


# Factors Influencing Suicidal Ideation among Nursing Students: A Cross-sectional Study



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## Abstract:

**Introduction:** The present study aimed to examine the effects of depression, life stress, and self-esteem on suicidal ideation among nursing students.

**Methods:** A total of 105 nursing students participated in the study by completing a structured online questionnaire in December 2021. The questionnaire included validated Korean versions of scales measuring suicidal ideation, depression, life stress, and self-esteem. Data were analyzed using descriptive statistics, Pearson's correlation coefficients, and stepwise multiple regression analysis via the SPSS 25 version.

**Results:** Significant differences in suicidal ideation were observed according to gender and academic year. Furthermore, life stress, depression, and self-esteem were all significantly correlated with suicidal ideation. Among these factors, depression and self-esteem emerged as significant predictors of suicidal ideation, accounting for 41% of the variance ( $F = 35.49$ ,  $p < .001$ ).

**Discussion:** The findings highlight the importance of developing intervention programs that aim to alleviate depression and enhance self-esteem in order to mitigate suicidal ideation among nursing students.

**Conclusion:** These results suggest that comprehensive policies at both governmental and institutional levels are essential to support the mental health of university students and to prevent suicide among young adults in higher education.

**Keywords:** Depression, Life stress, Nursing students, Self-esteem, Suicidal ideation, Mental health.

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## 1. INTRODUCTION

### 1.1. Background

Nurses frequently encounter high-stress environments due to poor working conditions and the demanding nature of their profession, making them more susceptible to mental health issues such as depression. As structural problems within the healthcare system remain unresolved, individual nurses must endure excessive workloads and multiple stressors, which in some cases lead to suicide attempts. To prevent nurse suicides, it is crucial to establish a working environment that safeguards their mental health and identify risk factors associated with suicide to develop effective interventions [1].

In addition to addressing mental health concerns among professional nurses, it is equally important to protect nursing students, who are at the pre-employment stage, from suicide risk. Many studies assess suicidal ideation as a key indicator of suicide risk since a stronger presence of suicidal thoughts increases the likelihood of an actual suicide attempt. Therefore, understanding the prevalence of suicidal ideation among nursing students and identifying its influencing factors is essential for developing preventive measures [2].

South Korea has consistently recorded the highest suicide rate among OECD (Organization for Economic Cooperation and Development) member countries in recent years, with suicide being the leading cause of death among individuals in their twenties [3]. Given that a significant proportion of this age group is enrolled in universities, there is an urgent need to implement social interventions to prevent student suicides. The university years mark a period of profound change in an individual's life, characterized by an expanded social environment and new interpersonal relationships. These transitions often result in confusion and psychological distress. In addition to the general academic and employment-related stress experienced by university students, nursing students face many challenges associated with their rigorous curriculum and clinical training, which frequently lead to negative emotions such as depression, making it essential to assess suicide risk [4].

Nursing students typically take a lot of theoretical courses along with clinical practice training in hospital settings. They often experience high levels of stress due to the heavy academic burden and clinical field experience. Previous research has shown that stress and depression are strong predictors of suicidal ideation among nursing students [5]. Specifically, life stress has been identified as a significant factor influencing suicidal ideation, either directly or indirectly, through maladaptive coping mechanisms [6-9].

Self-esteem has also been found to impact suicidal ideation not only among nursing students but also among general university students. Defined as a subjective evaluation of one's worth, self-esteem is shaped by various experiences and environmental factors. It influences identity formation and adaptability to change, and low self-esteem in high-stress situations has been strongly linked to suicidal thoughts and attempts [2, 4, 10]. Research suggests that individuals with a history of suicidal ideation tend to exhibit lower levels of self-esteem compared to those without such

experiences [2]. Studies on general university students have also indicated that life stress [3, 11] and depression [12, 13] significantly contribute to suicidal ideation. Collectively, life stress and depression function as risk factors, while self-esteem serves as a protective factor against suicidal ideation among university students, including nursing students [14].

To understand and prevent suicide among nursing students, it is essential to examine their general characteristics, life stress, depression, and self-esteem, as well as their impact on suicidal ideation. This study aims to identify the factors influencing suicidal ideation among nursing students and quantify their effects. The findings will serve as foundational data for the development of suicide prevention programs tailored to nursing students.

### 1.2. Purpose of the Study

This study seeks to identify the factors influencing suicidal ideation among nursing students. Specifically, it aims to examine the general characteristics of nursing students, assess their levels of suicidal ideation, depression, life stress, and self-esteem, identify differences in suicidal ideation based on these characteristics, analyze the relationships among these variables, and determine the key predictors of suicidal ideation.

## 2. METHODS

### 2.1. Study Design

This study employed a descriptive survey design to investigate the levels of suicidal ideation, depression, life stress, and self-esteem among nursing students and to identify the factors influencing suicidal ideation.

### 2.2. Participants

The study participants comprised nursing students from two universities located in Daegu, South Korea. Participants were recruited through convenience sampling, and only those who voluntarily agreed to participate after fully understanding the study's objectives were included.

The required sample size was calculated using G\*Power 3.0.10 for multiple regression analysis, with five predictor variables, a significance level of .05, a statistical power of 85%, and a medium effect size of .15. The minimum required sample size was determined to be 102, and a total of 105 nursing students completed the online survey, satisfying the sample size requirement.

### 2.3. Study Instruments

Data were collected using a structured online questionnaire, which included items on general characteristics, suicidal ideation, depression, life stress, and self-esteem.

Suicidal ideation was measured using the Korean-translated version of The Scale for Suicide Ideation (SSI), which consists of 19 items rated on a three-point Likert scale with a Cronbach's alpha of .96 [15]. Higher scores indicate a greater degree of suicidal ideation. The Korean version demonstrated high reliability, with a Cronbach's alpha of .87, and the reliability coefficient in this study was .96 [16].

Depression was assessed using the Korean version of the Center for Epidemiologic Studies Depression Scale (CES-D), which consists of 16 items rated on a four-point Likert scale

with a Cronbach's alpha of .93 [17]. Higher scores indicate greater levels of depression. The Korean version had a Cronbach's alpha of .93, and the reliability coefficient in this study was .92 [18].

Life stress was evaluated using the Revised Life Stress Scale for College Students (RLSS-CS), which includes 50 items rated on a four-point Likert scale. Higher scores indicate higher levels of life stress. The original scale [19, 20] demonstrated Cronbach's alpha values ranging from .72 to .86, while the reliability coefficient in this study was .95.

Self-esteem was measured using Rosenberg's Self-Esteem Scale, a ten-item instrument rated on a four-point Likert scale. Higher scores indicate higher levels of self-esteem. The Cronbach's alpha for the original scale was .92, while the reliability coefficient in this study was .94 [21].

## 2.4. Data Collection and Ethical Considerations

Data collection was conducted between December 6 and December 10, 2021. Participants were fully informed of the study's purpose and procedures before providing their consent. The survey was administered online, and participants completed it voluntarily. Confidentiality was maintained, and the collected data were used exclusively for research purposes. Participants were assured anonymity and were informed that they could withdraw from the study at any time without consequences. As a token of appreciation, those who completed the survey received a small incentive.

## 2.5. Data Analysis

The collected data were analyzed using IBM SPSS Statistics 25. Descriptive statistics were used to examine participants' general characteristics and measured variables. Reliability analysis of the instruments was conducted using Cronbach's alpha coefficients. Differences in suicidal ideation based on general characteristics were analyzed using t-tests, ANOVA, and Pearson's correlation coefficient. Post-hoc tests were conducted for significant ANOVA results after confirming the homogeneity of variance. Pearson's correlation coefficient was used to examine relationships among suicidal ideation, depression, life stress, and self-esteem. Normality tests were conducted using skewness and kurtosis values, and multicollinearity tests were performed using Variance Inflation Factor (VIF) values. Stepwise multiple linear regression analysis was conducted to identify predictors of suicidal ideation among nursing students.

## 3. RESULTS

### 3.1. General Characteristics of Participants

The general characteristics of the participants are presented in Table 1. Among the 105 nursing students, 84 (80.0%) were female, and the mean age was 22.3 years (SD = 2.0). Regarding living arrangements, the majority (58.1%) lived with their parents, while 27.6% lived alone. In terms of housing type, 44.8% lived in their own home, and 33.3% lived in dormitories. Additionally, 87.6% of participants perceived their family's financial situation as moderate.

### 3.2. Suicidal Ideation, Depression, Life Stress, and Self-esteem

In the psychological variables, the mean suicidal ideation score among the participants was 6.10 (SD = 8.66). The mean depression score was 14.50 (SD = 10.69), and the mean life stress score was 28.22 (SD = 22.11). The mean self-esteem score was 18.51 (SD = 7.31) (Table 2).

**Table 1. General characteristics (N=105).**

Characteristics	Categories	n (%) or M±SD
Gender	Female	84 (80.0)
	Male	21 (20.0)
Age (year)	-	22.3±2.0
Grade	1st	27 (25.7)
	2nd	25 (23.8)
	3rd	24 (22.9)
	4th	29 (27.6)
Religion	Have	28 (26.7)
	None	77 (73.3)
Domestic family	None	29 (27.6)
	Parents	61 (58.1)
	Parents and siblings	13 (12.4)
	Siblings	2 (1.9)
Type of residence	Dormitory	35 (33.3)
	Rent	23 (21.9)
	Owned house	47 (44.8)
Family economy	Upper	4 (3.8)
	Middle	92 (87.6)
	Lower	9 (8.6)

### 3.3. Differences in Suicidal Ideation on General Characteristics

The differences in suicidal ideation according to general characteristics are shown in Table 3. Among the variables, gender and grade showed a statistically significant difference in suicidal ideation. Female students had a significantly higher suicidal ideation score (M = 7.00, SD = 9.32) than male students (M = 2.48, SD = 3.50,  $t = 3.56$ ,  $p = .001$ ). First (M = 8.22, SD = 9.18) and third (M = 9.63, SD = 10.93) grade students had a significantly higher suicidal ideation score than fourth-grade students (M = 2.31, SD = 3.78,  $F = 4.28$ ,  $p = .007$ ). Turkey test was used as a post-hoc test.

### 3.4. Correlations Between Suicidal Ideation, Depression, Life Stress, and Self-esteem

Correlational analysis among the key psychological variables indicated that suicidal ideation was positively correlated with depression ( $r = .61$ ,  $p < .001$ ) and life stress ( $r = .49$ ,  $p < .001$ ), suggesting that higher levels of depression and life stress were associated with increased suicidal ideation. Conversely, suicidal ideation was negatively correlated with self-esteem ( $r = -.50$ ,  $p < .001$ ), indicating that higher self-esteem was linked to lower suicidal ideation. Depression was positively correlated with life stress ( $r = .69$ ,  $p < .001$ ) and negatively correlated with self-esteem ( $r = -.54$ ,  $p < .001$ ). Similarly, life stress was negatively correlated with self-esteem ( $r = -.58$ ,  $p < .001$ ), demonstrating the inter-related nature of these psychological factors (Table 4).

### 3.5. Factors Influencing Suicidal Ideation

Before conducting regression analysis, normality, and multicollinearity assessments were performed. Skewness values ranged from 0.03 to 1.60, while kurtosis values ranged from 0.23 to 1.81, confirming that the data followed a normal distribution. Additionally, Variance Inflation Factor (VIF) values ranged from 1.03 to 2.34, indicating no issues with multicollinearity. Stepwise multiple regression analysis

was conducted to determine the most significant predictors of suicidal ideation among nursing students. In the first model, depression emerged as the strongest predictor of suicidal ideation, explaining 37.1% of its variance ( $F = 58.72$ ,  $p < .001$ ,  $\beta = 0.61$ ,  $p < .001$ ). In the second model, both depression ( $\beta = 0.48$ ,  $p < .001$ ) and self-esteem ( $\beta = -0.24$ ,  $p = .011$ ) were found to significantly predict suicidal ideation, with the model explaining 41.0% of the variance ( $F = 35.49$ ,  $p < .001$ ) (Table 5).

**Table 2. Suicidal ideation, alcohol use, depression, life stress, and self-esteem (N=105).**

Categories	Range	Min	Max	M±SD	Skewness	Kurtosis
Suicidal ideation	0~38	0	33	6.10±8.66	1.60	1.63
Depression	0~60	0	48	14.50±10.69	0.90	0.23
Life stress	0~150	0	100	28.22±22.11	1.11	0.77
Self-esteem	0~30	4	30	18.51±7.31	0.03	-1.15

**Table 3. Suicidal ideation by general characteristics (N=105).**

Characteristics	Categories	M±SD	t/F (p)
Gender	Female Male	7.00±9.32 2.48±3.50	3.56 (.001)
Age (year)	-	6.10±8.66	-0.13 (.178)
Grade of College	1st <sup>a</sup> 2nd <sup>b</sup> 3rd <sup>c</sup> 4th <sup>d</sup>	8.22±9.18 4.80±8.10 9.63±10.93 2.31±3.78	4.28 (.007) (a,c>d)
Religion	Have None	5.54±8.02 6.30±8.92	0.40 (.692)
Domestic family	None Parents Parents and siblings Siblings	5.62±7.79 5.75±8.90 9.00±9.89 4.50±6.36	0.56 (.640)
Type of residence	Dormitory Rent Owned house	4.60±6.70 9.22±10.83 5.68±8.57	2.12 (.126)
Family economy	Upper Middle Lower	3.75±4.50 5.63±8.31 11.89±11.72	2.36 (.100)

**Note:** a=first grade, b=second grade, c=third grade, d=fourth grade.

**Table 4. Correlation among suicidal ideation, alcohol use, depression, life stress, and self-esteem (N=105).**

Categories	Depression	Life Stress	Self-esteem
Suicidal ideation	.61 (<.001)	.49 (<.001)	-.50 (<.001)
Depression	1	.69 (<.001)	-.54 (<.001)
Life stress	1	1	-.58 (<.001)

**Table 5. Factors affecting suicidal ideation (N=105).**

Model	Categories	B	SE	$\beta$	p	Adjust. R <sup>2</sup>	F	p
I	-	-	-	-	-	.37	58.72	.011
	Depression	0.49	0.06	0.61	<.001	-	-	-
II	-	-	-	-	-	.41	35.79	<.001
	Depression	0.39	0.07	0.48	<.001	-	-	-
	Self-esteem	-0.28	0.11	-0.24	.011	-	-	-

#### 4. DISCUSSION

This study aimed to identify the factors influencing suicidal ideation among nursing students and to examine the degree of influence of each factor. The findings provide important insights into the psychological determinants of suicidal thoughts among this population.

First, depression was identified as the most significant predictor of suicidal ideation, explaining 37.1% of the variance. This result aligns with previous studies that have also highlighted depression as the most influential factor in suicidal ideation among nursing students [2]. However, the findings of this study differ from those of prior research, which suggested that life stress had a greater impact on suicidal ideation than depression [7, 8]. In this study, life stress was not found to be a direct predictor of suicidal ideation. Given that no previous research has examined the combined effects of depression, life stress, and self-esteem on suicidal ideation among both nursing and general university students, direct comparisons are difficult. However, similar research conducted on different populations provides some insight into these relationships. For example, a study on working women investigating the effects of life event stress, self-esteem, and depression on suicidal ideation found that depression had the strongest influence on suicidal thoughts, which is consistent with the present study. These findings suggest that depression is a critical risk factor for suicidal ideation, not only among nursing students but also across various demographic groups, including university students and working professionals. To reduce suicidal ideation and protect nursing students from suicide risk, continuous attention must be given to their levels of depression. Nursing colleges and university counseling centers should conduct regular mental health assessments, offer preventive education, and provide psychological counseling to monitor students' mental well-being and intervene when necessary. Although life stress was not identified as a direct predictor of suicidal ideation, it is still a significant factor that can exacerbate negative emotions and depression, thereby increasing suicide risk [7-9]. Therefore, stress management programs should be integrated into nursing curricula to help students develop effective coping strategies, which could indirectly reduce suicidal ideation.

Second, in addition to depression, self-esteem was identified as another significant predictor of suicidal ideation. This finding is consistent with previous studies that have reported that self-esteem, along with depression, is a major determinant of suicidal ideation among nursing and general university students [2]. The results of this study and related research indicate that self-esteem is negatively associated with suicidal ideation, meaning that individuals with low self-esteem are more likely to experience suicidal thoughts. Conversely, higher self-esteem has been linked to better mental health, enhanced coping abilities, and improved clinical performance [2, 4, 10]. These findings underscore the importance of fostering high self-esteem as a protective factor against suicide risk among nursing students. Self-esteem can be closely monitored by faculty members, including academic advisors and course instructors, who interact with students regularly. If students are identified as being at risk for suicide, faculty members should follow institutional crisis intervention protocols to ensure appropriate

support and intervention. Additionally, universities should promote counseling services, peer mentoring programs, and extracurricular activities that encourage student engagement and personal development. These initiatives could help students build self-confidence, resilience, and a stronger sense of self-worth, ultimately reducing the likelihood of suicidal ideation.

Third, the level of suicidal ideation among nursing students in this study was higher than that reported in previous studies using the same measurement tool. The mean suicidal ideation score in this study was 6.10 (SD = 8.66), which was higher than the average scores reported in previous research on nursing students and general university [2, 12, 22]. Given that depression and self-esteem were found to be major predictors of suicidal ideation, a comparison of these variables between the current study and previous research helps to explain the findings. The mean depression score in this study was 14.50 (SD = 10.69), which was lower than the average depression scores reported in previous studies on nursing students and general university students [2, 13]. Meanwhile, the self-esteem score in this study was 18.51 (SD = 7.31), which was lower than that reported in previous studies on nursing students and general university students [2, 7, 22]. These findings suggest that the high suicidal ideation scores observed in this study may be attributed to the lower self-esteem levels among participants.

Additional post-hoc analysis revealed that suicidal ideation and depression varied significantly by academic year, whereas self-esteem did not differ across academic years. Furthermore, a gender-based analysis showed that suicidal ideation differed significantly between male and female students, but no gender differences were found in depression, life stress, or self-esteem. These findings indicate that targeted interventions should be developed to enhance self-esteem among all nursing students, regardless of their academic year. However, suicide prevention efforts should focus particularly on female students, first- and third-year students, and those with high levels of depression, as these groups were identified as having the highest risk of suicidal ideation.

#### CONCLUSION

The purpose of this study was to investigate the influences of depression, life stress, and self-esteem on suicidal ideation among nursing students. This study showed the factors influencing suicidal ideation among nursing students and identified depression and self-esteem as the significant predictors. The results indicate that higher depression levels are associated with increased suicidal ideation, while higher self-esteem serves as a protective factor that reduces suicidal thoughts. These findings highlight the need for mental health interventions aimed at reducing depression and enhancing self-esteem among nursing students.

Several suggestions can be drawn from this study. First, the sample was limited to nursing students from two universities, which may restrict the generalizability of the findings. Future research should expand the sample to include nursing students from diverse regions to improve external validity. Second, as this was a cross-sectional study, causal relationships between depression, self-esteem, and suicidal ideation cannot be definitively established. Longitudinal



studies are necessary to examine the long-term effects of these psychological factors on suicidal ideation.

Despite these limitations, this study contributes valuable insights into the psychosocial factors associated with suicidal ideation among nursing students. The findings emphasize the importance of continuous mental health monitoring and preventive education for nursing students. By addressing depression and promoting self-esteem through counseling services, faculty engagement, and university-based initiatives, institutions can help mitigate suicide risk and enhance the overall psychological well-being of nursing students.

## AUTHOR'S CONTRIBUTIONS

The author confirms sole responsibility for the following: H.Y.K.: Study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

## LIST OF ABBREVIATIONS

CES-D	= Center for Epidemiologic Studies Depression Scale
VIF	= Variance Inflation Factor
SE	= Standard Error
M	= Mean

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the Institutional Review Board (IRB) of the Keimyung University ethics committee, South Korea (IRB No. 40525-201504-HR-16-05).

## HUMANS AND ANIMALS RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

## CONSENT FOR PUBLICATION

Informed consents were obtained from the participants.

## STANDARDS OF REPORTING

STROBE guidelines were followed.

## AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from the corresponding author [H.Y.K.] upon reasonable request.

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None.

## CONFLICT OF INTEREST

The authors declared no conflict of interest, financial or otherwise.

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