

#### **ORIGINAL RESEARCH**

# Nursing students' relationships among resilience, life satisfaction, psychological well-being, and attitude to death

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**Purpose:** This study attempted to examine the influence of resilience, life satisfaction, and psychological well-being on attitude to death.

**Methods:** A predictive correlational design was used. The participants were 184 nursing students from three universities of Korea. They responded to a self-report questionnaire, with items on demographics, resilience, life satisfaction, psychological well-being, and attitude to death.

**Results:** The mean score for attitude to death was 2.77±0.39 (range, 1–4), and a significant difference was observed depending on age, grade, and death-related education. Attitude to death was positively correlated with death-related education, resilience, life satisfaction, and psychological well-being. Results of the hierarchical multiple regression analysis indicated that death-related education and psychological well-being were significant predictors of attitude to death, explaining 26.6% of the latter. The most important factor was psychological well-being.

**Conclusion:** Although death-related education and psychological well-being are two of the most influential factors among nursing students, no more than 30.4% of this study's participants received death-related education. Death-related education is necessary to help nursing students so that they can cope positively with stressful situations by finding positive meaning. It is necessary to develop a systematic curriculum so that these students can establish a positive attitude to death.

Key Words: Attitude to death, Personal satisfaction, Resilience, Nursing students

# Introduction

As the number of patients dying in medical institutions increases every year, more nursing students also experience death directly and indirectly during the course of study or clinical training [1,2]. According to Edo-Gual et al. [3], the most stressful event that nursing students experience during the course of nursing education is the distress for patients and patients' families who experience and face death situations. When nursing students experience death for the first time during clinical practice, they experience a feeling of helplessness, despondency, and a high level of anxiety [4], as well as fear or skepticism about recovery [2,5].

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Nursing students are preliminary nurses who will nurse dying patients. As such, their attitude to death should be dealt with appropriately because this can motivate them to establish their attitude to their own lives and their identity in nursing, as well as improve the quality of

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© The Korean Society of Medical Education, All rights reserved, This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http:// creativecommons.org/licenses/by-nc/3.0/), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited. nursing performance [6]. If nursing students nurse dying patients without having their thoughts and philosophy on death firmly established, they will have negative attitudes, such as anxiety and fear, to death [7,8].

End-of-life care requires comprehensive nursing care that helps patients end their lives with dignity as a human being at the last stage of life. Qualitative endof-life nursing should be preceded by nurses' proper attitudes to death. As attitude to death, however, is not formed in a short time but over a long one, the appropriate educational environment should be created so that nurses can have positive attitudes to death and end-of-life nursing during the course of nursing education [2,3,9].

The factors that affect the death anxiety of nursing students are diverse [2–5,8]. Among the factors that affect attitudes to death, life satisfaction is a cognitive element that is the core of subjective well-being [10]. In a recent report, a higher life satisfaction among college students indicates a more positive attitude to death [11]. A positive perception of the value and meaning of life promotes not only understanding of the meaning of death and a healthy perception of death but also positive acceptance of death [12].

Psychological well-being is the concept of how good one is at functioning as a member of society; it is also subjective well-being in relation to living [13]. Nursing students need a high level of psychological well-being to cope with such stressful situations as death, which they can face during the course of clinical training. Psychological well-being not only has a close relationship with life satisfaction [13,14] but also has a significant influence on reducing anxiety on and positively accepting death [14].

Resilience has been defined as the ability to recover and adapt when faced with adversity [15,16], and individuals tend to become stronger through experience and learning while overcoming adversity [17]. Such resilience is an important factor for nursing students in overcoming anxiety and the feeling of helplessness they feel when they care for dying patients and in establishing positive attitudes to death [17].

Resilience, life satisfaction, and psychological wellbeing make crucial contributions to nursing students' stance to death. In addition, an analysis of resilience and life satisfaction as variables significantly correlated with each other found that the better one's resilience is, the more satisfied one also is with life [18]. Psychological well-being is strongly correlated with resilience and life satisfaction [19]. For nursing students to establish positive attitudes to death, educational preparation is necessary so that students' life satisfaction, psychological well-being, and resilience can be improved, and students can accept death as a process of life. However, almost no research has been conducted among nursing students on the subject of resilience, life satisfaction, and psychological well-being in the context of terminal care and attitude to death.

Accordingly, this study aimed to explore the effects of the resilience, life satisfaction, and psychological wellbeing of nursing students on attitude to death. The study likewise aimed to provide data for the development of educational programs on death and the formation of positive attitudes to end-of-life care in the nursing curriculum.

### Methods

### 1. Study design

This descriptive survey investigated nursing students' resilience, life satisfaction, psychological well-being, and attitude to death, and the factors that influence nursing students' attitude to death.

#### 2. Participants

The participants were nursing undergraduates from three universities located in Daejeon, South Korea. The final participants were selected using G\*Power 3.1.9.2 (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany; http://www.gpower.hhu.de/). A multiple regression analysis for the 11 predictive variables indicated that the minimum sample size calculated for a test power of 0.90 and a medium effect size of 0.15, with a significance level of 0.05, was 152 subjects. A total of 202 students were recruited, but 18 of them provided insincere answers; thus, 184 participants' responses were analyzed. This study was conducted after an evaluation by the Daejeon University Research Ethics Committee (approval no., 1040647-201812-HR-003-03).

#### 3. Measures

#### 1) Resilience

The Interpersonal Reactivity Index, which was developed by Shin et al. [17], was used to measure resilience. It is composed of three factors (control, positivity, sociality) with a total of 27 questions. This scale uses a 4-point Likert scale: the score ranges from 27 to 108 points. Higher scores indicated greater levels of resilience. The reliability (Cronbach's  $\alpha$ ) of the Korean scale of Shin et al. [17] was 0.62–0.80, and it was 0.86 in the present study.

#### 2) Life satisfaction

The life satisfaction scale of Diener et al. [10], modified by Chung and Sung [20] to fit the Korean context, was used to measure life satisfaction. This scale uses a 5-point Likert scale and has five items, with higher scores indicating better life satisfaction. The possible scores range from 5 to 25. The reliability of the adapted scale was 0.85, and it was 0.81 in the present study.

#### 3) Psychological well-being

The psychological well-being scale, which was developed by Ryff [13] and adapted by Kim and Yoo [19], was used to measure psychological well-being. It has 24 items, each scored on a 5-point Likert scale, with higher scores indicating greater levels of psychological well-being. The possible scores range from 24 to 120. The reliability (Cronbach's  $\alpha$ ) of the adapted scale was 0.83, and it was 0.89 in the present study.

#### 4) Attitude to death

The attitude to death scale, which was developed by Thorson and Powell [21] and adapted by Kim and Lee [22], was used to measure attitude to death. This scale is composed of 20 items, each scored on a 4-point Likert scale, with higher scores indicating positive attitude to death. The possible scores range from 20 to 80. Cronbach's  $\alpha$  for the scale was 0.83 when measured initially and 0.76 in the present study.

#### Statistical analyses

Collected data were analyzed using a statistics program for IBM SPSS ver. 23.0 (IBM Corp., Armonk, USA). The demographic data and death-related characteristics of the participants were presented in real numbers and percentages. The differences in variables according to each participant's characteristics were evaluated using independent samples t-test and analysis of variance. A Shapiro-Wilk test was conducted to check the normal distribution. The correlation between death related education, resilience, life satisfaction, psychological well-being, and attitude to death was analyzed using Pearson's and Spearman's rank correlation coefficients. The factors that influenced attitude to death were analyzed using hierarchical multiple regression analysis.

## Results

### 1. Participants' demographic characteristics and death-related experiences

The participants' mean age was  $20.99 \pm 1.34$  years. One hundred and thirty-five participants (73.4%) of this study were female and 49 (26.6%) were male. Sixty participants (32.6%) were freshmen, 57 (31.0%) sopho-

Table 1. Participants' Demographic Characteristics and Death Related Experiences (N = 184)

Characteristic	Value
Age (yr)	20.99±1.34
≤21	
	111 (60.3)
≥22	73 (39.7)
Gender	
Female	135 (73.4)
Male	49 (26.6)
Grade	
1	60 (32.6)
2	57 (31.0)
3	39 (21.2)
4	28 (15.2)
Major satisfaction	
Very satisfied	51 (27.7)
Almost satisfied	78 (42.4)
Moderate	42 (22.8)
Almost dissatisfied	13 (7.1)
Very dissatisfied	0
Experience of other's deaths	0
Yes	55 (29.9)
No	129 (70.1)
Death related education	
Yes	56 (30.4)
No	128 (69.6)

Data are presented as mean ± standard deviation or number (%).

mores, 39 (21.2%) juniors, and 28 (15.2%) seniors. Seventy-eight participants (42.4%) were: "almost satisfied" with their major, 51 (27.7%) were "very satisfied," 42 (22.8%) were at the "moderate" level of satisfaction, and 13 (7.1%) were "almost dissatisfied." Participants who had experienced the death of other individuals numbered 55 (29.9%) and 129 (70.1%) had no experience. Fifty-six participants (30.4%) had received education related death and 128 (69.6%) had no such experience (Table 1).

#### 2. Descriptive statistics of study variables

The mean resilience score was  $3.41\pm0.34$  (range, 1–4); life satisfaction ranged from 1 to 5, with a mean value of  $3.26\pm0.75$ . The mean psychological well-being score was  $3.53\pm0.52$  (range, 1–5), and the mean attitude to death score  $2.77\pm0.39$  (range, 1–4) (Table 2).

# Differences in variables according to demographic characteristics and death– related experiences

Results of the normality test showed that the scores for resilience, life satisfaction, psychological well-being, and attitude to death of each group were normally distributed. For resilience, there was a significant difference depending on satisfaction with one's major (F=4.083, p=0.008), and death-related education (t= 2.041, p=0.044). For life satisfaction, there was a significant difference depending on age (t=-4.633, p< 0.001), grade (F=9.773, p<0.001), satisfaction with one's

Table	e 2. Participants' Resilience,	Life Satisfaction, Psychological	Well-Being, and Attitude to Death	Scores (N = 84)
	Variable	Sum	ltem	Range
-	Resilience	92.16±9.07	$3.41 \pm 0.34$	1-4
	Life satisfaction	$16.31 \pm 3.75$	$3.26 \pm 0.75$	1—5
	Psychological well-being	$84.64 \pm 12.38$	$3.53 \pm 0.52$	1—5
	Attitude to death	55.31 ± 7.92	$2.77 \pm 0.39$	1-4

Data are presented as mean ± standard deviation, unless otherwise stated.

major (F=6.040, p=0.001), and death-related education (t=3.694, p<0.001). For psychological well-being, there was a significant difference depending on grade (F= 8.887, p<0.001), age (t=-4.542, p<0.001), satisfaction with one's major (F=6.318, p<0.001), and death-related education (t=3.924, p<0.001). For attitude to death, there was a significant difference depending on grade (F= 9.483, p<0.001), age (t=-4.474, p<0.001), and death-related education (t=2.192, p=0.030) (Table 3).

# Correlations between participants' resilience, life satisfaction, psychological wellbeing, and attitude to death

Attitude to death was positively correlated with resilience (r=0.246, p=0.001), life satisfaction (r=0.370, p<0.001), and psychological well-being (r=0.513, p<0.001). Resilience was positively correlated with life satisfaction (r=0.464, p<0.001) and psychological well-

Table 3. Differences in Study Variables according to Demographic Characteristics and Death Related Experiences (N = 184)

Characteristic	Category	No. of participants	Resilience	Life satisfaction	Psychological well-being	Attitude to death
Age (yr)	≤21	111	3.77±0.33	$3.06 \pm 0.63$	$3.38 \pm 0.38$	2.66±0.35
	≥22	73	$3.47 \pm 0.35$	$3.56 \pm 0.81$	$3.74 \pm 0.61$	$2.91 \pm 0.42$
	t-value (p-value)		-1.851 (0.066)	-4.633 (<0.001)	-4.542 (<0.001)	-4.474 (<0.001)
Gender	Female	135	$3.45 \pm 0.34$	$3.22 \pm 0.74$	$3.50 \pm 0.55$	2.78±0.41
	Male	49	$3.44 \pm 0.36$	$3.37 \pm 0.76$	$3.57 \pm 0.43$	2.72±0.34
	t-value (p-value)		0.766 (0.444)	1.137 (0.259)	0.884 (0.378)	-0.871 (0.385)
Grade	1 <sup>a</sup>	60	$3.38 \pm 0.29$	$3.08 \pm 0.58$	$3.37 \pm 0.35$	2.62±0.31
	2 <sup>b</sup>	57	$3.36 \pm 0.34$	$3.02 \pm 0.65$	$3.39 \pm 0.44$	$2.70 \pm 0.37$
	3 <sup>c</sup>	39	$3.50 \pm 0.37$	$3.66 \pm 0.86$	$3.79 \pm 0.64$	$2.90 \pm 0.46$
	4 <sup>d</sup>	28	$3.44 \pm 0.33$	$3.59 \pm 0.77$	$3.73 \pm 0.57$	$3.01 \pm 0.35$
	F-value (p-value)		1.585 (0.195)	9.773 (<0.001)	8.887 (<0.001)	9.483 (<0.001)
	Scheffe's test			a, b <c< td=""><td>a<c, b<c,="" d;="" d<="" td=""><td>a<c, b<d<="" d;="" td=""></c,></td></c,></td></c<>	a <c, b<c,="" d;="" d<="" td=""><td>a<c, b<d<="" d;="" td=""></c,></td></c,>	a <c, b<d<="" d;="" td=""></c,>
Major satisfaction	Very satisfied <sup>a</sup>	51	$3.55 \pm 0.32$	$3.61 \pm 0.69$	3.77 ±0.51	$2.81 \pm 0.40$
	Almost satisfied <sup>b</sup>	78	$3.37 \pm 0.34$	$3.20 \pm 0.70$	$3.46 \pm 0.50$	$2.77 \pm 0.36$
	Moderate <sup>c</sup>	42	$3.33 \pm 0.31$	$3.06 \pm 0.81$	$3.37 \pm 0.49$	2.71±0.46
	Almost dissatisfied <sup>d</sup>	13	$3.39 \pm 0.31$	$2.95 \pm 0.67$	$3.45 \pm 0.34$	2.70±0.39
	F-value (p-value)		4.083 (0.008)	6.040 (0.001)	6.318 (0.000)	0.666 (0.574)
	Scheffe's test		a>b, c	a>b, c, d	a>b, c	
Experience of	Yes	55	$3.42 \pm 0.33$	$3.21 \pm 0.83$	$3.48 \pm 0.49$	2.76±0.35
other's deaths	No	129	$3.41 \pm 0.34$	$3.29 \pm 0.71$	$3.54 \pm 0.53$	2.70±0.41
	t-value (p-value)		0.157 (0.876)	-0.645 (0.520)	-0.835 (0.405)	-0.149 (0.882)
Death related	Yes	56	$3.49 \pm 0.33$	$3.50 \pm 0.79$	$3.74 \pm 0.55$	2.86±0.41
education	No	128	$3.38 \pm 0.33$	$3.13 \pm 0.69$	$3.43 \pm 0.47$	2.72±0.38
	t-value (p-value)		2.041 (0.044)	3.694 (<0.001)	3.924 (<0.001)	2.192 (0.030)

Data are presented as mean ± standard deviation, unless otherwise stated.

Table 4. Correlations between Resilience, Life Satisfaction, Psychological Well-Being, Death Related Education, and Attitude to Death (N = 184)

Variable -	Resilience		Life satisfaction		Psychological well-being		Death related education	
Valiable	r	p-value	r	p-value	r	p-value	r	p-value
Resilience	-							
Life satisfaction	0.464	< 0.001	-					
Psychological well-being	0.606	< 0.001	0.732	< 0.001	-			
Death related education	0.161	0.029	0.258	< 0.001	0.263	< 0.001	-	
Attitude to death	0.246	0.001	0.370	< 0.001	0.513	< 0.001	0.138	.041

Table 5. Facto	rs Influencing	) Attitude t	o Death	(N = 1	84
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Dependent		Unstandardized coefficients		– Standardized			
variable	Independent variable	β	Standard error	coefficients, $\beta$	t-value	R <sup>2</sup> (adjusted R <sup>2</sup> )	F-value
Model 1	Age	-1.566	1.259	-0.091	-1.244	0.107 (0.092)	7.184***
	Grade	3.980	0.013	0.000	0.003		
	Death related education	-4.739	1.204	-0.293	-3.937***		
Model 2	Age	0.47	1.160	0.003	0.041	0.290 (0.266)	12.061***
	Grade	0.002	0.012	0.012	0.176		
	Death related education	-2.503	1.138	-0.155	-2.199*		
	Resilience	-0.073	0.070	-0.084	-1.044		
	Life satisfaction	-0.067	0.199	-0.031	-0.334		
	Psychological well-being	0.343	0.068	0.536	5.045***		

Dummy variables (age  $\leq$  21 yr, 0; age  $\geq$  22 yr, 1; grade 1, 000; grade 2, 100; grade 3, 010; grade 4, 001; death related education yes, 0; no, 1). \*p<0.05, \*\*\*p<0.001.

being (r=0.606, p<0.001), whereas life satisfaction was positively correlated with psychological well-being (r=0.732, p<0.001). The experience of receiving deathrelated education was significantly positively correlated with resilience (r=0.161, p=0.029), life satisfaction (r= 0.258, p<0.001), psychological well-being (r=0.263, p< 0.001), and attitude toward death (r=0.138, p=0.041). Thus, a positive correlation was observed among all the variables in this study (Table 4).

#### 5. Factors influencing attitude to death

A hierarchical multiple regression analysis was conducted to investigate the factors that influence attitude to death. The regression analysis satisfied the basic assumptions of the model. The Durbin–Watson statistics was 1.891; as it was close to a value of 2, we decided that there was no autocorrelation. Tolerance ranged from 0.359 to 0.842, which was considerably greater than 0.10, and the variation inflation factor ranged from 1.187 to 2.182, remaining below the standard of 10, thus con– firming no problems in multicollinearity. This analysis confirmed that the data met the assumptions of residuals, linearity, normality, and homoscedasticity of error terms. Cook's distance values for examining individual data points never exceeded 1.0. When the variables of general characteristics and death related experiences were first included to determine the factors influencing participants' attitude to death (model 1), an explanation power of 9.2% was observed. In model 1, the factor that influenced attitude to death was death related education ( $\beta$ =-0.293, p< 0.001). Consequently, when the variables of resilience, life satisfaction, and psychological well-being were added to model 1 (model 2), the explanation power increased to 26.6%. In model 2, the factors that influenced attitude to death were death related education ( $\beta$ =-0.155, p=0.029) and psychological well-being ( $\beta$ = 0.536, p<0.001) (Table 5).

### Discussion

This study aimed to explore the effects of the resilience, life satisfaction, and psychological well-being of nursing students on attitude to death. The participants' score on attitudes to death was 2.77 out of a total of 4 points. This result matched that in Park and Kim [7], whose participants scored 2.75 points. The level of attitude to death of nursing students in the present study was average. The juniors and seniors had more positive

attitudes toward death than the freshmen or sophomores. This result is consistent with the finding of Park and Kim [7] and of Lee et al. [23] which recorded experienced nurses having more positive attitudes to death than inexperienced novice. This result implies that lower graders can regard a patient's death as an event of unfamiliarity and anxiety, instead of reality, and consequently, carry a relatively less positive attitude toward death. As their grade level moves up, they develop a more positive attitude toward death after experiencing end-of-life care or death-related education through major-related learning and clinical training. The present study found that the attitude of students who participated in death-related education was more positive compared with those who did not. The positive changes in the attitudes to death observed in the present study when nursing students were systematically provided with death education for a certain time are similar to the findings of Shin [24]. Similarly, Mallory [25] reported that nursing students who have had death education hold a positive attitude to death. As discussed above, the systematic acquisition of knowledge on death allows students to have positive attitudes to death and helps establish healthy attitudes to death. However, despite its importance, death-related education is rarely included in curriculums. In this study, no more than 30.4% of the respondents received death-related education. Park and Kim [7] reported that 86.2% of nursing students who have had clinical training had experienced the death of patients in the course of the training, and although the students reported that the experience greatly affected them, only a small number of them had consulted their friends or parents on the emotions related to patients death and received support. Talking about and sharing one's experience of patient death play an important role for nursing students: these expressions help them naturally accept the death of patients [8]. Accordingly,

professional counseling and the development and application of support programs for nursing students are needed so that their experience related to the death of patients is positively accepted and their values about death can be established.

The principal factors for attitude toward death were death-related education and psychological well-being, psychological well-being is the major predictor of attitudes to death. The finding is consistent with that in Ji and You [26], who investigated the spiritual health, stress of end-of-life care, and attitudes to end-of-life care. Psychological well-being represents how well a person functions as a member of society beyond subjective happiness or well-being in life [13]. Nursing students need a high level of psychological well-being for them to be able to cope with and adapt well to stressful situations, such as the deaths they experience in their professional environment and process of clinical training. Psychological well-being means the inner power to accept one's own experiences in an affirmative way and to act based on one's own resolve. Psychological well-being is closely related to individuals' educational experiences [15,27]. It is supported by the findings in previous studies that those receiving death-related education have a higher level of psychological wellbeing and have more positive attitudes to death [28]. In other words, education about death helps nursing students understand the course of death and accept it as a part of life. It allows nursing students to improve their psychological well-being and create a positive attitude to death. Edo-Gual et al. [3] reported that although most nursing students want to avoid the experience of facing death during clinical practice, some students recognize that the care they provide can be helpful to patients and consider the situation as an opportunity to provide care for dying patients. Likewise, it is necessary to develop an educational intervention that helps nursing students discover constructive meanings in any stressful event and cope positively with it. Education about death can not only help nursing students improve their psychological well-being but also contribute to a positive attitude to death. In addition, the development and application in the nursing curriculum of systematic educational programs according to grade and clinical practice experience are necessary for nursing students to form positive attitudes to death.

In the present study, the results showed a resilience score of 3.41 out of 4 points, higher than the 2.84 points reported by Kim and Moon [27] and the 2.94 points in Park and Kim [7]. Also resilience differed significantly by major satisfaction and death-related education. This result is similar to the finding of Park and Kim [7] that those more satisfied with their major have relatively better resilience. It implies that nursing students satisfied with their major has better resilience in analyzing and controlling the cause of any crisis, in crafting communication, and in trying to overcome any hardship. Resilience develops through learning and can be improved by external circumstances or conditions [17]. This study also found that the students receiving education about death had better resilience. It is therefore essential to improve nursing students' resilience by helping them convert their negative feelings concerning death into mature experiences and assisting them to cope positively with any situation related to death. It is also necessary to apply systematic education and programs with the objective of helping nursing students improve their resilience.

In conclusion, this study found that death-related educational experience and the level of psychological well-being are major influencing factors in establishing attitudes toward death among nursing students. Previous studies have found that death-related education contributed to a positive change in attitude towards death. However, many previous studies have established the importance of death-related education for elderly people and patients who were preparing for their own death [28-30]. On the other hand, this study found that deathrelated education for nursing students and medical professionals, who are supposed to accept the deaths of others and assist with end-of-life care, was also an important part of education. Through this study, we found that death-related education could help nursing students to accept death as a course of life, to establish their attitude toward death, and contribute to enhancing their psychological well-being. Therefore, the inclusion of systematic death-related education in the relevant curriculum is needed, through which nursing students' attitude toward death should be established and their preparation for end-of-life care should be made.

But it has the following limitations. First, the results could not be generalized because the participants were from a specific region. As such, it is necessary to expand the number of participants and areas covered. Second, considering the relatively small proportion of male students, the effects of sex need to be determined in a follow-up study with a sufficient number of male participants.

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