicians and loved ones. For elderly people living with a disease, knowing a method of communication that can be immediately adopted for communication with health care providers and loved ones may contribute to a better QoL as a patient in later life.

Palliative care has the effect of enhancing patient QoL by enabling them to maintain the activities that they value (36,37). However, these benefits are limited by a late start of palliative care (38,39). One of the main barriers to the introduction of palliative care is that communication at the start of palliative care is perceived as a declaration or admission that the patient is at the end of their life (40). By implementing ACP at a time when the patient is physically and mentally stable, the patient can be exposed to information about end-of-life care at an earlier and more stable stage. Thus, when the time comes to introduce palliative care, there may be less resistance to starting the discussion.

### *Implications for practice*

Previous studies have shown that ACP does not contribute to anxiety, depression, or hopelessness in patients (7,15,41,42). There are also reports of a preference for early ACP, regardless of illness (43). Based on these findings, early ACP is feasible for older adults with chronic diseases. Patients who have the opportunity to be involved in their medical care, such as those with chronic diseases, have the opportunity to initiate ACP discussions with their medical providers early after diagnosis. Nevertheless, some people feel uncomfortable discussing this kind of content. The best time to start a discussion is after recovery from a serious illness or treatment, or when the condition has calmed down, rather than at the time of diagnosis or the beginning of treatment (44). After a serious situation has been overcome, the patient is more aware of the need for ACP. If there are no specific triggers, one way to start is to ask patients about their experience with the death of relatives or friends. Early initiation of ACP may contribute to a higher QoL and higher quality end of life through early introduction of palliative care, in preparation for the future.

### *Limitations*

This study should be interpreted in consideration of several limitations. First, most participants in this study were men; additional research may be needed to generalize the results to women. Second, participants were informed about

the study during the recruitment process, so the study population may include more people who were interested in the study and who were more health conscious than the general population. Finally, although the study was prospective in design and the results were adjusted for measured confounders, the effect of residual confounding cannot be ruled out because of the lack of random assignment.

This study was conducted as a short-term intervention and evaluation with an introductory part of ACP discussion. However, patients' intentions may change as their medical conditions and treatments change. ACP should be ongoing and should be reviewed periodically. Trained facilitator should lead ongoing ACP discussion, triggered by changes in medical conditions or treatment, to sustain treatment and life according to the patient's wishes. It is then desirable to evaluate the achievement of "good death" for the patient, which is the true purpose of ACP.

### **Conclusions**

The findings of this study suggested that the introduction of ACP discussions to older adults with chronic diseases prior to serious conditions may increase readiness for ACP and increase comprehensive QoL in later life. Giving older adults living with chronic illnesses specific communication skills to communicate their wishes to health care providers and loved ones has the potential to improve their quality of communication with health care providers and family members in later life. In addition, the results may help to reduce health care providers' psychological barriers to initiating ACP discussions with patients at an early stage.

### **Acknowledgments**

*Funding:* None.

### **Footnote**

*Reporting Checklist:* The authors have completed the STROBE reporting checklist. Available at <https://apm.amegroups.com/article/view/10.21037/apm-21-2161/rc>

*Data Sharing Statement:* Available at <https://apm.amegroups.com/article/view/10.21037/apm-21-2161/dss>

*Conflicts of Interest:* All authors have completed the ICMJE uniform disclosure form (available at <https://apm.amegroups.com/article/view/10.21037/apm-21-2161/icoi>)

[amegroups.com/article/view/10.21037/apm-21-2161/coif](https://amegroups.com/article/view/10.21037/apm-21-2161/coif)). The authors have no conflicts of interest to declare.

**Ethical Statement:** 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 conducted in accordance with the Declaration of Helsinki (as revised in 2013). All study participants provided their written informed consent and the study design was approved the Ethics Committee of the Faculty of Medicine, University of Tokyo (Application No. 11270).

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**Cite this article as:** Okada H, Kiuchi T, Okuhara T, Kizawa Y. Effect of advance care planning discussions with trained nurses in older adults with chronic diseases in Japan. *Ann Palliat Med* 2022;11(2):412-422. doi: 10.21037/apm-21-2161