

# The Mediating Effect of P-CEFNS (Perceived Confidence of Essential Fundamental Nursing Skills Performance) in the Relationship between Resilience and Anxiety of Korean Nursing Students

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## Abstract

**Background/Objectives:** The nursing students learn to explore and learn on their own in various nursing situations, and directly solve nursing problems while validating practical experience, and a strategy to increase confidence of nursing task performance through more active and dynamic participation in the learning process is considered to be effective. This study aims to determine what mediating effect the confidence of performance of nursing students in Korea shows between resilience and anxiety,

**Methods/Statistical analysis:** This study was a causal research which used resilience as an independent variable and state anxiety as a dependent variable. The subjects were 170 Korean nursing students, who gave consent after being explained the purpose of the study, and were surveyed using a structured questionnaire; P-CEFNS, resilience, and anxiety. The mediating effect of P-CEFNS was verified using a three-step linear regression of the SPSS/PASW 23.0 program.

**Findings:** In the relationship between resilience and state anxiety of nursing students, perceived confidence of essential fundamental nursing skills performance had a partial mediating effect. The results of the analysis were statistically significant ( $p < .000$ ). Also, looking at the explanatory power of anxiety of nursing students, resilience alone was 23.1% ( $F = 51.812$ ,  $p < .001$ ), and when P-CEFNS was added, explanatory power increased to 32.1% ( $F = 41.022$ ,  $p < .001$ ), and effects of resilience and P-CEFNS on anxiety were also statistically significant.

**Improvements/Applications:** Strategies for intervention to reinforce perceived confidence in essential fundamental nursing skills performance should be developed for nursing students in the path to their first clinical practice.

**Keywords:** Nursing Skills Performance, Resilience, College student, Mediating effect, State anxiety.

## 1. Introduction

Recently, as concerns regarding confidence and competence of new nurses in clinical practice have been raised, interest in skill education, training and development of nursing students is growing [1]. As new nurses do not meet the clinical field requirements and are unable to immediately put them into practice, time and cost problems continue to arise about their education [2]. In the meantime, as the cause of the gap between academic and industrial sites, in recent years, as the number of departments and students has been remarkably expanded and increased, the practical training environment such as university facilities and manpower has been insufficient, and the contents of practical training and the contents of practical clinical practice are inconsistent, and during clinical training, the lack of educational and human resources in the field and the lack of appropriate training institutions for many students to practice have been continuously raised [3].

The role of clinical nurses has recently become more complex and diversified due to the shortening of hospitalization periods of patients and changes in disease patterns, interest in community medical care, advanced medical institutions, cultural diversity, and improvement of people's awareness of rights, and high-level practical skills such as specialized clinical knowledge and skills are required [4]. For nursing with such high clinical field adaptability and practical skills, sufficient acquisition and practice of professional knowledge and skills required in the nursing field are required. To this end, the necessity of standardization, which is the basis for practical training of basic nursing skills, was raised, and the Korean Accreditation Board of Nursing (KABON) developed a protocol for essential fundamental nursing skills items and an evaluation scorecard to identify and promote core nursing performance skills in theory and clinical training education of nursing graduates. Essential fundamental nursing skills include 20 items that must be learned and achieved during the practical training process for nurses [5]. This basic nursing technique is the most essential and basic practical skill among the various abilities that a nurse must have, and it is not

only an essential skill in solving the subject's health problem, but also the basis of clinical practice ability, which is the ability of nurses to demonstrate appropriate knowledge, skills, and judgment in clinical situations and to function competently [6].

Confidence of performance is the degree to which one believes that something can be accomplished or performed at will, and confidence of essential fundamental nursing skills performance is a belief in one's own knowledge and practical skills necessary to perform nursing skills [7]. In other words, nursing students' confidence of essential nursing skills performance makes them have an attitude to actively participate in clinical training and improves their basic nursing skills [8]. Therefore, in order to improve the essential fundamental nursing skills performance ability of nursing students, it is necessary to increase the confidence of performance. However, passive and repetitive training does not improve the self-directed problem-solving ability of nurses required in a dynamically changing medical environment, and only summary nursing skills are simply memorized and soon forgotten [9]. It was investigated that recent universities use programs that cannot be easily imitated elsewhere in education management, students also actively participate, and university students respond more actively than passively to learn and enjoy specialized knowledge [10].

Nursing students learn to explore and learn on their own in various nursing situations, and directly solve nursing problems while validating practical experience, and a strategy to increase confidence of nursing task performance through more active and dynamic participation in the learning process is considered to be effective [11]. On the other hand, resilience is a measure representing the behavioral characteristics and emotional and cognitive control capabilities that enable individuals to adapt to the environment, and is considered to have a positive effect on health, well-being, and quality of life, and interest in this is increasing recently [12]. People with high resilience have a positive self-image, act socially, have internal self-control, and adapt better to change than those with low resilience [13]. Resilience is an important factor that helps nursing students grow into mature nurses by giving them psychological well-being, and is an individual's total internal ability to respond flexibly to the stress-causing environment and the power to overcome life's adversities as well as the ability to overcome problems beyond expectations and live a better life with the psychological recovery ability to recover to the original state after experiencing stress [14]. It can be predicted that resilience can have a positive effect on confidence of performance. In addition, since clinical training is an essential requirement in nursing students' curriculum, stress is experienced due to various clinical training such as pain or death of the patient directly experienced in the clinical field, fear of mistakes or harm to the patient, anxiety about the evaluation of lack of knowledge and clinical skills, and difficulty in relationship with nurses in the clinical field [15]. Failure to respond effectively to clinical training can lead to psychological disorders such as tension and anxiety, as well as behavioral disorders such as poor academic performance, and physical symptoms such as headaches [16]. Therefore, it is expected that confidence in essential fundamental nursing skills performed during the curriculum can effectively cope with clinical training to some extent.

Therefore, this study aims to determine what mediating effect the confidence of performance of nursing students in Korea shows between resilience and anxiety, and the purpose of this study is to provide basic data for improving clinical practice ability by strengthening the skills of prospective nurses and for effective practical training curriculum operation.

## 2. Materials and Methods

### 2.1. Study design

This study was a causal research which used resilience as an independent variable and state anxiety as a dependent variable. The P-CEFNS (Perceived Confidence of Essential Fundamental Nursing Skills Performance) was used as a mediating variable between resilience and state anxiety.

### 2.2. Subjects

The subjects were 170 Korean nursing students, who gave consent after being explained the purpose of the study, and were surveyed using a structured questionnaire.

### 2.3. Measurements

#### 2.3.1. P-CEFNS (*Perceived Confidence of Essential Fundamental Nursing Skills Performance*)

Confidence of essential fundamental nursing skills performance is a subjective score for the level of confidence that nursing students perform for the 20 essential fundamental nursing skills presented in the Korea Accreditation Board of Nursing during the practice process. It represents scores based on 'Highly confident' 5 points, 'Confident' 4 points, 'Adequate' 3 points, 'Possible but unskilled' 2 points, and 'Unable' 1 point [17]. The higher the score, the higher the confidence of performance. The reliability of the tool was .95 in Cronbach's  $\alpha$  value in the study by Bang [17] and .96 in this study.

#### 2.3.2. Resilience

In the total of 24 questions developed by Yang et al. [18], the lower 7 areas are composed of 3 questions for confidence factor, 4 questions for relationship factor, 4 questions for positivity factor, 2 questions for coping ability factor, 4 questions for social support factor, 4 questions for emotion control ability factor, and 3 questions for organizational style factor. Each question is calculated on a 5-point Likert scale from 1 point 'Strongly disagree' to 5 points 'Strongly agree', and 2 negative items were calculated by inverse conversion, and the higher the score, the higher the resilience. At the time of tool development, Cronbach's

$\alpha$  was .84 and in this study was .93.

### 2.3.3. Anxiety

Anxiety was measured through a tool developed by Kim & Sin [19] using the State-Trait Anxiety Inventory (STAI) developed by Spielberg, and is composed of a 4-point scale with 20 questions about the current anxiety state. The higher the state anxiety score, the higher the level of anxiety. In the study of Kim & Sin [19], Cronbach's  $\alpha$  of the state anxiety scale was .87, and in this study, it was .93.

### 2.4. Data analysis method

The collected data were subjected to statistical analysis such as frequency analysis, mean and standard deviation, t-test, ANOVA, Pearson correlation analysis, and regression analysis using the SPSS23 program. The mediating effect of P-CEFNS (Perceived Confidence in Essential Fundamental Nursing Skills Performance) was verified using a three-step linear regression of the SPSS/PASW 23.0 program. A three-step mediated regression analysis was performed to verify the mediating effect of P-CEFNS in the leading variable resilience affecting the dependent variable state anxiety. In the first-stage regression analysis, the independent variable should have a significant effect on the parameter, in the second-stage regression analysis, the independent variable should have a significant effect on the dependent variable, in the third-stage regression analysis, the parameter should have a significant effect on the dependent variable, and when the effect of the independent variable is greater in the two-stage regression analysis than in the three-stage regression analysis, the role of the parameter is verified. In step 3 in which the independent variable and the parameter are simultaneously put into the regression equation, if the independent variable is not significant, it can be judged as a complete mediating role, and if significant, it can be judged as a partial mediating role. In other words, when the influence of the independent variable on the dependent variable when the parameter is controlled in the third-stage regression analysis is not significant, the independent variable does not directly affect the dependent variable, but has a full mediating effect as it affects only through the parameter. The Sobel test calculator was used for the significance of the mediating effect [20-21].

## 3. Results and Discussion

Among the variables, resilience ( $\beta=-.485$ ,  $p<.000$ ) and P-CEFNS (Perceived Confidence of Essential Fundamental Nursing Skills Performance) ( $\beta=-.365$ ,  $p<.000$ ) were influential to state anxiety, as shown in Table 1.

**Table 1: Mediating effect of P-CEFNS between Resilience and Anxiety**

(N=170)

Step	B	SE	$\beta$	T	Adjusted R <sup>2</sup>	F
1) → 2)	.774	.092	.543	8.384*	.291	70.289*
1) → 3)	-.474	.066	-.485	-7.198*	.231	51.812*
1)	-.281	.074	-.287	-3.809*	.321	41.022*
2)	-.250	.052	-.365	-4.831*		

\*:  $p<.000$

<sup>1)</sup> Resilience <sup>2)</sup> P-CEFNS (Perceived Confidence of Essential Fundamental Nursing Skills Performance)

<sup>3)</sup> State Anxiety

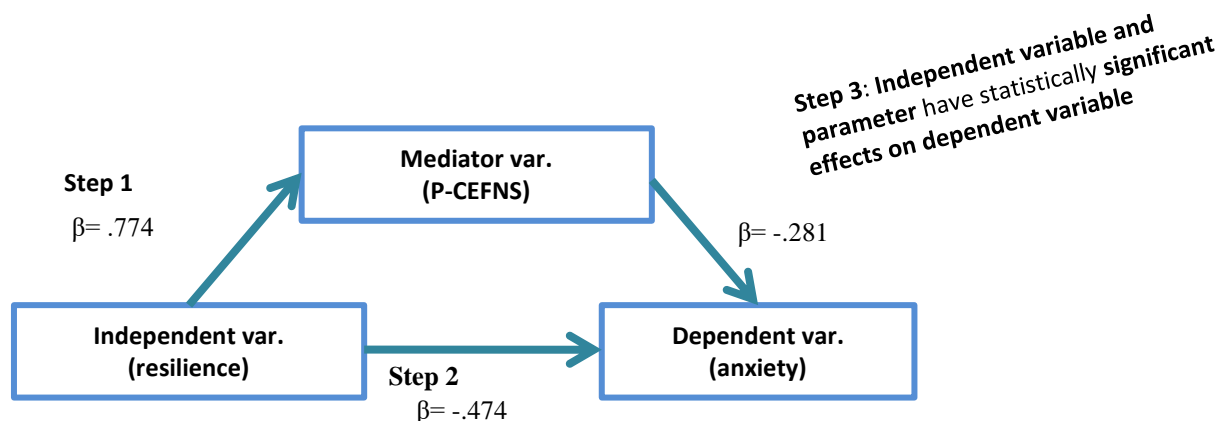
In the regression analysis of three steps, the mediating effect of P-CEFNS was confirmed through the following results;

**Step 1:** Independent variable (resilience) had a statistically significant effect on the parameter (P-CEFNS).

**Step 2:** Independent variable (resilience) had a statistically significant effect on the dependent variable (anxiety).

**Step 3:** Independent variable (resilience) and the parameter (P-CEFNS) had a statistically significant effect on the dependent variable (anxiety).

The standardized beta value in Step 2 ( $\beta=-.474$ ) was smaller than that of Step 3 ( $\beta=-.281$ ). According to the Sobel test, a mediator variable significantly carried the influence of the independent variable to the dependent variable; whether the indirect effect of the independent variable on the dependent variable through the mediator variable was significant ( $p<.000$ ). In other words, P-CEFNS was found to have a partial mediating effect in the relationship between resilience and anxiety of nursing students. Also, looking at the explanatory power of anxiety of nursing students, resilience alone was 23.1% ( $F=51.812$ ,  $p<.001$ ), and when P-CEFNS was added, explanatory power increased to 32.1% ( $F=41.022$ ,  $p<.001$ ), and effects of resilience and P-CEFNS on anxiety were also statistically significant, as shown in Figure1.



**Figure 1. Mediating effect of P-CEFNS in the relationship between resilience and anxiety**

Resilience, which overcomes the burden of completing both classroom and clinical training, and turns adversity into an opportunity to grow, is a very necessary requirement for nursing students who will grow into future nurses. Resilience is not an innate trait of temperament, but is gradually formed through the dynamic interaction between individuals and the environment, so it can be improved through education or training [13]. Therefore, interventions to promote resilience in nursing students' curriculum are needed. If the experience of success is accumulated due to high resilience, it has a positive effect on the relief of clinical practice confidence and anxiety, so that clinical training can be successfully completed and furthermore, confidence as a new nurse can be improved [4]. In particular, the lack of communication skills with medical personnel, patients, and caregivers encountered in the clinical field leads to anxiety and tension, and lack of confidence in clinical practice may be a factor that prevents proper coping with this [15].

Therefore, for effective education of essential fundamental nursing skills, in order to improve the confidence of essential fundamental nursing skills performance, which is an important mediating factor in improving students' resilience and alleviating anxiety, it is necessary to actively utilize teaching and learning strategies using direct and indirect educational interventions.

## 4. Conclusion

This study examined the mediating effect of Korean nursing students' confidence of performance in essential fundamental nursing skills between students' resilience and anxiety, and was carried out to provide basic data for developing an efficient and structured practical education program for nursing students.

In the relationship between resilience and state anxiety of nursing students, perceived confidence of essential fundamental nursing skills performance had a partial mediating effect. The results of the analysis were statistically significant ( $p < .000$ ). Also, looking at the explanatory power of anxiety of nursing students, resilience alone was 23.1% ( $F = 51.812$ ,  $p < .001$ ), and when P-CEFNS was added, explanatory power increased to 32.1% ( $F = 41.022$ ,  $p < .001$ ), and effects of resilience and P-CEFNS on anxiety were also statistically significant. Through this study, it was confirmed that P-CEFNS has a partial mediating effect in the relationship between resilience and anxiety of nursing students.

According to previous studies, the composition of systematic clinical training education positively affects nursing students' confidence and satisfaction in clinical practice ability. In addition, it has been reported that selecting an appropriate learning strategy through simulation and clinical training according to clinical practice items can increase students' performance confidence. Therefore, depending on the characteristics of essential fundamental nursing skills, it is expected that in addition to clinical training, it is necessary to improve performance through reinforcement of integrated skill training using simulation.

In addition, in order to improve the confidence of essential fundamental nursing skills performance, it is necessary to develop and manage various clinical education programs in close cooperation with training institutions and hospital field leaders. To compensate for the decline of confidence of essential fundamental nursing skills performance, it would be more important than anything else to perform practical training using simulations in a multifaceted and intensive manner through scenarios reflecting various clinical cases in a training environment similar to clinical training before being placed in clinical practice. In the future, a study that measures the objective level of essential fundamental nursing skills performance ability and identifies various factors that influence confidence is suggested.

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