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Factors Influencing Self-Perceived Nursing Competence in Hospital Nurses: A Cross-Sectional Study

Hastanede Çalışan Hemşirelerde Algılanan Hemşirelik Yeterliğini Etkileyen Faktörler: Kesitsel Bir Çalışma

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Öz

Giriş ve Amaç: Bu çalışma, hemşirelerin algıladıkları hemşirelik yeterliklerini incelemek ve algılanan iş doyumu, iş ile ilgili stres ve baş etme becerileri kontrol edildiğinde kişilik özellikleri ile etik iklimin, hemşirelik yeterliğini nasıl etkilediğini belirlemeyi amaçlamıştır.

Gereç ve Yöntemler: Tanımlayıcı, ilişkisel tipteki çalışmanın örneklemini Mart-Haziran 2021 tarihleri arasında bir üniversite hastanesinde çalışan 316 hemşire oluşturmuştur. Verilerin toplanmasında Kişisel Özellikler Formu, Bütüncül Hemşirelik Yeterlik Ölçeği, On Maddeli Kişilik Ölçeği ve Hastane Etik İklim Ölçeği kullanılmıştır. İş memnuniyeti, işle ilgili stres ve başa çıkma becerileri, sıfırdan ona kadar sıralanan Görsel Analog Skala (GAS) ile değerlendirildi. Pearson korelasyon ve hiyerarşik lineer regresyon analizi yapılmıştır.

Bulgular: Hemşirelerin algıladıkları yeterlik puan ortalamaları orta düzeydeydi. Etik iklim algıları ve kişilik özellikleri (dışadönüklük ve deneyime açıklık), hemşirenin yeterlik algısı ile önemli ölçüde ilişkiliydi. Hiyerarşik lineer regresyon analiz sonuçlarına göre, algılanan hemşirelik yeterliğini etkileyen istatistiksel olarak anlamlı faktörler, etik iklim algısı, deneyime açıklık ve algılanan başa çıkma becerileriydi.

Sonuç: Artan hemşirelik yeterliği algısı; daha iyi etik iklim algısına sahip olmak, deneyime açıklık kişilik özelliği ve artan başa çıkma becerileri ile ilişkilidir.

Anahtar kelimeler: Başa çıkma becerileri; etik iklim, iş doyumu, iş ile ilgili stres, hemşirelik yeterliği, kişilik özellikleri.

Abstract

Aim; This study aimed to investigate self-assessment of nurses' perceived nursing competence and determine how personality traits and ethical climate affect competence when demographic factors, perceived job satisfaction, job-related stress, and coping skills were controlled.

Method; The sample of the descriptive, correlational study consisted of 316 nurses working in a university hospital between March and June 2021. The Personal Characteristic Form, Holistic Nursing Competence Scale, Ten-Item Personality Traits, and the Hospital Ethical Climate Survey were used to collect data. Job satisfaction, job-related stress, and coping skills were assessed on a Visual Analog Scale (VAS) ranked from zero to ten. Pearson's correlation and hierarchical linear regression analyses were conducted.

Results; The mean scores of nurses' perceived competence were moderate. Ethical climate perceptions and personality traits (extraversion and openness to experience) significantly correlated with the nurse's self-perception of competence. The statistically significant factors influencing perceived nursing competence were

ethical climate perceptions, openness to experience, and perceived coping skills based on the results of the hierarchical linear analysis.
Conclusion; Having better ethical climate perceptions, the personality trait of openness to experience, and increased coping skills were associated with the increased self-perception of nursing competence.

Keywords: Coping skills, ethical climate, job satisfaction, job-related stress, nursing competence, personality traits.

1. Introduction

Competence is a key factor in providing high-quality, ethical, and safe nursing care [1]. Nursing competence is a holistic concept that consists of the combination of knowledge, psychomotor and communication skills, attitudes, application of ethical standards, clinical decision making, critical thinking skills, creativity, innovation, and the ability to provide safe and effective care [2,3]. Research related to nursing competence has increased in the past two decades [4]. Nursing competence is critical to quality of care, patient outcomes, nurses' job satisfaction, intention to leave, and quality of work life [5,6]. Competence is influenced by specific knowledge of the individuals and is a multidimensional concept that may be influenced by internal factors, such as personal traits, and environmental factors, such as ethical climate [2,7,8].

Personality traits are divided into five structures: extraversion, openness to experience, conscientiousness, agreeableness, and emotional stability. Extroverted individuals are often active, ambitious, and growth-oriented; conscientious individuals are hardworking and achievement-oriented; and open to experience individuals are often curious, and intellectual [9,10]. Because personality traits influence individuals' behavior, people with different personalities have different competencies in various professional settings [11]. Previous studies have found an association between personality traits and nursing competence. Takase et al. (2018) reported in a cross-sectional study with nurses that extroverted, conscientious, and open to experience personality traits may increase nursing competence [12]. Furthermore, not only do personal traits influence individuals' behavior, but their environment also either facilitates or constricts it. According to Barrick et al. (2013), individuals exhibit their personal traits in their actions when they are in an environment that facilitates their expression. Besides, individuals with different personalities may possess different values and occupational targets [9].

The ethical climate is another environmental factor that influences nursing competence. An ethical climate in nursing is defined as the perceptions of nurses on ethical issues in the workplace and how nurses resolve them [7,13]. The ethical climate of the workplace has been found to be a factor influencing the ethical and professional practices of nurses [7]. The ethical climate may also have an impact on nurses' job satisfaction or intention to leave, as well as their professional and ethical development [14,15]. Because the ethical climate is related to ethical behavior, it should be considered when evaluating the perceived nursing competence [7]. A study by Numminen et al. (2015) has reported that the ethical climate may influence perceived nursing competence in newly graduated nurses [7]. However, their data was limited to newly graduated nurses, and further research is necessary to understand better. Factors associated with nursing competence may assist hospital administrators in finding effective ways to identify and enhance nursing competence [5]. Therefore, it is important to investigate perceived nursing competence and the factors influencing it.

In summary, previous studies have shown that the working environment, occupational and socio-demographic variables are associated with perceived nursing competence [16–20]. However, the relationship between personality traits [12] and ethical climate [7] as a significant determinant of perceived nursing competence has been little investigated in nursing research. This study seeks to explore the complex relationships between nursing competence, personality traits, and ethical climate, and how these factors were collectively influenced by job satisfaction, job-related stress and coping skills among nurses. By examining these interconnections, this research aims to contribute to the development of strategies that enhance nursing competence.

2. Methods

2.1 Design

An exploratory cross-sectional study was conducted to investigate perceived nursing competence with nurses being recruited from a university-affiliated hospital in western region of Turkey. This study was reported following the strengthening the reporting of observational studies in epidemiology (STROBE) checklist.

2.2 Sample and Setting

A purposeful sampling method was used. Out of 630 nurses working at a university-affiliated hospital between March and June 2021, 316 nurses who met the eligibility criteria for recruitment were included in the sample. The eligibility criteria were as follows: (a) nurses who were aged 18 and older and (b) who were directly involved in patient care and agreed to participate voluntarily. Nurses who were on annual leave, or absent from work at the time of the study, were not included the study.

The G-Power statistical program was used to conduct a power analysis. The result which showed the relationship between clinical competence and ethical climate (r = 0.168) of Numminen et al. (2015) was used for preliminary power analysis [21]. The minimum sample size of this study was calculated before the data collection as 273 based on the type 1 error of 0.05 and type 2 error of 0.20 (80%). The post-power analysis was performed using the hierarchical linear regression analysis findings of this study. In total, it exhibited 99% power.

2.3 Data Collection

After informed consent, potential nurses who met the eligibility criteria were included in the current study. Four different instruments were used to collect the data: The Personal Characteristic Form, the Holistic Nursing Competence Scale, the Ten-Item Personality Traits, and the Hospital Ethical Climate Survey. The data were collected using a paper-pencil and it took approximately 25-30 minutes to fill out these forms.

2.4 Data Collection Tools

The Personal Characteristic Form consisted of 13 questions related to the demographic and professional features of nurses. It was prepared by the researchers based on previous studies [16,19–22].

Holistic Nursing Competence Scale, 36-item, 7-point Likert-type, was created by Takase and Teraoka (2011). It is divided into two sections. The first section (A), which is called "General Aptitude," contains seven items, consisting of questions about personal attributes. The items in this section are rated by a seven-point from not at all (1) to always (7). The second section (B) evaluates nurses' professional attributes and consists of four subscales: "Staff Education and Management", "Ethically-oriented Practice", "Nursing Care in Team" and "Professional Development." This section, consisting of 29 items, is rated by a seven-point from not competent at all (1) to very competent (7). There are not any reverse-scored items and cut-off points on the scale. The higher scores obtained from the scale, the greater increase in perceived nursing competence. On the whole scale, Cronbach's alpha value was 0.967 [8]. The Turkish psychometric features of this scale were examined by Aydın and Hicdurmaz (2019). The Cronbach's alpha coefficient was found to be 0.97 in the Turkish version [23] and 0.937 in this study.

Ten-Item Personality Traits was developed by Gosling, Rentfrow, and Swann in 2003 to evaluate the big-five personality traits. Extraversion (items 1 and 6), emotional stability (items 4 and 9), openness to experiences (items 5 and 10), conscientiousness (items 3 and 8), and agreeableness (items 2 and 7) are the five subscales of the scale. Each item was rated on a Likert scale ranging from strongly disagree (1) to strongly agree (7). Items 2, 4, 6, 8, and 10 of the scale are reversed [24]. The total score of the scale was not calculated. The Turkish psychometric properties of the scale were evaluated by Atak (2013). The subscales of openness to experience, agreeableness, emotional stability, conscientiousness, and extraversion all had Cronbach alpha coefficients of 0.83, 0.81, 0.83, 0.84, and 0.86 respectively [25]. Cronbach's alpha coefficients were also satisfactory in this study ranged 0.74 to 0.83. A higher score implies a higher level of the traits.

The Hospital Ethical Climate Survey was developed to measure ethical climate perceptions of nurses by Olson (1995). The scale consists of 26 items with five sub-dimensions: patients, managers, hospitals, peers, and physicians. All items (there is no reverse-scored) on the 5-point Likert scale are ranked from almost never true (1) to almost always true (5). The higher the scores on the scale, the more positive perceptions of the hospital's ethical climate. The Cronbach's alpha value for the whole scale was 0.91 [26]. The psychometric features of the scale were evaluated by Bahçecik and Öztürk (2003) in Turkey. The Cronbach's alpha value was found to be 0.89 in the Turkish version [27] and 0.96 in this study.

In addition, the researcher provided the subjects with three questions to measure the current level of job satisfaction, level of job-related stress, and self-assessment of coping skills. This instrument was provided in the form of a *Visual Analog Scale (VAS)* ranked from zero to ten.

2.5 Analysis

The researchers examined all of the data in this study to ensure that there was no inaccurate information. In the present study, 323 nurses met the eligibility criteria and volunteered to participate in this study. Seven of these nurses were not included this study because they did not fill in more than one form. Forty-six nurses did not fill out the ten-item personality traits. Since the personality traits scores of 46 nurses were missing, analysis was conducted with 270 nurses to examine the relationships with personality traits. The data were analyzed using SPSS 24.0 software. Whether the scores of

numerical variables were normally distributed or not was checked with skewness, kurtosis, and histograms. The relationship between the variables was examined using correlation analysis. Descriptive statistics were used to indicate the demographic and professional features of nurses. To analyze the outcome variables on perceived nursing competence for univariate analyses, Student's t-test, correlation, and ANOVA tests were conducted. Hierarchical linear regression analysis was computed to investigate how well personality traits and ethical climate predict perceived nursing competence scores when controlling for sex, age, working years, perceived job satisfaction, job-related stress, and coping skills. The assumptions of linearity, normally distributed and uncorrelated errors were checked and met. The demographic variables to be taken into the model were decided in accordance with the literature and by considering univariate analyses. The analysis had three steps: descriptive characteristics of nurses, job satisfaction, perceived job-related stress, and perceived coping skills were included in the model; then personality traits and ethical climate were included; and finally, the hierarchical linear regression analysis was conducted.

2.6 Ethical Considerations

XXXXX University Faculty of Medicine Clinical Research Ethics Committee (Decision date: 17.03.2021, Protocol no: E-38824465-020-15405) and XXXXXX Education and Research Hospital approved this study (Decision date: 25.02.2021, Protocol no: E-45786011-602.03.99). While conducting this study, the World Medical Association Declaration of Helsinki (2008) was complied with. After explaining the aim of the study, the informed consent form was completed by the nurses, and their anonymity was preserved. Permissions were obtained from the corresponding author regarding the use of the measurement scales.

Table 1. Descriptive Variables of Nurses (n=316)

Characteristics		**$\bar{X}$ ± SD**	**Range**
Age		35.90 ± 8.90	21-57
Weekly working hours		43.21 ± 6.79	35-72
Working years		14.03 ± 9.71	1-38
The average number of patients cared for		14.42 ± 6.29	2-25
	Variables	**n**	**%**
Sex	Female	279	88.3
	Male	37	11.7
Marital status	Married	210	66.5
	Single	82	25.9
	Unwilling to answer	24	7.6
Educational Level	High school	32	10.1
	Vocational school	45	14.2
	Undergraduate	222	70.3
	Postgraduate	17	5.4
Income level	Income less than expenses	152	48.1
	Income equals expense	139	44.0
	Income more than expenses	25	7.9
Clinical specialty	Medical	108	37.0
	Surgical	152	52.0
	ICU	32	11.0
Receiving training related to ethics	Yes	244	77.2
	No	72	22.8
Follow up evidence-based information	Always	105	33.2
	Sometimes	172	54.4
	Rarely	35	11.1
	Never	4	1.3

*ICU: Intensive care unit, SD: Standard Deviation

3. Results and Discussion

3.1 Results

The mean age of the participants was 35.90 ± 8.90 years; the majority of them (88.3%) were female. Of these, 71.9% were married, and 70.3% had bachelor's degrees. Of the participants, 52.0% were employed in surgical units and this was followed by medical and intensive care units with 37% and 11%, respectively. Participants had worked as nurses for an average period of 14.03 ± 9.71 years at the time of this study. The average number of patients the nurses cared for was 14.42 ± 6.29, and 77% of the nurses reported that they have received training related to ethics (Table 1).

Table 2 shows the distribution of the participants' mean scores of perceived nursing competence, ethical climate perceptions, personality traits, nurses' perceived job-related stress, job satisfaction, and perceived coping skills with VAS. The mean scores of perceived nursing competence and ethical climate perceptions were 5.27 ± 0.95 and 3.65 ± 0.67, respectively. The mean scores of personality traits were extraversion 10.66 ± 3.09, emotional stability 9.39 ± 2.70, openness to experience 9.55 ± 2.93, conscientiousness 11.95 ± 2.70, and agreeableness 10.78 ± 2.64. VAS scores for job satisfaction, perceived job-related stress and perceived coping skills were 4.40 ± 2.47, 8.10 ± 2.07, and 7.17 ± 2.05, respectively (Table 2). Nurses' job satisfaction was generally low according to VAS scores, and perceived job-related stress was high.

Table 2. Mean Scores of Perceived Nursing Competence, Ethical Climate Perceptions, Personality Traits, Perceived Job Satisfaction, Job-Related Stress and Coping Skills of Nurses (n=316)

Scales/Subscales	$\bar{X}$	SD	Min	Max	Range
Nursing Competence	5.27	0.95	1.44	7.00	1-7
General aptitude	5.40	1.10	1.43	7.00	1-7
Staff education and management	4.76	1.20	1.00	7.00	1-7
Ethically-oriented practice	5.54	1.11	2.11	7.00	1-7
Nursing care in team	5.42	1.11	1.29	7.00	1-7
Professional development	5.32	1.17	1.00	7.00	1-7
Personality Traits (n=270)**					
Extraversion	10.66	3.09	2.00	14.00	2-14
Emotional stability	9.39	2.70	2.00	14.00	2-14
Openness to experience	9.55	2.93	2.00	14.00	2-14
Conscientiousness	11.95	2.70	2.00	14.00	2-14
Agreeableness	10.78	2.64	2.00	14.00	2-14
Ethical Climate Perceptions	3.65	0.67	1.31	5.00	1-5
Patients	3.93	0.66	1.00	5.00	1-5
Managers	3.67	1.05	1.00	5.00	1-5
Hospitals	3.04	1.03	1.00	5.00	1-5
Peers	4.10	0.70	1.00	5.00	1-5
Physicians	3.36	0.85	1.00	5.00	1-5
VAS Job Satisfaction	4.40	2.47	.00	10.00	0-10
VAS Job-related Stress	8.10	2.07	1.00	10.00	0-10
VAS Coping Skills	7.17	2.05	1.00	10.00	0-10

* VAS: Visual Analogue Scale, SD: Standard Deviation, .** 270 participants responded to the survey.

Significant correlations between perceived nursing competence, ethical climate perceptions, personality traits and its subscales were found ($p < 0.05$) (Table 3). When the relationship between personality traits and competence was examined, a positive correlation was found between perceived nursing competence and extraversion ($r = 0.218$) and openness to experience ($r = 0.230$). There was a weak positive correlation between the personality traits of conscientiousness ($r = 0.150$), emotional stability ($r = 0.145$) and agreeableness ($r = 0.136$) ($p < 0.05$). The correlation between perceived nursing competence and ethical climate perceptions was moderate and positive ($r = 0.394$, $p < 0.01$). Concerning ethical climate perceptions, significant moderate, positive correlations with perceived nursing competence were associated with patients ($r = 0.385$), peers ($r = 0.462$) and physicians ($r = 0.334$) ($p < 0.01$). Significant correlations were also observed for hospitals ($r = 0.212$) and managers ($r = 0.215$) ($p < 0.01$); however, it was weaker for these sub-dimensions (Table 3).

While a weakly positive correlation between nurses' job satisfaction and perceived nursing competence was found ($r = 0.167$) ($p < 0.01$), there was no statistically significant relationship between nurses' perceived job-related stress and competence ($p > 0.05$ A positive correlation was found between nurses perceived coping skills and competence ($r = .403$), ethical climate ($r = .214$), personality traits, especially extraversion ($r = .286$), and conscientiousness ($r = .222$) (Table 3).

Table 3. Matrix of the Inter-correlation of the Measured Variables (n=316)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Nursing Competence	1	**0.218****	0.145*	**0.230****	**0.150***	**0.136***	**0.394****	**0.385****	**0.215****	**0.212****	**0.462****	**0.334****	0.167**	0.021	**0.403****
Personality Traits (n=270)* **															
2. Extraversion		1	0.257**	0.432**	0.286**	0.301**	0.024	0.057	-0.032	-0.002	0.040	0.069	-0.032	0.052	0.286**
3. Emotional stability			1	0.208**	0.374**	0.363**	0.041	0.053	-0.009	0.053	0.114	0.009	-0.027	-0.118	0.172**
4.Openness to experience				1	0.254**	0.287**	0.053	0.075	0.029	-0.056	0.201**	0.007	-0.087	0.041	0.184**
5. Conscientiousness [a]					1	0.383**	0.051	0.093	0.014	0.061	0.063	-0.034	0.014	-0.048	0.222**
6. Agreeableness						1	0.108	0.142*	0.070	0.101	0.086	0.036	0.053	-0.061	0.127*
7. Ethical Climate Perceptions							1	0.780**	0.835**	0.838**	0.555**	0.743**	**0.405****	-0.160**	**0.214****
8. Patients								1	0.535**	0.567**	0.455**	0.480**	0.342**	-0.117*	0.266**
9. Managers									1	0.628**	0.387**	0.469**	0.337**	-0.163**	0.100
10 Hospitals										1	0.290**	0.604**	0.372**	-0.137*	0.087
11. Peers [a]											1	0.359**	0.131*	-0.031	0.299**
12. Physicians												1	0.307**	-0.137*	0.160**
13. VAS Job Satisfaction													1	-0.259**	0.205**
14. VAS Job-related Stress														1	0.025
15. VAS Coping Skills															1

* < 0.05, ** < 0.01, VAS: Visual Analogue Scale, [a]Spearman correlation was used.*** 270 participants responded to the survey.

A hierarchical linear regression model was conducted to investigate the impact of age, gender, working years, job satisfaction, perceived job-related stress, perceived coping skills, personality traits, and ethical climate on perceived nursing competence (Table 4). When age, gender, working years, perceived job satisfaction, job-related stress, and coping skills, were included, they significantly predicted perceived nursing competence, $F (11.256) = 6.301$, $p < 0.001$), adjusted $R^2 = 0.164$. However, as indicated by the R^2 value, only 16% of the variance in nursing competence could be predicted by perceived coping skills. When personality traits were added, the entire group of variables significantly predicted perceived nursing competence (R^2 change = 0.030, $F (5.256) = 1.968$ $p < 0.001$), and 18% of the variance in nursing competence could be predicted. In the third step, when the ethical climate variable was added, the estimation increased by 10% (R^2 change: 0.100) rising to 28% of the variance in perceived nursing competence that could be predicted in total. Perceived coping skills ($\beta = 0.294$), openness to experience ($\beta = 0.121$) and ethical climate ($\beta = 0.359$) were statistically significantly associated with perceived nursing competence, $F (12.255) = 9.692$, $p < 0.001$, adjusted $R^2 = 0.281$. This could be seen as a large effect size, according to Cohen (1988) (Table 4).

3.2. Discusion

The World Health Organization (WHO) recommended competence be recognized as a core component of professional standards [1]. These standards are general competencies that every nurse must possess to provide optimal nursing services. Therefore, measuring nursing competence is an important indicator for evaluating quality nursing care [28]. First, this study aimed to investigate the self-assessment of nurses' competence levels. The mean score of perceived nursing competence from the present study is moderate and is in line with that of previous studies [21]. However, it is lower than nurses in Turkiye [29] and higher than the results of

relevant studies with nurses [12] and critical care nurses [11] in Japan. The difference in the results of studies might be affected by factors such as the working environment, management styles, and ethical leadership in the hospitals where the studies were conducted.

Second, this study investigated how nurses' demographic characteristics, perceived job satisfaction, job-related stress, coping skills, personality traits, and ethical climate perceptions were associated with perceived nursing competence. The findings showed that openness to experience as a personality trait, ethical climate perceptions, and perceived coping skills were associated with nursing competence. Nurses who self-reported higher competence were more open to experiences, perceived their health care climate as more ethical, and had higher self-reported coping skills. The belief in one's own competence leads to an increase in self-confidence and, as a result, positive attitudes toward the general environment [30].

Table 4. Effects of Demographic Variables, Personality Traits, and Ethical Climate Perceptions on Perceived Nursing Competence: Hierarchical Linear Regression Analysis

Model	**Step 1**			**Step 2**			**Step 3**		
Variables	**B**	**SEB**	**β**	**B**	**SEB**	**β**	**B**	**SEB**	**β**
Age	0.009	0.019	0.087	0.007	0.019	0.071	0.010	0.018	0.098
Sex	-0.068	0.160	-0.025	-0.051	0.162	-0.019	0.007	0.152	0.002
Working years	-0.017	0.018	-0.178	-0.013	0.018	-0.137	-0.011	0.017	-0.113
Job Satisfaction	0.017	0.023	0.044	0.026	0.023	0.067	-0.024	0.023	-0.062
Job-related Stress	0.016	0.027	0.034	0.017	0.028	0.037	0.024	0.026	0.051
Coping Skills	0.199	0.028	**0.422****	0.174	0.029	**0.368****	0.139	0.028	**0.294****
Extraversion				0.015	0.020	0.051	0.020	0.019	0.065
Emotional stability				0.019	0.022	0.054	0.018	0.020	0.051
Openness to experience				0.044	0.020	**0.140***	0.038	0.019	**0.121***
Conscientiousness				-0.013	0.023	-0.038	-0.006	0.022	-0.017
Agreeableness				0.006	0.023	0.017	-0.001	0.022	-0.003
Ethical Climate Perceptions							0.495	0.081	**0.359****
Constant	30.657	0.597		30.108	0.664		10.547	0.672	
	R^2=0.183, Adjusted R^2=0.164, R^2 change=0.183, Significance of F change=<0.001, p=<0.001			R^2=0.183, Adjusted R^2=0.179, R^2 change=0.030, Significance of F change=0.084, p=<0.001			R^2=0.313, Adjusted R^2=0.281, R^2 change=0.100, Significance of F change=<0.001, p=<0.001		

Coefficients Std0. Error (SEB), *p<0.05, **p<0.001

Since personality traits influence behaviors, individuals with different personalities may have different competence in professional settings [6,11,31]. The findings of this study showed that openness to experience as a personality trait was associated with higher perceived nursing competence. Some previous studies conducted in nursing were in parallel with this study and reported that positive personality traits, such as openness to experience, conscientiousness, and extraversion, were correlated with perceived nursing competence [11,12,22]. Individuals who are open to experience are characterized by being creative, courageous, change-loving, curious, independent, analytical, having broad interests, and having non-traditional characteristics. These characteristics may impact on nurses' moral actions and identity in work environments with high ethical climate perceptions [9]. This may reflect that nurses who are open to experience are willing to demonstrate moral courage in matters that have ethical implications. Therefore, openness to experience as a personality trait may be a universally important component that facilitates the development of nursing competence [12].

The findings of the present study additionally indicated that specific combinations of personality traits and ethical climate can either support or impede the development of nursing competence, as assessed by nurses.

The ethical climate of the hospital units is a significant factor influencing the behavior and practices of nurses [13]. The ethical climate perception, which is another important predictor of perceived nursing competence in this study, is similar to the results of the studies conducted with newly graduated nurses in Finland [7,21]. Previous studies have shown the relationship of ethical climate with various factors, such as work-related organizational commitment, quality of care, and organizational quality [13,14,32]; however, few studies were conducted with only newly graduated nurses showing its relationship with perceived nursing competence [7,21]. Nurses are required to be clinically and morally competent in providing high-quality care [7]. An environment that supports ethical practices is a preliminary for this type of care. Hospital administrators have a vital role in establishing and maintaining desirable ethical climates. The ethical climate of work environments correlates with nurse managers' leadership style and support for nurses, influencing how they address nursing competence for the benefit of the patient [7,21]. In this context, it can be said that creating a positive working environment and ethical climate perceptions could be important in increasing perceived nursing competence. Nursing competence is a fundamental requirement for delivering safe and effective patient care. A cross-sectional study indicated that compassion satisfaction among nurses may enhance their clinical competence. Reducing secondary traumatic stress and burnout levels appears to enhance compassion satisfaction [33].

Another remarkable finding of this study was that high coping skills were associated with increased perceived nursing competence in clinical practice. To our knowledge, this is the first time that relationships between perceived coping skills, job-related stress, and job satisfaction with perceived nursing competence have been investigated in the nursing context. In this study, a moderate correlation was found between the personality traits of extroversion, conscientiousness, and perceived coping skills. Extraversion, associated with assertiveness and enjoying social situations, may play a role in coping as psych protective. Thus, extraverted individuals may have higher perceived coping skills [34]. Besides, many factors may affect competence, such as years of experience, marital status, educational level, workplace environment, turnover intention, clinical training, theoretical knowledge, critical thinking, job stress, and job satisfaction [30].

These findings have important implications for nursing management and policy. Healthcare organizations should prioritize the development of a positive ethical climate through ethical training, leadership development, and the establishment of clear ethical guidelines. Additionally, recruitment and retention strategies should consider personality traits that are conducive to nursing competence and coping skills well-being.

3.2.1 Limitations and Strength of the Work

While this study provides valuable insights into the relationships between nursing competence, personality traits, and ethical climate, several limitations must be acknowledged. First, the cross-sectional design of the study limits the ability to infer causality between the variables. Future research should consider longitudinal studies to better understand the causal relationships. Second, the study's sample was drawn from a specific geographic region, which may limit the generalizability of the findings to other settings. It is recommended that future studies include a more diverse sample to enhance the applicability of the results across different healthcare contexts.

One of the strengths of the study is that this is the first study, to our knowledge, showing the impact of nurses' perceived coping skills, personality traits, and ethical climate on perceived nursing competence together. The other is the use of advanced analysis methods, such as the hierarchical linear regression model, which strengthened the results of this study. Furthermore, the tools used in the study were developed scientifically, and their validity and reliability have been demonstrated in several studies.

4. Conclusions

The mean score of perceived nursing competence for nurses was moderate. The findings of this study showed ethical climate perceptions, personality traits such as openness to experience, and perceived coping skills were found to be the factors associated with a higher degree of perceived nursing competence. In this context, specific personality traits, openness to experience as a personality trait, and a positive ethical climate perception may increase nursing competence. Additionally, environmental factors that enable nurses to express their personality traits may encourage them to make moral decisions and offer the opportunity to develop their competencies further. Since individual behaviors embody personality traits, nurse managers can understand each nurse's personality traits and take them into account when allocating nursing positions. Most importantly, nurse managers can contribute to increasing nursing competence by providing a working environment with a positive ethical climate. To improve the implementation and assessment of comprehensive solutions for increasing nursing competence, further research on this topic is required. Future studies may examine the relationship of individual factors, such as nurses' motivation, ethical behavior, and other environmental factors, with nursing competence.

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5.1 Author Contributions
Concept and design: C.A., S.S., M.A.A. Data collection: S.S. Data analysis and interpretation: C.A. Writing manuscript: C.A., M.A.A. Critical review: C.A., S.S., M.A.A.
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