

Attitudes of the General Population, Cancer Patients, Their Family Caregivers, and Physicians toward Dying and Death: A Nationwide Survey

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Abstract

Little is known about people's attitudes toward death. We aimed to examine attitudes toward death and to investigate their associations with health status in various participant groups. We administered nationwide questionnaires to a total of 4,107 individuals including general Korean population, cancer patients, family caregivers, and physicians. Association of attitudes toward five aspects of dying and death—the ending of life, fearing death because it is painful, anticipating an afterlife, preparing to practice charity and being remembered—and physical, mental, social, and spiritual health status were also analyzed. Attitudes differed. Most (63.4%-76.2%) accepted that death is the ending of life, 45.6%-58.8% feared a painful death, 47.6%-55.0%

anticipated an afterlife, 88.5%-93.0% expected to forgive, and 89.9%-94.1% expected to be remembered after death. The general population, cancer patients, and family caregivers had similar attitudes but had more positive attitudes than physicians on the ending of life, fearing a painful death, and anticipating an afterlife. Accepting death as the ending of life and fear of death pain were inversely associated with mental, social, spiritual, or general health status, but participants anticipating an afterlife, expecting to forgive, or expecting to be remembered showed better social, spiritual, or general health status. This nationwide study of various participant groups shows that attitudes toward dying and death were associated with mental, social, spiritual, or general health, but not physical health status. These data suggest that sensitive and skillful discussions of death and dying might contribute to peaceful end of life.

Keywords: attitudes, cancer patients, dying and death, general population, physicians, survey

1. Introduction

Despite the advances of medical diagnosis and treatment, people age (G, 1993) and die in the natural course of a critical disease (Chochinov, Hack, McClement, Kristjanson, & Harlos, 2002). Factors related to attitudes toward dying and death have become an area of interest because of the increasing population of older people in most nations (Griffith et al., 2013). Since discussing death and dying is considered a social taboo in our culture, we are separated from the actual circumstances of death even of those close to us. This deprives us of the opportunity to deepen our thoughts and achieve a psychological resolution about matters of living and dying. As a result, during a terminal illness, patients, their families, and their physicians often deny that death is imminent (Norton, 1969).

Physical, psychosocial, and spiritual concerns all arise toward the time of death (Chochinov, 2006), but little research focuses on the influence of the attitudes toward death and dying on cancer patients, their family caregivers, and their physicians (Chochinov, 2006; Griffith et al., 2013). Greater scientific understanding of these attitudes and their influence on the physical, mental, social, and spiritual health of all concerned will afford opportunities to improved end-of-life care (Chochinov, 2006; Yeun, 2005). Patients with a sense of psychosocial and spiritual well-being might be able to better cope with advancing illness and to find meaning and hope (Chochinov, 2006).

Notably, end-of-life beliefs of patients, families, and practitioners is heavily influenced by cultural background and ethnicity, and culture also determines a variety of medical practice decisions (Leclerc et al., 2014; Neimeyer, Wittkowski, & Moser, 2004). Since conflicts between the values of the patient, family, and physicians may result in poor end-of-life care (Leclerc et al., 2014; Prendergast & Puntillo, 2002), an understanding of cultural differences is crucial for providing quality end-of-life care and deciding on issues such as disclosure of bad news, end-of-life discussions, and advance care planning.

Here we examine the attitudes toward death and dying and investigate their associations with physical, mental, social, and spiritual health of the general Korean population, cancer patients, their family caregivers, and physicians. Also of interest is the question to investigate the associations between attitudes toward dying and death and self-rated health status.

2. Method

2.1 Design and Setting

Between July and October 2016, we set up a multicenter cross sectional study which surveyed the following 4 groups: cancer patients, family caregivers, and physicians from 12 large, general South Korean hospitals, and the general population.

2.2 Participants

2.2.1 Patients

Medical oncologists from the 12 hospitals were asked to identify cancer patients at outpatient clinics. Those who had cancer and consented to participate were given information about the study and then completed a self-reported questionnaire with the help of trained research staff. Individuals who agreed to participate were eligible if they were more than 18 years old, understood the intent of the study, could communicate well with an assistant, and were able to complete the questionnaires. Consecutively, 1,001 patients completed the total study process.

2.2.2 Family Caregivers

The family caregivers of cancer patients in the 12 outpatient clinics were given specific information about the study process and then completed the self-reported questionnaire with the help of trained research assistants. Those who were not able to complete the questionnaire, communicate with an interviewer, understand the study, and provide informed consent were excluded. Consecutively, 1,006 family caregivers were interviewed.

2.2.3 Physicians

We obtained a list of physicians from each of the 12 hospitals and the Korean Medical Association (KMA). All of the questionnaires were conducted online. We e-mailed each physician a recruitment packet with an application form and instructions for participating in the study.

2.2.4 General Population

Our goal was to survey 1,000 members of the general Korean population, 20-70 years of age, distributed over the 17 city and local districts. At each site, we conducted the survey in two strata (age and sex), according to the guidelines of the 2015 Census of Korea. We sampled participants through final sample selection using a probability-proportional-to-size technique, which is widely used and is the recommended method for obtaining a representative national sample (Levy PS, 2011). It is most useful when the sample groups vary considerably in size as it assures that the probability of getting into the sample is greater for members of larger groups than for those of smaller groups (Levy PS, 2011). The research staff of World Research, Inc. in Korea, conducted the survey using a structured questionnaire and professional interviewers, sampling 1,241 Koreans.

2.3 Measurement

The survey asked this question, “What do you think about dying and death?” and included 5 items: 1) ending of life, 2) death as painful, 3) an afterlife, 4) preparing to practice charity, and 5) being remembered. For each item, scores ranged from 1 to 4 (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree). Self-rated health status included five domains: physical, mental, social, spiritual, and general health status. Each domain could be evaluated on a scale of 1-5 (Excellent, Very good, Good, Poor, and Bad). The questionnaire also collected demographic information (sex, age, education level, employment status, religion, and income).

2.4 Statistical Analysis

We presented the sociodemographic characteristics of the 4 groups as both arithmetic values and percentages. If the response to any question was “strongly agree” or “agree”, the participant was classified as having a positive attitude in that category. We weighted the observations from the physicians proportional to the age and sex distributions of the whole populations of physicians according to membership statistics (Association, 2015) so as to enhance the generalizability of the findings. We conducted all further analyses after weighting the observations of physicians for age and sex distribution of the whole population.

Because we found differences in attitudes toward dying and death between the non-physician groups and the physician group in univariate analysis, we assessed whether belonging to the physician group was associated with attitudes toward dying and death using models adjusted for propensity scores for being a physician, which we calculated from prediction models including terms for sociodemographic factors (age, sex, education level, religion, and monthly income).

We investigated the associations between sociodemographic factors and attitudes using multivariate logistic regression models including terms for group and sociodemographic factors, and we determined factors related to attitudes.

To investigate the associations between attitudes toward dying and death and self-rated health status, we constructed multivariate logistic regression models adjusted for age, sex, and group, and we adjusted the models further for education level, religion, monthly income, and caregiver experience. We selected these covariates from previous analyses as being related to attitudes toward dying and death in order to construct a statistically best-fit and clinically plausible model. We used SAS statistical software version 9.4 (Cary, NC) for all analyses and calculated two-sided *P*-values.

3. Results

3.1 Baseline Socio-Demographic Characteristics of the 4 Participant Groups

Table 1 shows baseline socio-demographic characteristics of 4,107 survey participants. The median age of the participants was 46 years. The cancer patient group was older than other groups.

Table 1. Sociodemographic characteristics of the 4,107 participants in a survey about attitudes towards dying and death

Characteristic		General population	Cancer patients	Family caregivers	Physicians (unweighted)	Physicians (weighted)
		N = 1241	N = 1001	N = 1006	N = 928	N = 928
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Sex	Male	612 (49.3)	390 (39.0)	324 (32.2)	565 (60.9)	707 (76.2)
	Female	629 (50.7)	610 (60.9)	682 (67.8)	363 (39.2)	221 (23.8)
Age, years	<40	460 (37.1)	123 (12.3)	292 (29.05)	612 (66.0)	343 (36.9)
	40-49	260 (20.95)	211 (21.1)	304 (30.25)	222 (23.9)	274 (26.5)
	≥50	521 (41.98)	667 (66.6)	409 (40.7)	94 (10.1)	311 (33.6)
Education	Middle school or less	179 (14.4)	205 (20.5)	75 (7.5)	0 (0)	0 (0)
	High school	493 (39.7)	433 (43.3)	401 (39.9)	0 (0)	0 (0)
	College or higher	569 (45.9)	363 (36.3)	530 (52.7)	928 (100)	928 (100)
Job status	No	473 (38.1)	737 (74.1)	569 (56.6)	0 (0)	0 (0)
	Yes	768 (61.9)	257 (25.9)	437 (43.4)	928 (100)	928 (100)
Religion	No	727 (58.6)	462 (46.2)	494 (49.1)	386 (42.0)	350 (37.7)
	Yes	514 (41.4)	539 (53.8)	512 (50.9)	540 (58.7)	578 (62.3)
Monthly income, in 1,000 Korean won	<2,000	133 (10.7)	260 (26.0)	117 (11.6)	0 (0)	0 (0)
	2,000-2,999	183 (14.7)	196 (19.6)	183 (18.2)	0 (0)	0 (0)
	3,000-3,999	357 (28.8)	217 (21.7)	260 (25.8)	0 (0)	0 (0)
	≥4,000	568 (45.8)	328 (32.8)	446 (44.3)	928 (100)	928 (100)
Health Insurance	National Health Insurance	1215 (97.9)	931 (93.0)	941 (93.54)	928 (100)	928 (100)
	Medicaid	26 (2.1)	53 (5.3)	25 (2.5)	0 (0)	0 (0)
	National Health Insurance + Medicaid	0 (0)	16 (1.6)	38 (3.8)	0 (0)	0 (0)

3.2 Differences in Attitudes toward Dying and Death of 4 Participant Groups

We observed significant differences between physicians and the non-physician groups in the 5 attitudes toward dying and death (Figure 1). The majority in all 4 groups agreed with the idea that life ends with death, that people should prepare to forgive as their life is ending, and that people should be remembered. Slightly over half the general population, cancer patients, and family caregivers feared death and agreed that life continues after death while slightly less than half the physicians did not. After adjusting for propensity score estimated from sociodemographic factors (sex, age, education level, religion, and income), we observed significant differences between non-physicians and physicians in attitudes towards death as the end of life, death as painful or fearful, and the existence of an afterlife (Table 2).

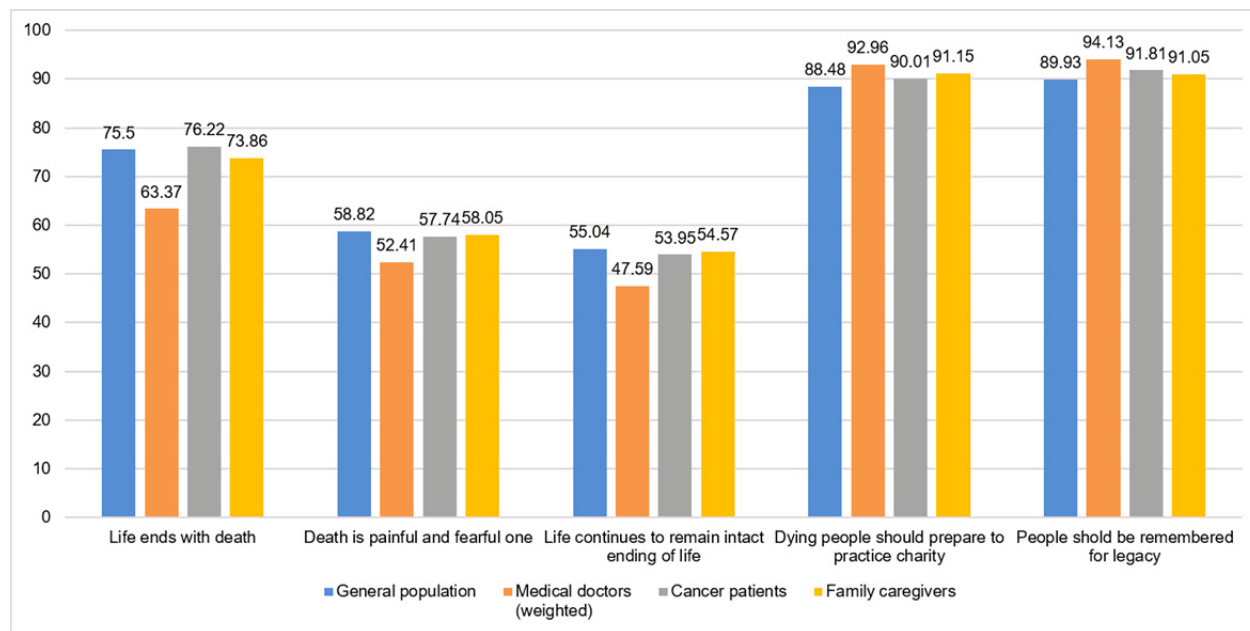


Figure 1. Attitudes toward dying and death by participant group (%)

Table 2. Attitudes toward dying and death of non-physicians and physicians, after adjustment for sociodemographic factors

Variable	Attitude ^c	Non-physicians ^a n = 3248	Physicians n = 928	P-value ^b
Life ends with death	Negative	805 (24.8)	340 (36.6)	<0.001
	Positive	2443 (75.2)	588 (63.4)	
Death is painful and therefore to be feared	Negative	1356 (41.7)	505 (54.4)	0.027
	Positive	1892 (58.3)	423 (45.6)	
Life continues after death	Negative	1476 (45.4)	486 (52.4)	<0.001
	Positive	1772 (54.6)	442 (47.6)	
Dying people should prepare to practice charity	Negative	332(10.2)	65(7.0)	0.500
	Positive	2916(89.8)	863(93.0)	
People should be remembered	Negative	297(9.1)	54(5.9)	0.837
	Positive	2951(90.9)	874(94.1)	

a. Non-physicians included the general population, cancer patients, and family caregivers.

b. Difference in attitudes toward death in non-physicians and physicians after adjustment for propensity score estimated from sociodemographic factors (sex, age, education level, religion, and income)

c. A “strongly agree” or “agree” response to a question was considered positive.

3.3 Associations between Socio-Demographic Characteristics and Attitudes toward Dying and Death

Table 3 demonstrates the association of attitudes toward dying and death with socio-demographic characteristics. A positive attitude toward death as the end of life was significantly associated with male sex and the absence of religion. Regarding death as something to be feared was significantly associated with lower education and the absence of religion. Believing in an afterlife was significantly associated with female sex, the presence of religion, and a monthly income higher than 3,000 KRW (2,623 USD). A positive attitude for preparing to forgive was significantly associated with younger age (<50), the presence of religion, and having a caregiver experience. A

positive attitude for being remembered after death was significantly associated with having a higher education and the presence of religion.

Table 3. Associations between sociodemographic features and attitudes toward dying and death

	Life ends with death		Death is painful and fearful one		Life continues to remain intact ending of life		Dying people should prepare to practice charity		People should be remembered for legacy		
	N (%)	Positive	N (%)	Positive	N (%)	Positive	N (%)	Positive	N (%)	Positive	
Stratified models		<i>p</i> -value		<i>p</i> -value		<i>p</i> -value		<i>p</i> -value		<i>p</i> -value	
Group											
General population	304 (24.5)	937 (75.5)	< 0.001	511 (41.2) 730 (58.8)	0.001	558 (45.0) 683 (55.0)	< 0.001	143 (11.5) 1098 (88.5)	N.S.	125 (10.1) 1116 (89.9)	N.S.
Cancer patients	238 (23.8)	763 (76.2)		423 (42.3) 578 (57.7)		461 (46.1) 540 (54.0)		100 (10.0) 901 (90.0)		82 (8.2) 919 (91.8)	
Family caregivers	263 (26.1)	743 (73.9)		422 (42.0) 584 (58.1)		457 (45.4) 549 (54.6)		89 (8.9) 917 (91.2)		90 (9.0) 916 (91.1)	
Physicians	340 (36.6)	588 (63.4)		505 (54.4) 423 (45.6)		486 (52.4) 442 (47.6)		65 (7.0) 863 (93.0)		55 (5.9) 874 (94.1)	
Sex											
Male	542 (26.6)	1492 (73.4)	0.014	927 (45.6) 1106 (54.4)	N.S.	1028 (50.6) 1006 (49.5)	0.017	188 (9.2) 1846 (90.8)	N.S.	172 (8.5) 1861 (91.5)	N.S.
Female	603 (28.2)	1538 (71.8)		933 (43.6) 1208 (56.4)		935 (43.6) 1207 (56.4)		210 (9.8) 1932 (90.2)		179 (8.4) 1962 (91.6)	
Age, yr											
<50	626 (27.6)	1641 (72.4)	N.S.	1063 (46.9) 1203 (53.1)	N.S.	1082 (47.7) 1185 (52.3)	N.S.	191 (8.4) 2075 (91.6)	0.032	166 (7.3) 2100 (92.7)	N.S.
≥50	519 (27.2)	1390 (72.8)		798 (41.8) 1112 (58.2)		881 (46.1) 1029 (53.9)		206 (10.8) 1704 (89.2)		185 (9.7) 1724 (90.3)	
Education											
Middle school or less	112 (24.4)	347 (75.6)	N.S.	178 (38.8) 281 (61.2)	< 0.001	225 (49.0) 234 (51.0)	N.S.	53 (11.6) 406 (88.5)	N.S.	60 (10.9) 409 (89.1)	0.012
High school	315 (23.7)	1012 (76.3)		501 (37.8) 826 (62.3)		585 (44.1) 742 (55.9)		138 (10.4) 1189 (89.6)		142 (10.7) 1185 (89.3)	
College or higher	691 (30.3)	1586 (69.7)		1134 (49.8) 1143 (50.2)		1099 (48.3) 1178 (51.7)		194 (8.5) 2083 (91.5)		153 (6.7) 2124 (93.3)	
Religion											
No	374 (18.3)	1667 (81.7)	< 0.001	835 (40.9) 1206 (59.1)	<0.001	1182 (57.9) 859 (42.1)	< 0.001	224 (11.0) 1817 (89.0)	0.004	200 (9.8) 1841 (90.2)	0.003
Yes	771 (36.1)	1363 (63.9)		1026 (48.1) 1108 (51.9)		781 (36.6) 1353 (63.4)		173 (8.1) 1961 (91.9)		152 (7.1) 1982 (92.9)	
Monthly income in 1000 Korean won											
<3,000	267 (24.9)	805 (75.1)	N.S.	449 (41.9) 623 (58.1)	N.S.	529 (49.3) 543 (50.7)	0.009	119 (11.1) 953 (88.9)	N.S.	112 (10.5) 960 (89.6)	N.S.
≥3,000	862 (28.1)	2205 (71.9)		1397 (45.5) 1670 (54.5)		1417 (46.2) 1650 (53.8)		275 (9.0) 2792 (91.0)		235 (7.7) 2831 (92.3)	

Health Insurance															
National Health Insurance	1115 (27.8)	2900 (72.2)	N.S.	1802 (44.9)	2213 (55.1)	N.S.	1896 (47.2)	2119 (52.8)	N.S.	373 (9.3)	3642 (90.7)	N.S.	329 (8.2)	3686 (91.8)	N.S.
Medicaid	24 (23.1)	80 (76.9)		48 (46.2)	56 (53.9)		52 (50.0)	52 (50.0)		13 (12.5)	91 (2.2)		12 (11.5)	92 (88.5)	
Comorbidity															
No	843 (28.3)	2141 (71.8)	N.S.	1353 (45.4)	1630 (54.6)	N.S.	1420 (47.6)	1564 (52.4)	N.S.	276 (9.2)	2708 (90.8)	N.S.	247 (8.3)	2737 (91.7)	N.S.
Yes	302 (25.3)	890 (74.7)		507.3 (42.6)	685.0 (57.5)		543 (45.5)	650 (54.5)		122 (10.2)	1071 (89.8)		104 (8.8)	1099 (91.2)	
Caregiver experience															
No	533 (25.2)	1580 (74.8)	N.S.	924 (43.7)	1190 (56.3)	N.S.	987 (46.7)	1126 (53.3)	N.S.	226 (10.7)	1887 (89.3)	0.029	175 (8.3)	1939 (91.7)	N.S.
Yes	612 (29.7)	1451 (70.3)		937 (45.4)	1126 (54.6)		976 (47.3)	1087 (52.7)		171 (8.3)	1892 (91.7)		177 (8.6)	1886 (91.4)	

Abbreviations: yr, year; N.S, non-significant;

a. p-value was estimated by chi-square test or Fisher’s exact test, in some cases the cell value < 5%.

3.4 Multivariable Logistic Regression Models for Association between Attitudes toward Dying and Death and Self-Rated Health Status

Table 4 shows the results of multivariable logistic regression analysis examining the association between attitudes toward dying and death and self-rated health status. Two models were constructed: model 1 was adjusted for age, sex, and group; model 2 was further adjusted for education, religion, monthly income, and caregiver experience, which we found to be associated with attitudes toward dying and death. Attitudes toward death as being the end of life and to be feared were inversely associated with mental (odds ratio [OR] = 0.84; 95% CI = 0.72, 0.98) and spiritual health status (OR = 0.79; 95% CI = 0.68, 0.93). Believing that death was to be feared was also inversely associated with mental (OR = 0.79; 95% CI = 0.69, 0.91), social (OR = 0.77; 95% CI = 0.67, 0.89), spiritual (OR = 0.76; 95% CI = 0.65, 0.87), and general health status (OR = 0.82; 95% CI = 0.71, 0.95). Participants believing in an afterlife showed better spiritual health status than those who did not (OR = 1.35; 95% CI = 1.16, 1.97). The attitudes toward forgiveness was positively associated with social (OR = 1.40; 95% CI = 1.10, 1.77), spiritual (OR = 1.51; 95% CI = 1.16, 1.97), and general health status (OR = 1.47; 95% CI = 1.13, 1.92). Belief of being remembered after death was also positively associated with social (OR = 1.43; 95% CI = 1.10, 1.86) and spiritual health status (OR = 1.28; 95% CI = 0.98, 1.68).

Table 4. Multivariable logistic regression analysis for associations between attitudes toward dying and death and self-rated health status

Self-rated health Status	PHS (more than very good)				MHS (more than very good)			
	Model 1 ^a		Model 2 ^b		Model 1 ^a		Model 2 ^b	
Stratified models	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Life ends with death								
Negative	1 (Ref)		1 (Ref)		1 (Ref)		1 (Ref)	
Positive	0.94 ^c	0.80-1.10	0.95 ^c	0.81-1.12	0.82 ^c	0.70-0.95	0.84 ^c	0.72-0.98
Death is painful and therefore to be feared								
Negative	1 (Ref)		1 (Ref)		1 (Ref)		1 (Ref)	
Positive	0.90 ^c	0.78-1.03	0.93 ^c	0.80-1.08	0.77 ^c	0.67-0.88	0.79 ^c	0.69-0.91

Life continues after death									
Negative	1 (Ref)		1 (Ref)		1 (Ref)		1 (Ref)		
Positive	1.06	0.92-1.22	1.03	0.89-1.20	1.11	0.97-1.27	1.09	0.94-1.26	
Dying people should prepare to practice charity									
Negative	1 (Ref)		1 (Ref)		1 (Ref)		1 (Ref)		
Positive	1.13 ^c	0.88-1.45	1.11	0.86-1.43	1.27 ^c	1.00-1.61	1.25	0.98-1.60	
People should be remembered									
Negative	1 (Ref)		1 (Ref)		1 (Ref)		1 (Ref)		
Positive	1.11	0.85-1.43	1.04	0.80-1.36	1.23	0.96-1.59	1.20	0.93-1.56	

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval, Ref, reference, PHS, physical health status; MHS, mental health status; SHS, social health status; SpHS, spiritual health status; GHS, general health status;

- a. adjusted for age, sex, and group
- b. adjusted for age, sex, group, education, religion, monthly income, and caregiver experience
- c. $P < 0.05$

Table 4. Multivariable logistic regression analysis for associations between attitudes toward dying and death and self-rated health status (continued)

Self-rated health Status	SHS (more than very good)				SpHS (more than very good)				GHS (more than very good)			
	Model 1 ^a		Model 2 ^b		Model 1 ^a		Model 2 ^b		Model 1 ^a		Model 2 ^b	
Stratified models	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Life ends with death												
Negative	1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)	
Positive	0.86 ^c	0.74-0.99	0.89	0.76-1.04	0.70 ^c	0.60-0.81	0.79 ^c	0.68-0.93	0.92	0.79-1.08	0.97	0.82-1.15
Death is painful and therefore to be feared												
Negative	1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)	
Positive	0.74 ^c	0.64-0.84	0.77 ^c	0.67-0.89	0.71 ^c	0.62-0.82	0.76 ^c	0.65-0.87	0.79 ^c	0.69-0.91	0.82 ^c	0.71-0.95
Life continues after death												
Negative	1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)	
Positive	1.08	0.94-1.23	1.04	0.90-1.20	1.55 ^c	1.35-1.79	1.35 ^c	1.16-1.57	1.13	0.98-1.30	1.07	0.92-1.25
Dying people should prepare to practice charity												
Negative	1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)	
Positive	1.40 ^c	1.10-1.77	1.33 ^c	1.04-1.70	1.62 ^c	1.25-2.09	1.51 ^c	1.16-1.97	1.54 ^c	1.19-1.99	1.47 ^c	1.13-1.92
People should be remembered												
Negative	1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)		1(Ref)	
Positive	1.53 ^c	1.19-1.98	1.43 ^c	1.10-1.86	1.39 ^c	1.07-1.81	1.28	0.98-1.68	1.3	0.99-1.69	1.22	0.93-1.61

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval, Ref, reference, MHS, mental health status; SHS, social health status; SpHS, spiritual health status; GHS, general health status;

- a. adjusted for age, sex, and group
- b. adjusted for age, sex, group, education, religion, monthly income, and caregiver experience
- c. $P < 0.05$

4. Discussion

This nationwide study of the general population, patients with cancer, their family caregivers, and physicians provides insight into how attitudes toward dying and death influence a population's health — mental, social, and spiritual — and suggests directions for education in how people perceive of dying and death (Chochinov, 2006).

In this study, at least 2/3 of the participants believed that life ends with death, and about 1/2 feared death. To a person enjoying life, dying is thought of as a potential loss (Norton, 1969). Many people regard the unpleasant subjects of death and dying as a social taboo. In contrast, 90% of our study participants thought that the end of life was a time to prepare to show forgiveness and believed that they would be remembered, thus transcending death (Chochinov, 2006). Physicians, however, were found to be somewhat less fearful of death and more satisfied than the other groups to just be remembered. This study provided evidence that attitudes toward death vary in the general population, cancer patients, their family caregivers, and physicians. Since physicians frequently witness dying and death, they may accept death as a natural event and see no need to be afraid (Griffith et al., 2013; Neimeyer et al., 2004; Yeun, 2005). Firefighters were found fear death less than lower-risk groups, including nursing home patients and a control group (Griffith et al., 2013).

When dying, viewing death as a continuum with being remembered as opposed to annihilation allows for reevaluation of one's life activities and can add meaning, purpose, value, and hope in the time left. This is particularly important in the context of palliative care (Chochinov, 2006). Research comparing the attitudes of different groups toward dying and death should be continued to identify themes associated with attitudes (Griffith et al., 2013).

The multidimensional nature of the fear of death differs among age groups (Gesser, 1987; Kastenbaum, 2000; Neimeyer et al., 2004), and the elderly express less fear of dying and death than the middle-aged (Cicirelli, 2001). Our study did not differentiate attitudes towards fear of death and dying between age groups, but younger participants showed a slightly more positive attitude towards preparing to practice charity during the end of life. Interestingly, women in our study were more likely than men to not regard death as the end of life but to believe in an afterlife. Other studies, however, show that age and sex are unrelated to death concerns (Fortner, 2000; Tomer, 2000). Our findings on the association of education level and income on attitudes towards death and dying suggest that more investigations should consider the possibility of a complex pattern of demographic factors (Neimeyer et al., 2004).

Our finding that differences between participants' attitudes toward death and dying varied with religious beliefs is in agreement with other studies including Turkey, and other Korean study (Cevik & Kav, 2013; Yeun, 2005) and suggests that physicians delivering end-of-life care should consider a patient's religion and refer patients to chaplains as appropriate (Petecet & Balboni, 2013).

Spiritual well-being imbues dying patients with a sense of purpose or meaning. In McClain-Jacobson's study of 276 palliative care cancer inpatients (McClain-Jacobson et al., 2004), belief in an afterlife was not significantly associated with depression or anxiety when spirituality levels were controlled for, but we found that the belief that death was the end of life and to be feared was negatively associated with mental, social, spiritual, or general health status while participants believing in an afterlife, preparing to forgive, or expecting to be remembered showed better social, spiritual, or general health status than others. Even when participants' religiosity was controlled for, the effect of attitude toward death did not disappear, suggesting that such attitudes have an independent effect on health status (Chochinov, 2006).

In dealing with issues of dying and death, it is important to acknowledge that each individual is an integrated whole with physical, mental, social, and spiritual aspects. Death as a taboo subject in our society derives from our social response to the confluence of mental, social, and spiritual concerns that arise toward the time of death (Chochinov, 2006).

In spite of the study strengths, the current study has several limitations. First, although a large study, the patients and family caregivers were recruited from general hospitals, which limits the generalizability of the findings, but we also collected data from the general population and compared attitudes. Another limit to generalizability is that the study was conducted in Korea and the findings may not apply to other cultures. In this paper, we focused to analyze the influence of attitudes toward dying and death on health status in Korea, and analyzed the trends with comparison of other studies, however, we did not compare attitudes depending on the culture of each country systematically. Therefore, additional comparison of attitudes depending on the culture of each country should be conducted in the further studies. Finally, since this is cross-sectional study, we could not examine the causality influencing attitudes toward dying and death on health status. Further cohort studies or randomized controlled

trials are needed to confirm the associations suggested by our findings.

5. Conclusions

Our understanding of the influence of attitudes toward dying and death on health status based on our study results will afford opportunities to improve care toward the end of life. Interventional strategies with holistic care sensitive to these attitudes might contribute effectively to peaceful end of life (Chochinov, 2006). Skillful discussions of physicians about death and dying with various groups, including the general population, patients, and their caregivers, may provide an opportunity to achieve a psychological resolution concerning matters of dying (Norton, 1969), and to improve their health status. Seriously ill patients suffer profound distress due to unmet holistic care needs during the final stages of their illness (Periyakoil, Kraemer, & Neri, 2016). Therefore, changing the attitudes toward dying and death of end-of-life patients through sensitive intervention may help them cope with their suffering and die more peacefully. Intervention may also help patients prepare to practice charity and consider that their life served some purpose and that they will be remembered (Chochinov, 2006; Chochinov et al., 2002).

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IRB Approval

All provided written informed consent except for the general population, and the institutional review boards of the 12 hospitals approved the protocol.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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