

Investigating the Relationship Between Critical Thinking Disposition and Job Satisfaction Among Critical Care Nurses

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ABSTRACT

Objective: This research aims to examine the relationship between critical thinking disposition and job satisfaction among critical care nurses.

Materials and Methods: The research data were obtained from 104 nurses working in critical care units (i.e., adult, pediatric, newborn, cardiovascular surgery, coronary) as well as other healthcare personnel working with the nurse staff and serving as nurses, all of whom agreed to participate the research while working in a training and research hospital. The research data were gathered using the author-developed sociodemographic survey form, Marmara Critical Thinking Dispositions Scale and Nurse Job Satisfaction Scale and analyzed using the program Statistical Package for Social Sciences (SPSS 21.0).

Results: Of the participants, 74% are female (n=77), 69.2% are between the ages of 21-29 (n=72), and 34.6% are married (n=36); at the same time, 94.2% of the participants are nursing graduates (n=98). The intensive care nurses participating in the research (n=104) were found to have a mean score on the Marmara Critical Thinking Disposition Scale of 4.22 out of 5 (SD=0.48). The average of their job satisfaction scores was 3.76 out of 5 (SD=0.45). The participants were found to have high critical thinking levels and moderate job satisfaction levels.

Conclusion: The study has determined the intensive care nurses with sufficient critical thinking disposition levels to also have increased job satisfaction. Many of the sub-scales that determine individuals' critical thinking disposition and job satisfaction have been determined to affect each other positively. The results from this research have been found to be compatible with a study conducted outside of Türkiye on this subject.

Keywords: Critical thinking disposition, Intensive care, Job satisfaction, Nursing

INTRODUCTION

Critical thinking skills are used during the education and practice of nursing for spreading professionalism and developing basic attitudes (1). Having nurses develop critical thinking skills is an important condition for the provision of quality care (2). Critical thinking allows nurses to develop their practice skills based on their own decisions and is stated to improve the efficiency of the service nurses provide as well as their ability to evaluate current conditions. Critical thinking allows nurses to establish causal relationships, accelerates thinking processes through the method of inductive deduction, and improves their intellectual abilities regarding such things as evaluating facts. In addition, nurses disposed toward critical thinking have been stated gain the ability to meet patients' needs under all conditions,

to think about options that will lead to better results, and to apply these options by thinking, questioning and understanding them before fulfilling a given task (3).

Nurses who work in the nursing profession, especially those in intensive care, often encounter unexpected complex problems and are the first to identify changes in a patient's condition. Intensive care nurses are expected to make quick decisions in an emergency (4). Therefore, critical thinking is an extremely important ability that allows intensive care nurses to perform their roles by making logical and appropriate decisions, to gain professional knowledge and experience, to distribute responsibilities appropriately, to ensure the reliability of the hospital environment, and to provide effective nursing care (5).

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Nurses are a decisive element in the quality of care and patient care satisfaction due to their special position of being in communication with patients 24 hours a day. On the other hand, a nurse's job satisfaction is considered one of the factors that increase nurse-related patient satisfaction (6). A study conducted on nurses working in an ear, nose, and throat (ENT) polyclinic in 2011 examined the relationship between nurses' decision-making strategies and professional satisfaction levels and determined nurses who'd developed autonomous decision-making strategies to have significantly higher job satisfaction levels (7). Various factors that affect nurses' job satisfaction (e.g., stress management) have been discussed in the literature (8). In addition, work stress was found to be low in nurses with high levels of critical thinking (9). Another study stated a significant positive relationship to exist for nurses' educational preparation, autonomy, and critical thinking with their job satisfaction (10). In this context, studies in Türkiye have separately discussed intensive care nurses' critical thinking dispositions and job satisfaction, with none of these studies being found to have revealed a relationship between critical thinking disposition and job satisfaction. The aim of this study is to determine the relationship between intensive care nurses' critical thinking dispositions and job satisfaction levels, and as such, the research asks the following questions:

- Does a relationship exist between the critical thinking dispositions of nurses working in intensive care and their job satisfaction levels?
- What variables affect the critical thinking dispositions and job satisfaction levels of nurses working in intensive care?

MATERIALS AND METHODS

The study is a descriptive type of research, and its universe consists of 128 employees working as intensive care nurses at a university hospital. The sample of the study consists of 104 participants who met the following inclusion criteria:

- The participants are having worked in intensive care for at least 6 months
- The participants volunteering to participate in the study

Data Collection Process and Tools

The data were collected between June and July in 2020. The research data were collected in a hospital setting. The questionnaires were delivered to the employees by hand through the responsible nurses. The data collection process had been planned to occur over seven workdays, but due to employees changing shifts and the limitations of the COVID-19 pandemic, it was completed over 15 workdays. The data were collected using a socio-demographic questionnaire form, the Marmara Critical Thinking Tendency Scale (11), and the Nurse Job Satisfaction Scale, which were created by the researcher for the purposes of the study.

Socio-Demographic Questionnaire Form

This form contains 23 questions and was created by the researcher in consideration of the literature (5, 8) in order to

determine the participants' sociodemographic characteristics and to compare their critical thinking dispositions and job satisfaction within the framework of these characteristics.

Marmara Critical Thinking Dispositions Scale (MCTDS)

This scale was developed by Özgenel and consists of six subscales (reasoning, reaching judgment, seeking evidence, seeking truth, open-mindedness, systematicity) and 28 items. The scale items are scored from 1 = lowest to 5 = highest, with higher scores indicating higher critical thinking tendencies. Whether a participant has the characteristics determined by one of the subscales is determined by their scores for the items from each subscale. In addition, the scale is stated to provide the critical thinking disposition score, with the average of the scores obtained from the subscales and the total scale being calculated separately while scoring. The original validity and reliability study of the scale revealed a Cronbach's alpha = 0.91, while the Cronbach's alpha as calculated in this study is 0.950. The distribution of the scale items according to subscale and question number is as follows: reasoning involves questions 1-6, reaching judgment involves questions 7-12, searching for evidence involves questions 13-16, searching for the truth involves questions 17-20, open-mindedness involves questions 21-24, and systematicity involves questions 25-28 (11).

Nurse Job Satisfaction Scale (NJSS)

The scale was determined to be valid and reliable for Turkish by Yılmaz and Yıldırım (12). and has 27 items and 4 subdimensions (positive feelings about the job, appropriate support from superiors, perceived importance in the workplace, and pleasant work environment). The original scale was created by Muya et al. (13) in Japan, with a Cronbach's alpha = 0.90 being found in the Turkish validity and reliability study (11). Cronbach's alpha was calculated as 0.882 for the current study. The scale items are scored between 1 and 5 as a 5-point Likert-type scale. The total score for the scale is evaluated as 5 showing high job satisfaction and 1 showing low job satisfaction. The distribution of the items according to the subscales and the order of the scale's 27 questions is as follows: positive feelings about the job involves questions 1-8, appropriate support from superiors involves questions 9-14, perceived importance in the workplace involves questions 15-22, and pleasant work environment involves questions 23-27.

Evaluating the Data

The study data were transferred to digital media and analyzed in the package program SPSS 21 with the level of significance being determined as $p < 0.05$. Percentages, means, standard deviations, and frequencies have been calculated over the descriptive statistics data. The skewness values of the variables range between -0.79 and 0.09, and between -0.87 and 0.24 for the kurtosis values. Because the kurtosis and skewness values range between ± 1 , the variables are seen to exhibit a normal distribution. For this reason, parametric statistics have been used to analyze the data. In this context, the t-test, one-way analysis of variance (ANOVA), Pearson correlation analysis, and Scheffe test (a post-hoc test) were performed over the independent samples.

Limitations of the Study

The research was carried out between June and July in 2020. The changes that occurred in the hospital and work conditions due to the COVID-19 pandemic that was experienced during these dates and how this affected the employees are considered to be the limitations of the research. The presence of employees who did not want to participate in the study and who were absent from work on the dates of the study are also considered to be other limitation factors.

Ethical Considerations

This research was evaluated ethically in the planning stage by an ethics committee. In addition, permission was obtained from the Health Directorate for the pre-research study. The developer of the MCTDS stated in their study that permission for using the scale is not required (11), while permission was obtained from the developer of the NJSS for its use. The participants were informed before starting the study, and written consent was obtained from them using an informed consent form.

RESULTS

The distribution of sociodemographic and work life characteristics of intensive care nurses are given in Table 1.

Table 1: Socio-demographic and work life characteristics of intensive care nurses (N=104)

Characteristics	Category	Number (n)	Percentage (%)
Age	21-29 years	72	69.2
	30 years and older	32	30.8
Gender	Female	77	74.0
	Male	27	26.0
Marital status	Married	36	34.6
	Single	68	65.4
State of education	High school	18	17.3
	Undergraduate	79	76.0
	Postgraduate	7	6.7
Time spent in intensive care	6 months- 1 year	30	28.8
	1 year- 5 years	37	35.6
	More than 5 years	37	35.6
Willingly choose the nursing profession	Yes	83	79.8
	No	21	20.2
Evaluation of working conditions	Good	15	14.4
	Medium	75	72.1
	Bad	14	13.5
Thought of quitting the job	Yes	11	10.6
	No	93	89.4
Feeling safe at work	Yes	61	58.7
	No	43	41.3
Supporting participation in scientific activities	Yes	62	59.6
	No	42	40.4
Receive training in critical thinking	Yes	17	16.3
	No	87	83.7
Association membership	Yes	20	19.2
	No	84	80.8
Nurse certificate	Yes	31	29.8
	No	73	70.2

The participants' mean age is 28.23±5.22, with 74% being female, 65.4% being single, and 76% having an undergraduate education. The nurses have worked in their respective unit for an average of 3.15 years and for an average of 48.67 hours per week, though this is more varied. Of the nurses, 35.6% have been working in intensive care for more than 5 years. 79.8% chose their profession voluntarily, 72.1% state their working conditions to be medium satisfying. Meanwhile, 16.3% of the participants have received critical thinking training, while 80.8% have no membership in any professional association. The mean scores regarding the intensive care nurses' critical thinking dispositions and job satisfaction levels based on the NJSS and MCTDS and their subscales are given in Table 2.

The findings regarding the intensive care nurses' critical thinking dispositions and the variables affecting their job satisfaction are given in two separate tables (Tables 3 and 4) within the scope of the MCTDS and NJSS. While no significant difference was found regarding the MCTDS total score and subscale scores according to the intensive care nurses' age groups ($p>0.05$), a significant difference was found for the NJSS with regard to the subscale of appropriate support from superiors and the total job satisfaction score, with a significant difference ($p<0.05$) occurring in the average scores for individuals in the 21-29 age range.

A significant difference was also found for the MCTDS between the nurses' gender and their total scores on the MCTDS and scores for the subdimensions of seeking truth and systematicity ($p<0.05$). This difference saw a high mean score for males. No significant relationship was found for gender with the NJSS total score or subscale scores ($p>0.05$). Also, while no significant relationship was found between the nurses' marital status and their MCTDS scores ($p>0.05$), a statistically significant difference was found regarding the subscale of reasoning, reaching judgment, seeking evidence, seeking truth, open-mindedness, systematicity ($p<0.05$). Accordingly, single nurses have higher average scores than married nurses. While no significant difference was found between the nurses' education levels and their MCTDS scores ($p>0.05$), a significant difference was found for the subscale of appropriate support from superiors on the

Table 2: Critical thinking dispositions and job satisfaction mean scores (N=104)

	Subscale	n	Mean	SD
NJSS	Positive feelings about the job	104	3.91	0.60
	Appropriate Support from Superiors	104	3.53	1.03
	Perceived Importance in the Workplace	104	4.11	0.44
	Pleasant work environment	104	3.23	0.73
MCTDS	Job Satisfaction Total	104	3.76	0.48
	Reasoning	104	4.26	0.53
	Reaching judgment	104	4.15	0.52
	Seeking evidence	104	4.26	0.56
	Seeking truth	104	4.13	0.54
	Open-mindedness	104	4.21	0.56
	Systematicity	104	4.30	0.49
	Critical Thinking Total	104	4.22	0.45

Table 3. Findings related to the variables affecting the job satisfaction of intensive care nurses (N=104)

Variables	NJS															
	Positive Feelings About the Job			Appropriate Support from Superiors			Perceived Importance in the Workplace			Pleasant Work Environment			Job Satisfaction Total			
	Mean±SD	t	p	Mean±SD	t	p	Mean±SD	t	p	Mean±SD	t	p	Mean±SD	t	p	
Age																
21-29 years (n=72)	3.96±0.62			3.72±0.9			4.11±0.46			3.25±0.69			3.82±0.47			
30 years and older (n=32)	3.8±0.55	1.3	0.196	3.1±1.19	2.875	0.005	4.1±0.39	0.096	0.923	3.16±0.83	0.573	0.568	3.62±0.47	2.029	0.045	
Gender																
Female (n=77)	3.93±0.54			3.61±0.95			4.11±0.46			3.22±0.75			3.78±0.45			
Male (n=27)	3.84±0.74	0.685	0.495	3.29±1.23	1.424	0.158	4.10±0.39	0.072	0.943	3.24±0.69	-0.112	0.911	3.68±0.54	0.920	0.360	
Marital Status																
Married (n=36)	3.87±0.60			3.25±1.19			4.11±0.42			3.23±0.81			3.69±0.52			
Single (n=68)	3.93±0.60	-0.500	0.618	3.67±0.91	-1.989	0.049	4.11±0.45	-0.011	0.991	3.22±0.69	0.082	0.935	3.80±0.45	-1.106	0.271	
State of education																
High school (n=18)	3.98±0.66			4±0.65			4.08±0.48			3.26±0.93			3.88±0.47			
Undergraduate and Postgraduate (n=86)	3.9±0.59	0.541	0.59	3.43±1.07	2.176	0.032	4.11±0.43	-0.298	0.766	3.22±0.69	0.227	0.821	3.73±0.48	1.21	0.229	
Receive training in critical thinking																
Yes (n=17)	4.02±0.60			3.38±1.16			4.37±0.38			2.98±0.74			3.79±0.56			
No (n=87)	3.89±0.60	0.791	0.431	3.56±1.01	-0.655	0.514	4.06±0.43	2.761	0.007	3.27±0.72	-1.498	0.137	3.75±0.46	0.288	0.774	
The state of choosing the profession willingly																
Yes (n=83)	3.96±0.58			3.56±0.99			4.08±0.45			3.3±0.69			3.79±0.46			
No (n=21)	3.7±0.64	1.835	0.069	3.42±1.2	0.557	0.579	4.2±0.4	-1.049	0.297	2.94±0.81	2.043	0.044	3.64±0.52	1.225	0.223	
Thought of quitting the job																
Yes (n=11)	3.31±0.4			2.86±1.02			4.07±0.64			2.63±0.75			3.31±0.42			
No (n=93)	3.98±0.58	-3.677	0.000	3.61±1.01	-2.311	0.023	4.11±0.41	-0.254	0.8	3.3±0.7	-2.944	0.004	3.81±0.46	-3.405	0.001	
Feeling safe at work																
Yes (n=61)	4.06±0.5			3.8±0.95			4.13±0.45			3.39±0.74			3.9±0.41			
No (n=43)	3.69±0.66	3.233	0.002	3.15±1.04	3.266	0.001	4.08±0.42	0.585	0.56	3±0.66	2.778	0.007	3.56±0.5	3.786	0.000	
Support for participation in scientific activities																
Yes (n=62)	3.98±0.56			3.88±0.78			4.12±0.44			3.34±0.73			3.88±0.42			
No (n=42)	3.8±0.64	1.487	0.14	3.01±1.14	4.615	0.000	4.09±0.44	0.256	0.799	3.06±0.7	1.9	0.06	3.58±0.51	3.317	0.001	
Being a member of a professional association																
Yes (n=20)	3.90±0.61			2.94±1.26			4.21±0.43			3.07±0.74			3.62±0.41			
No (n=84)	3.91±0.60	-0.130	0.897	3.67±0.93	-2.941	0.004	4.08±0.44	1.132	0.260	3.26±0.73	-1.091	0.278	3.79±0.49	-1.413	0.161	
Having a certificate related to nursing																
Yes (n=31)	4.02±0.62			3.52±1.1			4.22±0.43			3.46±0.79			3.86±0.52			
No (n=73)	3.86±0.59	1.24	0.218	3.53±1.01	-0.077	0.938	4.06±0.43	1.725	0.087	3.13±0.68	2.153	0.034	3.71±0.45	1.493	0.138	
Working time in intensive care																
6 months - 1 year (n=30)	4.00±0.55			4.13±0.58			4.07±0.41			3.44±0.67			3.94±0.36			
1- 5 years (n=37)	3.89±0.6	0.434	0.65	3.39±0.96	8.498	Post-hoc	4.05±0.48	1.063	0.35	3.08±0.75	1.993	0.14	3.68±0.53	3.329	Post-hoc	0.04
More than 5 years (n=37)	3.86±0.62			3.18±1.17			4.19±0.41	1>2.3		3.2±0.74			3.68±0.47			1>2.3
Opinions on working conditions																
Good (n=15)	4.40±0.35			4.08±0.90			4.18±0.48			3.78±0.66			4.15±0.43			
Medium (n=75)	3.87±0.59	7.820	Post-hoc	3.47±1.01	2.887	0.060	4.08±0.42	0.486	0.616	3.18±0.68	6.955	Post-hoc	3.72±0.45	7.262	Post-hoc	0.001
Bad (n=14)	3.59±0.59	1>2.3		3.25±1.14			4.17±0.53			2.85±0.80			3.55±0.49	1>2.3		1>2.3

NJSS scores and nurses' education level, with a significant difference ($p < 0.05$) showing high school graduate nurses to have higher scores for this subscale.

When evaluating the data with regard to work conditions, significant differences were found with regard to the scores for the subscales of reaching judgment and seeking truth in MCTDS ($p < 0.05$). Significant differences were also found regarding the total score on the NJSS and the scores from the subscales of positive feelings about the job, pleasant working environment, and job satisfaction ($p < 0.05$). As a result of the analysis, those who evaluated their working conditions as good were found to have significantly higher scores on NJSS. While no significant difference was found between nurses' total MCTDS score and time spent in the intensive care unit ($p > 0.05$), a significant difference was found for the subscale of appropriate support from superiors and the total NJSS score in terms of the time spent in the intensive care unit ($p < 0.05$). As a result of the analysis, those who've worked in intensive care between 6 months and 1 year are seen to receive more support from their superiors and to have higher job satisfaction compared to those who've worked there for more than one year.

When examining the MCTDS and NJSS findings with respect to the intensive care nurses' critical thinking training status, the MCTDS findings show a significant difference to occur in the total MCTDS score and the subscales of reasoning, reaching judgment, seeking evidence, seeking the truth, open-mindedness, and systematicity, as well as for the NJSS subscale of perceived importance in the workplace ($p < 0.05$). The average scores in these areas for those who'd received critical thinking training are significantly higher.

When considering the MCTDS and NJSS findings with respect to the condition of intensive care nurses choosing the profession voluntarily or not, no significant difference is seen for the MCTDS or its subscales ($p > 0.05$). According to NJSS findings, however, a significant difference is found regarding the subscale of pleasant working environment subscale ($p < 0.05$). In the pleasant work environment, with those who'd chosen the profession willingly having higher scores for this subscale. No significant relationship is seen between nurses' thoughts of quitting and the MCTDS findings ($p > 0.05$). According to the NJSS findings, however, a significant difference occurred in the total NJSS score and scores from the subscales of positive feelings about work, appropriate support from superiors, and pleasant work environment ($p < 0.05$), with those who did not have thoughts of leaving the job having higher scores on the mentioned subscales.

While no significant relationship was observed between the MCTDS scores and feeling safe at work ($p > 0.05$), a significant difference was found for total NJSS score and the scores for the subscales of positive feelings about work, appropriate support from superiors, and pleasant work environment ($p < 0.05$), with those who feel safe at work having higher total scores. No significant difference was seen regarding nurses' MCTDS scores and their support status for participating in scientific activities

($p > 0.05$). However, a significant difference was seen in the total NJSS score and the score from the subscale of receiving appropriate support from superiors ($p < 0.05$), with those who thought that participation in scientific activities was supported to have higher total NJSS scores.

When considering intensive care nurses who have a professional association membership, a significant difference is seen in the MCTDS subscale of systematicity ($p < 0.05$), where those who are members of an association have higher scores for this subscale. In addition, a significant difference was found for the NJSS subscale of appropriate support from superiors ($p < 0.05$), with the nurses who were not members of an association receiving higher scores on the subscale of appropriate support from superiors.

When examining the MCTDS and NJSS findings with respect to intensive care nurses having or not having a nursing certificate, no significant difference was found regarding nurses' MCTDS scores ($p > 0.05$). For the NJSS findings, however, a significant difference was found regarding the subscale of pleasant work environment ($p < 0.05$), where those with a nursing certificate are seen to have higher scores on the subscale of pleasant working environment.

Table 5 shows the findings regarding the relationship between intensive care nurses' critical thinking dispositions and job satisfaction levels. As a result of the analysis, the following can be said:

- A low-level significant positive correlation exists for positive feelings about work with reasoning, reaching judgment, seeking evidence, seeking truth, critical thinking and a moderate-level significant positive correlation exists for positive feelings about work relationship exists between open-mindedness ($p < 0.05$).
- A moderate-level significant positive relationship exists for perceived importance in the workplace and overall critical thinking as well as the subscales of reasoning, reaching judgment, seeking evidence, seeking truth, open-mindedness, and systematicity ($p < 0.05$).
- A low-level significant positive correlation exists between a pleasant working environment and open-mindedness ($p < 0.05$).
- A low-level significant positive relationship exists between the overall NJSS score and the MCTDS subscales of reasoning and truth-seeking, as well as moderate-level significant positive relationships for the overall NJSS score with the overall MCTDS score and its subscales of reaching judgment and open-mindedness ($p < 0.05$).

DISCUSSION

The sociodemographic and work-related characteristics of the intensive care nurses who participated in the research affect their critical thinking and job satisfaction scores, these findings have been discussed separately, and finally the relationship between the two concepts will be discussed.

Table 4: Findings related to variables affecting critical thinking dispositions of intensive care nurses (N=104)

Variables	MCTDS													
	Reasoning Mean±SD	t/p	Reaching judgment Mean±SD	t/p	Seeking evidence Mean±SD	t/p	Seeking truth Mean±SD	t/p	Open-mindedness Mean±SD	t/p	Systematicity Mean±SD	t/p	Critical Thinking Total Mean±SD	t/p
Age														
21-29 years (n=72)	4.3±0.53	0.899/	4.16±0.48	0.443/	4.27±0.56	0.332/	4.23±0.55	-0.112/	4.21±0.57	0.000/	4.28±0.47	-0.481/	4.23±0.44	0.299/
30 years and older (n=32)	4.19±0.55	0.371	4.11±0.6	0.658	4.23±0.57	0.74	4.14±0.52	0.911	4.21±0.53	1.000	4.33±0.55	0.632	4.2±0.49	0.765
Gender														
Female (n=77)	4.23±0.51	-1.135/	4.11±0.48	-1.300/	4.20±0.56	-1.879/	4.06±0.53	-2.413/	4.16±0.54	-1.737/	4.22±0.48	-2.595/	4.16±0.44	-2.062/
Male (n=27)	4.37±0.59	0.259	4.26±0.61	0.197	4.43±0.51	0.063	4.35±0.51	0.018	4.37±0.60	0.085	4.50±0.49	0.011	4.37±0.46	0.042
Marital Status														
Married (n=36)	4.28±0.48	0.181/	4.19±0.46	0.577/	4.27±0.54	0.207/	4.11±0.53	-0.290/	4.20±0.55	-0.227/	4.29±0.46	-0.130/	4.22±0.43	0.113/
Single (n=68)	4.26±0.56	0.857	4.13±0.55	0.565	4.25±0.57	0.837	4.15±0.55	0.772	4.22±0.57	0.821	4.30±0.51	0.897	4.21±0.47	0.910
State of education														
High school (n=18)	4.13±0.43	-1.13/	4.08±0.48	-0.631/	4.06±0.62	-1.607/	4±0.5	-1.198/	4.16±0.56	-0.429/	4.09±0.52	-1.924/	4.09±0.43	-1.302/
Undergraduate and Postgraduate (n=86)	4.29±0.55	0.261	4.16±0.52	0.53	4.3±0.54	0.111	4.16±0.54	0.234	4.22±0.56	0.669	4.34±0.48	0.057	4.24±0.45	0.196
Receive training in critical thinking														
Yes (n=17)	4.55±0.42	2.483/	4.49±0.43	3.028/	4.55±0.47	2.432/	4.45±0.52	2.702/	4.50±0.50	2.291/	4.58±0.43	2.675/	4.52±0.42	3.116/
No (n=87)	4.21±0.54	0.015	4.08±0.51	0.003	4.20±0.56	0.017	4.07±0.52	0.008	4.16±0.56	0.024	4.24±0.49	0.009	4.16±0.44	0.002
The state of choosing the profession willingly														
Yes (n=83)	4.22±0.55	-1.761/	4.13±0.53	-0.908/	4.2±0.56	-2.208/	4.08±0.53	-1.968/	4.18±0.56	-1.151/	4.24±0.49	-2.344/	4.17±0.46	-1.963/
No (n=21)	4.45±0.4	0.081	4.24±0.47	0.366	4.5±0.5	0.029	4.34±0.53	0.052	4.34±0.55	0.252	4.52±0.45	0.021	4.39±0.39	0.052
Thought of quitting the job														
Yes (n=11)	4.42±0.53	1.009/	4.39±0.44	1.632/	4.27±0.68	0.066/	4.13±0.76	-0.02/	4.25±0.76	0.193/	4.2±0.35	1.942/	4.37±0.51	1.138/
No (n=93)	4.25±0.53	0.315	4.12±0.52	0.106	4.26±0.55	0.947	4.13±0.51	0.984	4.21±0.54	0.847	4.25±0.49	0.054	4.2±0.44	0.258
Feeling safe at work														
Yes (n=61)	4.22±0.51	-0.895/	4.12±0.51	-0.592/	4.26±0.56	0.006/	4.12±0.52	-0.366/	4.17±0.54	-0.914/	4.24±0.48	-1.435/	4.19±0.43	-0.816/
No (n=43)	4.32±0.57	0.373	4.18±0.53	0.555	4.26±0.57	0.995	4.16±0.57	0.715	4.27±0.59	0.363	4.38±0.5	0.154	4.26±0.48	0.416
Support for participation in scientific activities														
Yes (n=62)	4.27±0.47	0.052/	4.14±0.47	-0.142/	4.22±0.58	-0.795/	4.1±0.52	-0.786/	4.2±0.55	-0.374/	4.22±0.47	-1.981/	4.19±0.43	-0.666/
No (n=42)	4.26±0.62	0.959	4.16±0.58	0.887	4.31±0.53	0.428	4.19±0.57	0.434	4.24±0.58	0.709	4.41±0.51	0.05	4.25±0.48	0.507
Being a member of a professional association														
Yes (n=20)	4.35±0.54	0.822/	4.20±0.42	0.519/	4.37±0.47	0.998/	4.27±0.47	1.244/	4.38±0.44	1.496/	4.51±0.43	2.150/	4.34±0.38	1.320/
No (n=84)	4.24±0.53	0.413	4.14±0.54	0.605	4.23±0.58	0.321	4.10±0.55	0.217	4.17±0.58	0.138	4.25±0.50	0.034	4.19±0.47	0.190
Having a certificate related to nursing														
Yes (n=31)	4.31±0.49	0.59/	4.15±0.54	0.026/	4.28±0.45	0.238/	4.15±0.47	0.168/	4.37±0.44	1.811/	4.34±0.45	0.614/	4.26±0.41	0.638/
No (n=73)	4.24±0.55	0.557	4.15±0.51	0.979	4.25±0.6	0.813	4.13±0.57	0.867	4.15±0.6	0.073	4.28±0.51	0.54	4.2±0.47	0.525
Working time in intensive care														
6 months - 1 year (n=30)	4.23±0.47	0.533/	4.17±0.51	0.942/	4.20±0.58	0.833/	4.15±0.48	1.598/	4.21±0.56	2.056/	4.21±0.56	2.277/	4.20±0.44	1.511/
1- 5 years (n=37)	4.22±0.52	0.59	4.06±0.45	0.39	4.20±0.58	0.44	4.02±0.58	0.21	4.08±0.61	0.13	4.22±0.44	0.11	4.13±0.44	0.23
More than 5 years (n=37)	4.34±0.6		4.22±0.58		4.35±0.52		4.24±0.53		4.35±0.49		4.43±0.47		4.32±0.47	
Opinions on working conditions														
Good (n=15)	4.48±0.55	2.032/	4.42±0.47	5.206/	4.43±0.49	2.506/	4.33±0.52	3.272/	4.31±0.56	1.042/	4.43±0.47	1.804/	4.41±0.45	3.527/
Medium (n=75)	4.20±0.52	0.136	4.05±0.48	0.007	4.18±0.56	2.506/	4.05±0.51	0.042	4.17±0.56	0.356	4.24±0.47	1.804/	4.15±0.42	0.033
Bad (n=14)	4.36±0.56		4.39±0.58	Post-hoc 1>2,3	4.48±0.58	0.087	4.37±0.62	Post-hoc 1>2,3	4.37±0.58		4.46±0.61	0.170	4.40±0.54	Post-hoc 1>2,3

Table 5: The relationship between critical thinking dispositions and job satisfaction of intensive care nurses (N=104)

MCTDS	NJSS				
	Positive Emotions Related to Work	Appropriate Support from Superiors	Perceived Importance in the Workplace	Enjoyable Working Environment	Job Satisfaction Total Score
Reasoning	0.24*	0.07	0.47**	0.16	0.29**
Reaching judgment	0.25**	0.09	0.50**	0.15	0.31**
Seeking evidence	0.22*	-0.03	0.45**	-0.01	0.19
Seeking truth	0.29**	-0.02	0.52**	0.08	0.26**
Open-mindedness	0.31**	0.02	0.46**	0.25*	0.32**
Systematicity	0.09	-0.14	0.42**	0.04	0.09
Critical Thinking	0.28**	0.01	0.56**	0.14	0.30**

* p<0.05, ** p< 0.01

When considering the sociodemographic and work-related characteristics that affect critical thinking, the variables of being a man, receiving critical thinking training, being a member of a professional association, and having good work conditions stand out. In the comparison made according to gender, male nurses can be said to have a higher tendency to seek truth, systematicity, and critical thinking than female nurses. While findings are seen in the literature stating gender to not affect critical thinking (10,14), studies related to gender and critical thinking have found men to have a higher tendency to think critically than women in different occupational groups (15). In addition, marital status was not found to affect critical thinking disposition, which parallels other studies (10). The current study also found critical thinking dispositions to be unaffected by educational status. When examining the literature on this subject, although studies are seen to support this finding (16,17), two other studies involving nurses and managerial nurses have stated the critical thinking dispositions of postgraduate nurses to be significantly higher (18,19).

Although the rate of those who received any training on critical thinking (as in-service training or as a course during undergraduate education) among the intensive care nurses was quite low in the current study, they had high levels of critical thinking disposition. This shows the positive effect critical thinking education has on critical thinking disposition as well as the importance of critical thinking education. The fact that choosing the profession voluntarily had no effect on critical thinking disposition was similar to a study conducted with nursing students that found the critical thinking levels of those who'd voluntarily chosen the profession to be no different from those who'd not voluntarily chosen the profession (18).

The current study found no relationship for the intensive care nurses' critical thinking dispositions and parameters such as thinking about leaving the job, feeling safe at work, time spent working in the intensive care unit, having support for participation in scientific activities. Balcı's study similarly found participation in scientific activities to not affect critical thinking disposition (18). In addition, several studies have stated participation in scientific activities to increase the tendency to think critically (2,20). This difference in research results may have been caused by differences in the participation rates in scientific activities or variation in the content of the scientific activities

among the different samples. Critical thinking tendencies do not change according to the nurses' work experience. In this case, one can conclude that the length of time work in the unit and therefore the intensive care experience does not change their critical thinking dispositions. This result shows parallels to the results from Arslan et al.'s study (20).

Meanwhile, although a low rate of intensive care nurses evaluated their work conditions as good in the research, they had higher scores on the reaching judgment and seeking truth subscales as well as the overall score for critical thinking disposition. Work conditions affect critical thinking dispositions (19). Therefore, working under good conditions can be said to increase critical thinking disposition.

No relationship was found between being a member of an association and the critical thinking dispositions for intensive care nurses; however, the nurses who are association members make up 20% of the participants, and they received higher scores for the MCTDS subscale of systematicity. Accordingly, association membership can be said to have an indirect relationship with critical thinking, or that employees who have good systematic thinking features are more inclined to become members of a professional association. As a matter of fact, Maraşlı's study (21) stated membership in an association to not relate to nurses' professional values, despite these nurses receiving higher-than-average scores for the subscales of responsibility and security.

When considering the sociodemographic and work-related characteristics that affect job satisfaction, the abundance of relational findings is striking. The factor of age has been determined to affect job satisfaction, with a sense of appropriate support from superiors increasing as age decreases. While the literature has stated job satisfaction to not be affected by age (10,20), one study did conclude job satisfaction to decrease as age increases (8). Burnout related to working over the years can be considered to negatively affect job satisfaction. In addition, participants who are single, high school graduates, and who have no association membership similarly receive more appropriate support from their superiors. The support seen from superiors is thought to be greater for participants with these characteristics; employees in this age are more supported than manager nurses because they are new to the profession, are enthusiastic, and

have less professional experience. While the job satisfaction of high school graduate nurses was found to be higher in the literature, job dissatisfaction has also been found to increase as education status increases (21,22). In addition, managers who support and guide the young nurses who continue to be oriented toward the profession, unit, and institution can be considered normal in their work environment.

The findings on participants' perceptions of positive feelings, pleasant work environment, and job satisfaction who also evaluated their work conditions as good resemble those in the literature (16,21). Therefore, nurses are thought to get more satisfaction from their jobs when they have good work conditions (e.g., wages, promotion opportunities, fair management, balanced night/weekend shifts, leave opportunities, and proper number of employees). Those who've worked in intensive care between 6 months and 1 year have higher job satisfaction. This situation can be interpreted as longer time working in an intensive care unit negatively affecting job satisfaction. Kahraman et al.'s study (8) also found job satisfaction to decrease as the time spent in an intensive care unit increases.

This study determined that the participants who preferred the profession enjoyed their work environments more. The literature has similarly stated that those who willingly choose their profession enjoy their work environments more (8). In addition, intensive care nurses who have no thoughts of quitting and who feel safe at work are seen to have high job satisfaction levels. Other studies, however, have stated the job satisfaction of nurses who do not intend to quit to be very low (22,23). This situation can be thought to possibly be due to the necessity of working in the profession and how the psychological necessity negatively affects job satisfaction. In addition, the sample and work environment characteristics of studies vary. The participants in this study can be thought to easily exercise their legal rights because they work in a state institution, find wage opportunities reliable according to general conditions, which positively affects their job satisfaction and sense of security. In addition, a study related to the subject stated the job satisfaction of those who state that the future of the profession may be good to also be more likely to they find their job reliable (8).

Supporting participation in scientific activities is one of the features in this study that increased job satisfaction. Similar results were obtained in another study (21). However, having a certificate in nursing was found to not affect job satisfaction levels but to positively affect the subscale score for pleasant work environment. Different results have been found in the literature. Namely, one study conducted with nurses found certificate programs to not affect job satisfaction levels but to create significant differences in the job satisfaction subscales (24). Another study on the job motivation of intensive care nurses determined having a certificate to have no effect on job satisfaction (25). The more sufficient practical skills of the intensive care nurses participating in the certificate programs can be considered to make the work environment more pleasant without increasing job satisfaction.

The intensive care nurses in this study have high critical thinking dispositions and moderate levels of job satisfaction. A study conducted abroad stated the critical thinking levels of nurses to generally be high or moderate, while studies in Türkiye have found the critical thinking levels of nurses to generally be at medium or low levels (26). This can be attributed to the change in sample sizes and the study conditions of descriptive studies, as well as the fact that developments in nursing education and approaches positively affect critical thinking dispositions. One study on nurses' job satisfaction in Türkiye found nurses to be the occupational group with the lowest job satisfaction among health professionals (27). Various factors such as workload, work hours, work environment, social value given to the nursing profession, and insufficient salaries can be thought to affect this situation. In addition, as intensive care nurses' critical thinking tendencies increase, their job satisfaction also increases. Similar results have been obtained in the literature (10). Intensive care nurses who have a high tendency to think critically can be said to be more constructive and satisfied in terms of finding solutions to problems, being open-minded, and having positive feelings about work, thus increasing job satisfaction.

CONCLUSION

In line with these results, this study has determined that increasing intensive care nurses' critical thinking dispositions also increases their job satisfaction levels. When looking at the results regarding critical thinking and job satisfaction with respect to intensive care nurses' sociodemographic and work life characteristics, young, single, high-school graduate intensive care nurses are seen to receive more support from their superiors and have higher job satisfaction; in addition, male nurses appear to be able to think more critically. Intensive care nurses' critical thinking dispositions and perceived importance in the workplace were also determined to be higher, with nurses who chose the profession willingly perceiving a more pleasant work environment. Intensive care nurses with high job satisfaction tend to feel safe at work and supported in their participation in scientific activities, to evaluate their work conditions as good, and to not think about quitting. In addition, intensive care nurses who have had critical thinking training, who are a member of a professional association, and who evaluate their work conditions as good also tend to have a high level of critical thinking disposition.

Ethics Committee Approval: This study was approved by the ethics committee of Non-invasive Clinic Ethical Committee of a university (date: 27.01.2021; no:5).

Informed Consent: Written consent was obtained from the participants.

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