



# Relationships among Perceptions of Dying Well, Attitudes toward Advance Directives, and Preferences for Advance Directives among Elderly Living Alone

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**Purpose:** This study investigated awareness of dying well, as well as attitudes and preferences toward advance directives (ADs), among elderly individuals who lived alone. **Methods:** The participants were 173 elderly people living alone. Data were collected from July 2019 to September 2019 using questionnaires on perceptions of dying well, awareness of advance directives, and general characteristics. **Results:** The majority of participants (68.2%) stated that they had never heard of advance directives. The information they requested to include in their advance directives mostly involved decisions on pain treatment, such as the use of analgesic drugs in the final stages of a terminal disease. Perceptions of dying well were statistically significantly different according to age and education. **Conclusion:** This study discussed the attitudes and preferences of elderly living alone regarding advance directives to provide basic resources for the systematic and active use of advance directives.

**Key Words:** Aged, Death, Advance directives

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## INTRODUCTION

### 1. Background

Society is currently witnessing a growth in the number of elderly individuals who live alone either by choice or due to circumstances such as population aging, bereavement of a spouse, an increase in divorce at a later age, and a weakened sense of responsibility among younger people to support their elderly parents, all of which increase the risk of senior citizens living alone in difficult conditions and being physically and socially isolated from support systems [1]. The term “elderly living alone” refers to single elderly people who live apart from their children (if they have any). These individuals need public support or social welfare services due to changes in their social

and economic capacities. Older people living alone experience distress due to social isolation, economic hardship, the risk of chronic disease, and the death of people close to them [2], and become more vulnerable to anxiety regarding death due to the difficulties associated with living alone in later life [3]. Ng et al. [1] demonstrated an association between living alone and mortality among the elderly, and the interest in “how” to face death, the last phase of life, has been on the rise; however, most elderly living alone fail to prepare for situations related to death with specific thoughts or plans. Death is an unavoidable part of human life, and regardless of the circumstances, the meaning of death should be sought, dignity should be maintained, and the desire for dying well should be met [4]. Dying well encompasses the avoidance of meaningless life-sustaining treatment, preparation for death, and the maintenance of dig-

nity and comfort as a human being until the moment of death, which is an essential stage of human life [5]. Research into the concept of dying well has included studies [6,7] involving senior citizens aged 65 years or older living in the community [6,7] or bereaved seniors [8], but no study in Korea has yet focused specifically on senior citizens who live alone.

An advance directive (AD) is a manifestation of an individual's right to self-determination to preserve his or her personal autonomy and dignity by documenting his or her desires regarding unwanted medical practices in case it is impossible for the individual to make his or her own decisions or express preferences related to medical treatment [9].

Older people often receive life-sustaining treatment irrespective of their own wishes due to the exacerbation of underlying conditions or a loss of decision-making capacity during the end-of-life period [10]. Chang et al. [11] reported cases in which medical treatment decisions or plans could not be made due to a lack of medical information on the patient's condition, and some researchers noted that the awareness of ADs among the community-swelling elderly was low [12,13].

For most elderly people approaching the end of life, decisions related to life-sustaining treatment or ADs are not made by themselves, but by their caregivers [14], who may face an ethical dilemma caused by disagreement with medical personnel on the initiation or discontinuation of life-sustaining treatment [15]. Therefore, it is necessary for the elderly to make decisions that reflect their own values when their decision-making capacity is intact and to complete ADs based on an independent determination of whether to consent to or refuse life-sustaining treatment [16].

An AD reflects an individual's dignity and decision regarding dying well; thus, it is necessary to investigate how many elderly living alone, many of whom are highly anxious about death due to their solitary living situation, have ADs. The literature on ADs among community-dwelling seniors is extensive [3,12,17,18]; however, no previous studies focused on the elderly living alone.

Most elderly individuals hope to be fully in charge of making life-sustaining treatment decisions [3]. Although the perceptions and value of dying well among the elderly living alone should be given much consideration, the importance of perceptions of dying well has been neglected, as death at an old

age is considered a natural process or taken for granted by society. Therefore, it is necessary to investigate these perceptions among the elderly living alone in order to help them prepare for dying well and make their own decisions about life-sustaining treatment.

As the population of elderly people living alone in the community is increasing, we sought to identify the relationships between perceptions of dying well and attitudes and preferences regarding ADs among the elderly living alone in order to provide basic data for programs to help the elderly living alone make their own decisions while accepting and preparing for death.

## 2. Purpose

This study aimed to obtain insights into the perceptions of dying well and attitudes and preferences regarding ADs among senior citizens (65 years or older) living alone in the community. The specific objectives were as follows:

- 1) To characterize the perceptions of dying well among the participants.
- 2) To identify differences in perceptions of dying well according to participants' general characteristics.
- 3) To identify participants' attitudes and preferences regarding ADs.

## METHODS

### 1. Study design

This descriptive research study aimed to identify the perceptions of dying well and attitudes and preferences regarding ADs among elderly individuals (aged 65 or older) living alone in the community.

### 2. Study participants

The participants in this study were 173 elderly people (aged 65 years or older) living alone in Gwangju. They indicated that they understood the purpose of the study, had no communication problems, and voluntarily agreed to participate in the study. The inclusion criteria were as follows: 1) male or female seniors aged 65 years or older, 2) residents who lived alone (i.e., not with children or a spouse), and 3) seniors with adequate

Korean proficiency for reading and communication, who indicated that they understood the study purpose and voluntarily agreed to participate in the study.

The size of the study sample was estimated using the G\*Power 3.1.9 program. The power analysis was conducted using an alpha of 0.05, a power ( $1 - \beta$ ) of 0.80, and a medium effect size of 0.50 for a two-tailed test. The desired total sample size for detecting differences between two groups was 130. Considering a 30% dropout rate, the questionnaires were distributed to a total of 180 participants. Excluding seven participants with insincere or incomplete responses, 173 questionnaires were used in the final analysis.

### 3. Research tool

#### 1) Sociodemographic characteristics of participants

The sociodemographic characteristics of the participants were assessed with nine questions regarding age, sex, duration of living alone, religion, education level, subjective financial status, main source of income, subjective health status, and awareness of dying well. Financial status and health status were assessed in a subjective manner based on the respondents' self-reporting.

#### 2) Perceptions of dying well

A tool developed by Schwartz et al. [19] and adapted by Jeong [20] was used in this study to assess perceptions of dying well. The tool has a total of 17 questions scored on a 4-point scale and consists of three subcategories: nine questions on closure, three questions on personal control, and five questions on clinical symptoms. The answers to each question were scored from 1 point (not important at all) to 4 points (very important), and higher scores indicated higher perceptions of dying well. The reliability of the tool evaluated using Cronbach's  $\alpha$  was 0.87 at the time of development and 0.83 in the current study.

#### 3) Attitudes and preferences regarding ADs

The participants' attitudes and preferences regarding ADs were assessed using a tool that was developed by Akabayashi et al. [21] and adapted by Yun [22] into a 13-item questionnaire with permission of the original authors after translation and expert validity testing.

The following items has responses of "yes/no/don't know": awareness of ADs; making medical treatment decisions in advance in the event of an unexpected situation; intention to complete an AD; complete an AD through a surrogate; consent to life-sustaining treatment; treatment methods for a painful, incurable, terminal illness; and provision of information on the painful, incurable, terminal illness. The respondents were asked to choose all that applied among the given answer choices for reasons for consenting to ADs, content of ADs, and reasons for refusing ADs.

### 4. Data collection

Data were collected for approximately 3 months, from July 1, 2019, to September 31, 2019, after receiving approval of the Institutional Review Board. The researchers visited 12 senior centers and 10 welfare centers to explain the purpose and intention of the study. The study was conducted using a questionnaire to obtain self-reported data and the survey took about 25 minutes to complete. The completed questionnaires were collected in an envelope by the researchers and small gifts were provided to the participants.

### 5. Ethical considerations

This study was conducted after receiving approval from the Institutional Review Board of Mokpo National University (MNUIRB-20181030-SB-011-01). After explaining the purpose and method of the research, we obtained written informed consent from those who voluntarily chose to participate in the study. We explained that they could voluntarily participate in or withdraw from the study without any disadvantage and that the collected data would be kept confidential, as they would be evaluated anonymously for statistical analysis, and used for research purposes only. The collected data will be handled anonymously and stored in a locked cabinet for 3 years after the completion of the research report, after which all data will be shredded.

### 6. Data analysis

The statistical analysis of the collected data was conducted using SPSS for Windows version 23.0 (IBM Corp., Armonk, NY, USA).

1) The general characteristics, perceptions of dying well, and

attitudes and preferences regarding ADs were analyzed by descriptive statistics including number, percentage, and mean and standard deviation.

2) Differences in perceptions of dying well according to participants' general characteristics were analyzed with the t-test and analysis of variance, and the Scheffé test was used for *post hoc* analysis.

## RESULTS

### 1. General characteristics of the participants

The mean age of those surveyed was 74.67 years. There were 121 women (69.9%) and 52 men (30.1%). The average duration of living alone was 10 years, and 53 respondents (38.7%) had lived alone for 1~5 years. There were 63 elementary school graduates (36.4%), and the financial status was moder-

ate for 104 respondents (60.1%). The main source of income was a private pension for 71 respondents (41.0%), followed by support from children for 49 (28.3%). A total of 130 people (75.1%) reported that they had not heard of the concept of dying well (Table 1).

### 2. Perceptions of dying well among participants

The mean score for participants' perceptions of dying well was  $3.02 \pm 0.42$  points. Among the subcategories, the mean score for personal control was the highest with  $3.06 \pm 0.64$  points, followed by  $3.04 \pm 0.50$  points for clinical symptoms and  $3.00 \pm 0.64$  points for closure. The item with the highest score was "the ability to communicate until the moment of death" for personal control, "to die naturally without relying on medical equipment" for clinical symptoms, and "to die peacefully" for closure (Table 2).

### 3. Differences in perceptions of dying well according to participants' general characteristics

The mean score for perceptions of dying well in the elderly living alone was highest among those in their 60s ( $3.14 \pm 0.49$  points,  $F=3.49$ ,  $P=0.032$ ). The mean score for perceptions of

**Table 1.** Characteristics of Participants (N=173).

Characteristics	Categories	n (%)	Mean $\pm$ SD
Age (yr)	60~69	58 (33.5)	74.67 $\pm$ 7.20
	70~79	69 (39.9)	
	$\geq 80$	46 (26.6)	
Sex	Male	52 (30.1)	
	Female	121 (69.9)	
Duration of living alone (yr)	1~5	67 (38.7)	10.02 $\pm$ 8.71
	6~10	53 (30.7)	
	11~20	36 (20.8)	
	$\geq 21$	17 (9.8)	
Religion	Yes	88 (50.9)	
	No	85 (49.1)	
Education	No formal education	42 (24.3)	
	Elementary school	63 (36.4)	
	Middle school	36 (20.8)	
	$\geq$ High school	32 (18.5)	
Financial status	High	4 (2.3)	
	Moderate	104 (60.1)	
	Low	65 (37.6)	
Income	Pension	71 (41.0)	
	Government support	43 (24.9)	
	Children's support	49 (28.3)	
	Others	10 (5.8)	
Health status	Good	24 (13.9)	
	Moderate	106 (61.3)	
	Poor	43 (24.8)	
Information about dying well	Yes	43 (24.9)	
	No	130 (75.1)	

**Table 2.** Perceptions of Dying Well (N=173).

Items	Mean $\pm$ SD
Total	3.02 $\pm$ 0.42
Personal control	3.06 $\pm$ 0.64
That the ability to communicate be present until death	3.13 $\pm$ 0.72
That there be control of bodily functions until death	3.10 $\pm$ 0.75
That there be mental alertness until the end	2.97 $\pm$ 0.78
Clinical	3.04 $\pm$ 0.50
That it be painless or largely pain-free	3.16 $\pm$ 0.69
That it occur naturally, without technical equipment	3.18 $\pm$ 0.79
That the dying period be short	3.08 $\pm$ 0.79
That death occurs during sleep	3.03 $\pm$ 0.91
That it be sudden and unexpected	2.76 $\pm$ 0.85
Closure	3.00 $\pm$ 0.64
That it be peaceful	3.49 $\pm$ 0.69
That loved ones be present	3.34 $\pm$ 0.78
That family and doctors follow the person's wishes	3.04 $\pm$ 0.74
That the person's spiritual needs be met	3.04 $\pm$ 0.83
That the person had an opportunity to say good-bye	3.01 $\pm$ 0.85
That the person be able to accept death	2.97 $\pm$ 0.83
That the person had a chance to complete important tasks	2.80 $\pm$ 0.85
That the person was able to remain at home	2.71 $\pm$ 0.96
That the person lived until a key event	2.67 $\pm$ 0.85

dying well was statistically significantly higher among high school graduates than those who did not have any formal education ( $3.23 \pm 0.29$  points vs.  $2.92 \pm 0.38$  points,  $F=3.71$ ,  $P=0.012$ ) (Table 3).

#### 4. Attitudes and preferences regarding ADs

##### 1) Attitudes and preferences regarding ADs

Fifty-five of the participants (31.8%) reported they had heard of ADs, whereas 118 (68.2%) did not know the meaning of ADs or had never heard of them. A total of 133 participants (76.9%) reported that they agreed with the need to “put medical treatment decisions into writing in advance in the event of an unexpected illness or accident”, but only 76 (43.9%) said they were willing to complete ADs. Eighty-three participants (48.0%) agreed that they would complete an AD through a surrogate, 106 respondents (61.3%) reported that they would

“refuse life-sustaining treatment other than pain management when there is no hope for recovery and facing imminent death”, and 45 respondents (26.0%) stated that “they would undergo life-sustaining treatment irrespective of pain”. Eighty-five respondents (49.1%) indicated that “they would want to have all the information on the symptoms and progression of a disease when there is no hope for recovery and death is imminent”, whereas 78 (45.1%) reported “they would not want full disclosure” (Table 4).

##### 2) Reasons for consenting to ADs and content of ADs

The number of people who were in favor of completing an AD was 133, and the most common reason was “not to burden families with end-of-life decisions”, as indicated by 108 respondents (82.1%), which was followed by “due to the possibility of differences in opinions between themselves and the

Table 3. Perceptions of Dying Well by General Characteristics (N=173).

Characteristics	Categories	Perceptions of dying well		
		Mean ± SD	t or F	P (Scheffé)
Age (yr)	60~69	3.14 ± 0.49	3.49	0.032
	70~79	2.96 ± 0.38		
	≥80	2.97 ± 0.36		
Sex	Male	2.98 ± 0.31	-1.15	0.250
	Female	3.05 ± 0.46		
Duration of living alone (yr)	1~5	3.06 ± 0.35	0.46	0.707
	6~10	3.03 ± 0.35		
	11~20	2.97 ± 0.53		
	≥21	2.97 ± 0.59		
Religion	Yes	3.03 ± 0.42	0.12	0.908
	No	3.02 ± 0.42		
Education	No formal education <sup>a</sup>	2.92 ± 0.38	3.71	0.012 (a<b)
	Elementary school	3.02 ± 0.41		
	Middle school	2.97 ± 0.53		
	≥High school <sup>b</sup>	3.23 ± 0.29		
Financial status	High	2.88 ± 0.18	0.69	0.500
	Moderate	3.05 ± 0.44		
	Low	2.99 ± 0.39		
Income	Pension	3.12 ± 0.50	2.30	0.079
	Government support	2.98 ± 0.24		
	Children’s support	2.93 ± 0.39		
	Others	2.96 ± 0.49		
Health status	Good	3.08 ± 0.52	0.39	0.681
	Moderate	3.03 ± 0.42		
	Poor	2.99 ± 0.36		
Information about dying well	Yes	3.10 ± 0.31	1.58	0.117
	No	3.00 ± 0.45		

other family members” in 105 (78.9%) and “due to the awareness of the risk of losing decision-making capacity in the event of an unexpected accident or serious illness” in 101 (75.9%).

The content that respondents wanted to include in ADs was “decisions on pain management such as the use of painkillers in terminal stages” in 104 (78.1%), followed by “decisions

on whether to received life-sustaining treatment in the case of becoming terminally ill” in 103 (77.4%) and “end-of-life treatment decisions” in 92 (69.1%) (Table 5).

### 3) Reasons for refusing ADs

Participants were opposed to completing ADs because they expected “their family members to make decisions instead” (32 participants, 80.0%) and that “their physicians will make deci-

**Table 4.** Advance Directives and Perceptions of Dying Well (N=173).

Characteristics	Categories	n (%)
Awareness regarding ADs	Know about ADs	55 (31.8)
	Not heard of ADs	118 (68.2)
Preference for ADs	Agree	133 (76.9)
	Disagree	40 (23.1)
Intention to complete an AD	Yes	76 (43.9)
	No	97 (56.1)
Would allow a surrogate to complete an AD	Yes	83 (48.0)
	No	90 (52.0)
Preferred treatment if there is no hope of recovery	Life-sustaining treatment	45 (26.0)
	Pain management	106 (61.3)
	Unknown	22 (12.7)
Preference for information disclosure	To disclose information	85 (49.1)
	Not to disclose information	78 (45.1)
	Unknown	10 (5.8)

ADs: advance directives.

**Table 6.** Reasons for Refusing to Complete an Advance Directive (N=40).

Reasons	n (%)*
My family will make such decisions when the time is needed	32 (80.0)
My physician will make such decisions when the time is needed	24 (60.0)
I do not want to think that I will eventually die or lose my memory	22 (55.0)
It is impossible to think of such decisions as it is impossible to imagine oneself in such a situation	20 (50.0)
I am currently healthy and there is no need to consider such decisions	17 (42.5)
I feel that I will never be in situation where I would need an AD	14 (35.0)
I have no information about ADs	13 (32.5)
At my present age, there is no need to consider such decisions	6 (15.0)

\* Multiple responses.

**Table 5.** Reasons for Completing an Advance Directives and Content to be Included (N=133).

Reasons	n (%)*
I hope to not burden my family with end-of-life decisions	108 (82.1)
There may be differences in opinions between family members	105 (78.9)
I am aware that I could possibly lose my decision-making power as a result of becoming seriously ill or injured	101 (75.9)
I want to undergo the treatment of my choice	99 (74.4)
I want to decide for myself	89 (66.9)
I want to seriously consider my end-of-life decisions	79 (59.3)
An acquaintance has spoken about this issue	45 (33.8)
This issue has become a topic in the mass media	41 (30.8)
I want to make known my wishes regarding being a donor	39 (29.3)
I do not trust the current medical profession	25 (18.7)
Content	n (%)*
Treatment-related decisions regarding pain during terminal stages (e.g. whether or not you wish to be treated with painkillers)	104 (78.1)
Treatment-related decisions in the case of becoming terminally ill (e.g. whether or not you wish to receive life-extending treatment)	103 (77.4)
Treatment-related decisions regarding end-of-life decisions (e.g. whether you would like to die in the hospital)	92 (69.1)
Whether or not you would like to be informed of your diagnosis and prognosis (e.g. whether or not you would like all information to be directly disclosed to you)	90 (67.6)
Treatment-related decisions in the case of brain death or long-term comatose status	83 (62.4)
Expressing whether or not you would like to be a donor for transplantation	67 (50.3)
Expressing whether or not you would like to donate your body for educational purposes	38 (28.5)

\*Multiple responses.

sions instead” (24 participants, 60.0%), while 22 participants (55.0%) said they did not want to think about losing their cognitive capacity or eventually dying (Table 6).

## DISCUSSION

We conducted this study to establish basic data for the development of interventions to help the elderly aged 65 years or older living alone in the community prepare for dying well by identifying their attitudes and preferences regarding ADs. Here, we provide a further discussion based on our findings.

The majority of the study participants (75.1%) had not heard of the concept of dying well, and 68.2% stated that they had not heard about ADs, which indicates a lower level of perceptions of ADs among the elderly living alone in the present study than among community-dwelling seniors in a previous study, for whom the corresponding percentage was 34.5% [23]. This can be attributed to social isolation, which is a general characteristic of seniors living alone, and the lack of communication resulting from inevitable isolation due to the death of their spouses and their children’s independence. In order to raise awareness of dying well and ADs, an environment should be created where these concepts are naturally introduced through activities such as household visits and media coverage.

In the current study, we found that dying well was perceived among the participants as communicating well (i.e., without assistance) with their loved ones until the end of life and facing a peaceful death without relying on mechanical devices. A previous study also reported that dying well was considered as a comfortable death and maintaining consciousness until the moment of death among elderly individuals living alone after the death of a spouse [8], and seniors aged 65 years or over living in a nursing home were found to consider death as a law of nature [24]. These findings seem to indicate that older people do not want to passively wait for death, but instead wish to spend the rest of the time with loved ones and reflect on life, preparing for a happy closure. Among the subcategories used to assess the perception of dying well, personal control had the highest score, followed by clinical symptoms and closure. Personal control refers to an individual’s capacity to stay conscious until the last moment, to communicate with others, and to control one’s physical functions [19]. In a previous study

involving senior citizens aged 65 years or older living in the community, the seniors also expressed their desire to maintain personal control until the moment of death [25]. Therefore, it appears that the elderly wish to maintain personal control until they die. By contrast, other studies showed that closure may be more valued among seniors [26], and clinical symptoms may be more appreciated among elderly nursing home residents [27]. Judging from these reports, perceptions of dying well seem to depend on the presence of a disease or an individual’s beliefs, living circumstances, culture, and financial status.

Perceptions of dying well were associated with age and education. This may be because aging negatively affects an individual’s understanding of the term “dying well” and restricts access to medical information, whereas relatively younger people have more opportunity to access education or information on death and thus are more likely to think about dying well. In terms of education, high school graduates and above had significantly higher perceptions of dying well than those who had no formal education. This may be because higher education levels correspond to a better ability to understand and use information on dying well. Therefore, it is advised to review the content and methods of education on dying well in order to evaluate the practicality of current educational materials and to develop appropriate educational programs and systematic application methods with due consideration of age and educational background by moving away from the current one-size-fits-all approach. In a prior study, elderly people living alone were found to have a considerable fear of painful death [28]. Therefore, positively changing the perceptions of dying well among the elderly living alone according to their age or education level will allow them to have dying well and increase the likelihood of a comfortable end-of-life experience.

In our survey on attitudes and preferences regarding ADs, 68.2% of those surveyed stated that they had never heard of ADs. This finding is line with previous studies, which demonstrated a lack of awareness of ADs among seniors living in the community [12] and institutionalized seniors [13], and another study showing that seniors residing in a nursing home avoided talking about death [24]. These findings are testament to the fact that those who should express their right to self-determination regarding unwanted treatment do not have suf-

ficient education and support to do so. Recently, various media outlets have expanded their coverage on death, including issues such as death with dignity and discontinuation of life-sustaining treatment, and interest in death has also grown in society as a whole; nonetheless, more aggressive education and awareness-raising initiatives are needed regarding ADs among the elderly living alone. Education that takes into account the individual characteristics of the elderly living alone should be provided to help them understand the meaning and necessity of ADs from their perspective and then to make independent end-of-life treatment decisions before they actually engage in completing ADs.

Among the questions on attitudes and preferences regarding ADs, 76.9% of the participants agreed with the idea that “they should express their opinions on medical treatment in advance in case they lose decision-making capacity in unexpected circumstances”, but only 43.9% reported they intended to complete ADs. In a prior study of community-dwelling senior citizens, 86.7% reported being willing to complete ADs after receiving a sufficient explanation of the document [28]. Despite low levels of awareness, attitudes toward ADs seem to change positively after individuals receive an explanation about the need for ADs, which underscores the need to provide education on ADs. In the same vein, a previous study of institutionalized seniors demonstrated that perceptions of ADs influenced their intention to complete ADs [18]. Therefore, it is thought that if the value of ADs is well established among the elderly by providing information or education with an appropriate consideration their level of understanding, it may be possible to reduce confusion and difficulty associated with ADs.

When asked which treatment they would opt for when there is no hope for recovery from a disease inflicting severe pain and death is imminent, 61.3% of the participants stated that they would only wish to undergo treatment for controlling pain, not life-sustaining treatment. Several previous studies also showed that seniors living in a community were against life-sustaining treatment [4,7,17,23]. Instead of the prolongation of painful life caused by meaningless life-sustaining treatment for intractable diseases, they seemed to wish to die with dignity. Furthermore, they appeared to have a positive view of their right to self-determination and the choice to withdraw

life-sustaining medical treatment.

As for whether participants wanted information on their prognosis when severe pain is present, there is no hope for recovery, and death is imminent, 49.1% reported that they would want to be fully informed of their symptoms and prognosis. In a study of community-dwelling senior citizens, 80.5% wanted information related to their symptoms and prognosis [23]. These findings indicate older people have a strong will to be aware of what will happen to their body based on accurate information and to dictate specifically their preferences regarding the suspension of meaningless life-sustaining treatment or death. Otte et al. [29] suggested that medical personnel should regularly verify ADs written when patients were healthy, depending on the progress of the underlying disease or overall health condition. This could be understood as an effort to allow patients to face dying well with dignity by exercising their right to self-determination. Given the rapid increase in aging of the population and the prevalence of chronic diseases, interest in ADs and awareness-raising programs about ADs are essential in various fields, including public health, medicine, welfare, and culture.

Among the reasons for which participants agreed to state their preferences for medical treatment in advance in case they are unable to make decisions in unexpected situations, “I do not want to burden families with treatment decisions” was the most commonly cited reason. In a previous study, community-dwelling senior citizens were in favor of ADs for the same reason [23], and a similar finding was confirmed in another study of community-dwelling elderly participants, who stated they did not want to burden other people [21]. Likewise, seniors seem to think that decisions related to end-of-life care should be made by themselves [3]. We believe that articulating medical treatment decisions through ADs will reduce conflict and anxiety among family members and disagreement among medical personnel by enabling them to proceed with treatment according to patients’ stated wishes. The content that the respondents most wanted to include in the ADs was “decisions on pain management such as the use of painkillers in a terminal condition”, followed by “decisions on whether to receive life-sustaining treatment in a terminal condition”.

Among the reasons for opposition to put decisions related to medical treatment in writing in advance in case they lose



decision-making capacity in an unexpected situation, “family members will decide in such a situation” was the most common reason. This is consistent with the results of previous studies among community-dwelling seniors [21,23], and in another study, seniors aged 65 years or older indicated that they wanted their children to complete ADs [24]. Based on these results, it appears that seniors become anxious about death as they undergo repeated medical treatments, have worsening symptoms, and approach closer to death, and they tend to depend on family members or medical personnel regarding the end-of-life treatment decisions. Moreover, these findings also reflect the reality of the elderly; specifically, they do not think about the last moments of their lives despite needing to confront life-and-death issues independently, and they lack sufficient information on ADs. Considering that people who completed ADs showed higher acceptance of death [30], healthy elderly people will also be able to relieve family members or caregivers of the guilt or burden of decision-making by completed ADs on medical treatment decisions according to their own wishes and values after appropriate education. Furthermore, medical personnel should be able to provide sufficient explanations when their patients are engaging in the decision-making process, as they play an important role of accompanying their patients all the way to the deathbed.

In this study, we demonstrated the necessity of continuing to provide education on ADs based on a sufficient knowledge and understanding of characteristics of the elderly living alone to ensure accurate recognition of and judgments about ADs among this population. Furthermore, it is also essential to manage and support the decision-making process related to death with dignity to ensure that the families are involved in the process, as well as the elderly who reflect on their life and make decisions based on their wills and beliefs. In order for the elderly living alone to spend the rest of their life meaningfully and to make dignified and voluntary decisions for ADs, society must take the responsibility of creating a culture of dying well, providing professional education and awareness-raising initiatives regarding ADs, and verifying individuals’ intention to complete ADs.

Preparing for death in old age is a chief major in life and also a prerequisite for successful aging. To popularize ADs based

on their ethical basis, and thereby to facilitate dying well for the elderly living alone, it is necessary to devise education and counseling programs that take into account individuals’ level of education and understanding. The elderly will then be able to rethink their goals and priorities in life, spend the rest of their lives meaningfully, and take the initiative regarding future health plans, all of which will contribute to an improved quality of life and death with dignity.

This study has some limitations. First, the study participants were elderly people living alone who visited a local senior center and a welfare center located in the community, and 69.9% of them were women; thus, caution is needed to generalize the results to the entire elderly population living alone. Second, the financial status and health conditions of the participants were subjectively identified, and an objective assessment was not possible. In particular, considering that health conditions have a significant impact on perceptions of dying well and attitudes and preferences regarding ADs, further research should objectively evaluate the health conditions of the elderly living alone. Third, the tool used to assess attitudes and preferences regarding ADs has proven expert validity, but each question has multiple responses or “yes/no/don’t know” answer choices, which limited the analysis of the relationships of attitudes and preferences regarding ADs with perceptions of death. It is necessary to develop reliable tools that enable distinct assessments of attitudes toward and preferences for ADs in the future.

Despite these limitations, this study is significant in that it has practical and policy implications based on the identification of perceptions of dying well among elderly individuals living alone in the community and their attitudes and preferences regarding ADs.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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Concept, definition of intellectual content: EJR. Literature search: EJR, SEC. Formal analysis: SEC. Manuscript draft preparation: EJR. Manuscript editing, review and Final preparation: EJR, SEC.

## SUPPLEMENTARY MATERIALS

Supplementary materials can be found via <https://doi.org/10.14475/kjhpc.2020.23.4.241>.

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