

Araştırma Makalesi/ Research Article

HEMŞİRELİK ÖĞRENCİLERİNİN MESLEKİ DEĞERLERİ ALGILAMA DÜZEYİ İLE PROFESYONEL DAVRANIŞ UYGULAMA, PROBLEM ÇÖZME VE ELEŞTİREL DÜŞÜNME EĞİLİMLERİ ARASINDAKİ İLİŞKİ

THE RELATIONSHIP BETWEEN NURSING STUDENTS' LEVEL OF PERCEPTION OF PROFESSIONAL VALUES AND THEIR PROFESSIONAL BEHAVIOR PRACTICE, PROBLEM SOLVING AND CRITICAL THINKING TENDENCIES

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Özet

Giriş: Hemşirelik rol ve sorumluluklarının profesyonel olarak yerine getirilmesi, profesyonel hemşirelik eğitimi gerektirir. Profesyonel hemşirelik eğitimi, bireyin kültürel ve mesleki bilgisine, klinik ve kavramsal becerilerine ve değer sistemine odaklanmalıdır.

Amaç: Bu çalışmada, hemşirelik öğrencilerinin mesleki değerleri algılama düzeyi ile profesyonel davranış uygulama, problem çözme ve eleştirel düşünme eğilimleri arasındaki ilişkinin belirlenmesi amaçlanmıştır.

Yöntem: İlişki arayıcı nitelikte gerçekleştirilen çalışma, Türkiye'de bir kamu üniversitesinin Sağlık Yüksekokulu hemşirelik bölümü 2, 3 ve 4. sınıf öğrencileri (n= 265) ile gerçekleştirilmiştir. Veriler anket formu, Hemşirelik Öğrencileri Profesyonel Davranış Ölçeği, Hemşirelerin Mesleki Değerleri Ölçeği, Problem Çözme Envanteri ve California Eleştirel Düşünme Eğilimi Ölçeği ile toplanmış, değerlendirilmesinde tanımlayıcı istatistikler, Pearson Korelasyon ve Mann Whitney U, Kruskal-Wallis testi kullanılmıştır.

Bulgular: Hemşirelik mesleğini sevdiğini ve hemşirelik mesleğini isteyerek seçtiğini ifade eden öğrencilerin profesyonel davranışları uygulama, problem çözme ve eleştirel düşünme becerilerinin hemşirelik mesleğini sevmeyen ve kendi isteğiyle seçmeyen öğrencilere göre daha iyi olduğu bulunmuştur (p<0.05). Mesleğini sevdiğini ifade eden öğrencilerin mesleki değerlerine uyumlarının da güçlü olduğu bulunmuştur (p <0.05). Yapılan korelasyon analizine göre öğrencilerin eleştirel düşünme ve problem çözme becerileri arttıkça mesleki değerlere uyumlarının da arttığı, mesleki değerlere uyumlarının artmasıyla mesleki davranışları uygulama becerilerinin de arttığı tespit edilmiştir.

Sonuç: Öğrencilerin eleştirel düşünme ve problem çözme becerileri arttıkça, profesyonel değerlere uyumları ve profesyonel davranışları uygulama becerilerinin de arttığı belirlenmiştir.

Anahtar Kelimeler: Düşünme, hemşirelik öğrencileri, problem çözme, mesleki rol

Abstract

Introduction: Fulfilling nursing roles and responsibilities professionally requires professional nursing education. Professional nursing education should focus on cultural and professional knowledge, clinical and conceptual skills, and the value system of the individual.

Objective: The aim of this study is to determine the relationship between nursing students' level of perception of professional values and their tendencies in practicing professional behavior, problem-solving, and critical thinking.

Material and methods: This correlational study was conducted with 2nd, 3rd, 4th-year students (n=265) in the School of Health of a public university. The data were collected using questionnaire, Nursing Students Professional Behaviours Scale, Nurses Professional Values Scale, Problem Solving Inventory and California Critical Thinking Disposition Inventory, and assessed using descriptive statistics, Pearson's correlation analysis, Mann-Whitney U, and Kruskal-Wallis tests.

Results: It was found that Professional Behaviour, Problem Solving and California Critical Thinking Disposition Inventory mean scores were higher of students who expressed that they loved the nursing profession and chose this profession willingly (p<0.05), and the adaptation of professional values of students who expressed that they liked their profession was also found to be strong (p<0.05). It was determined that as the critical thinking and problem solving skills of the students increased, their adaptation to professional values also increased, and as the students' adaptation to professional values increased, their skills of applying professional behaviours also increased.

Conclusion: As the critical thinking tendencies and problem solving skills of the students increased, their adaptation to professional values and skills of applying professional behaviours also increased.

Key words: Thinking, nursing students, problem solving, professional role

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INTRODUCTION

The technological developments that took place in the twentieth century have led individuals to have prolonged life expectancy as well as chronic diseases, and thus an increase in demand for health care. The shortened length of hospital stay has increased the demand for home care services. The adoption of the therapeutic health care approach has brought forward the tendency of reducing the cost of health care services. In addition, the diversity of the world population in terms of aging, genetic events, culture, ethnic structure, religion, and lifestyle affects the roles and functions of today's nurses (1). Therefore, a nurse should think professionally, use their mind, possess problem-solving skills, be aware of their learning needs, be self-confident, ambitious, and trustworthy, be aware of their responsibilities, be able to think critically, guide individuals and society, be aware of social events, and be autonomous, free, and respectful to human rights and individuality (2). Professionalism is defined as "attitude and behaviour type including high level of expertise, skill, systematic knowledge and various competencies in a certain area" (3). The most basic way to accelerate in professionalism is to move away from routines and reveal creative powers by using critical thinking and scientific problem-solving skills (4).

Fulfilling nursing roles and responsibilities professionally requires professional nursing education (5). Professional nursing education should focus on cultural and professional knowledge, clinical and conceptual skills, and the value system of the individual (6). Professional values are a source of nursing practices. These values guide nurses in their interaction with patients, colleagues, other profession members, and the community they serve. When nursing students had to solve clinical problems, they use to their personal and professional values to solve problems. Undergraduate education in nursing

should allow nurses to comprehend professional values and display behaviours based on these values (7). Professional values also affect the problem-solving and critical thinking skills of nurses, who have a significant effect on the quality of care (8).

It has been determined in studies that interpersonal characteristics (9), working environment, and professional commitment (10) affect the professional values of nurses. The professional values of nurses affects their work performances, job satisfactions, care practices, care qualities, which have a direct effect on patient safety (7,9), and their collaborations with doctors¹¹. In this study, it was aimed to determine the correlation between professional values, critical thinking, and problem-solving skills, which are thought to affect the professional behaviours of nursing students.

MATERIAL and METHODS

Design and Sample

The study was designed as descriptive and correlational. The population of the study consisted of 2nd, 3rd and 4th-year nursing students (n=295) in the School of Health of a public university located in the Cappadocia region of Turkey. According to the school curriculum, 1st year students have not any clinical practice experience. In order for the professional behavior scale to be applied, students must have experince clinical practice. For this reason, the 1st grade students are not included in the research. Sampling was not performed; all students who agreed to participate were included in the study (n=265). After the study a post power analysis was calculated as $\alpha=0.01$ and $\beta=0.01$, according to problem solving inventory. Subsequently, mininum sample volume was calculated as 248.

The data were collected in the 2016-2017 academic year. The personal information form and scales (due to the high number of questions in the scales) were administered in a

total of two sessions in the classroom environment. It took approximately 30-45

minutes for the students to respond to the questions in the scales during each session.

Instruments

Personal Information Form

The personal information form was prepared by the researchers upon a literature review (8-11). In this form, there were 18 questions about the students' sociodemographic characteristics, status of liking the profession, choosing the school willingly, and the fields in which they wanted to work after graduation.

Nurses Professional Values Scale – Revised (NPVS-R)

This scale, which was developed by Weis and Schank (12) and whose Turkish validity and reliability study was conducted by Acaroğlu (13), is a five-point Likert-type scale composed of 26 items and measures the adaptation of nurses to professional values (Cronbach's alpha = 0.96). The scores obtained from the scale range from 26 to 130, and high scores indicate that adaptation to professional values is strong. In this study, the Cronbach's alpha value of the scale was calculated as 0.94.

Nursing Students Professional Behaviours Scale (NSPBS)

This scale, which was developed by Goz and Geckil (14) and whose validity and reliability study was conducted, allows investigators to obtain information about students' levels of fulfilling professional behaviours. It is a five-point Likert-type scale consisting of 27 items (Cronbach's alpha = 0.95). Scores obtained from the scale range from 27 to 135, and as the scale score increases, the students' levels of applying professional behaviours increase 14.

In this study, the Cronbach's alpha value of the scale was found as 0.92.

Problem-Solving Inventory

This inventory, which was developed by Heppner and Petersen (15) to evaluate the self-perceptions of people in problem-solving skills and whose Turkish validity and reliability study was conducted by Taylan (16), is a six-

point Likert-type scale composed of 35 items. In the scoring, negative items are reversed (items 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30, and 34), and some items are excluded from the scoring (items 9, 22, and 29). Scores obtained from the inventory range from 32 to 192; high total scores from the inventory indicate failure to find effective solutions to problems and weak problem-solving levels, and low scores signify effectiveness in problem-solving and strong problem-solving skills. In this study, the Cronbach's alpha value of the inventory was found as 0.75.

The California Critical Thinking Disposition Inventory (CCTDI)

This scale whose Turkish validity and reliability study was conducted by Kökdemir (17) is a six-point Likert-type scale composed of 51 items (Cronbach's alpha = 0.88). The negative items (5, 6, 9, 11, 15, 18, 19, 20, 21, 22, 23, 25, 27, 28, 33, 36, 41, 43, 45, 47, 49, and 50) are scored reversely. The general critical thinking dispositions of people who receive less than 240 points are evaluated as 'low', those with 240-300 points are evaluated as 'moderate', and the critical thinking dispositions of respondents with more than 300 points are evaluated as 'high'. In this study, the Cronbach's alpha value of the inventory was found as 0.81.

Data Analysis

The data were analysed using the IBM SPSS Statistics 20.0 (IBM SPSS Inc., Chicago, ILL, USA) software package, and $p < 0.05$ was accepted as statistical significance. The data were evaluated using descriptive statistics, Cronbach's alpha, Pearson's correlation analysis, the Kruskal-Wallis test, and the Mann-Whitney U test. The demographic characteristics of the participants were fully described using descriptive statistics. Students' NPVS-R, NSPBS, PSI and CCTDI scores were considered as a dependent variable, students' gender, academic year, status of liking the profession, choosing the school willingly, and the fields in which they wanted to work after graduation were treated as independent variables. Cronbach's alpha values were

calculated to estimate the internal consistency of the NPVS-R, NSPBS, PSI and CCTDI scores. Normal distribution of the data, were evaluated Shapiro-Wilk test and with Q-Q graphics. According to the distribution of the data, Mann Whitney U test was used for two independent group comparisons and Kruskal Wallis test was used for more than two independent group comparisons. Pearson's correlation test was used to determine the relationship between the students' NPVS-R, NSPS, PSI and CCTDI scores.

Ethical Considerations

This study, for which ethics committee's approval (Date: 09.02.2017, Number: 84902927), institution permissions, and student consents were obtained, was conducted in accordance with the principles of the Declaration of Helsinki. Before completing the Personal Information Form, the students were informed about the purpose of the study and participation in the study was based on voluntariness.

RESULTS

Of the students who participated in the study, 74.7% were female, 69.8% were in the age range of 21-24 years, and 35.5% were 2nd-year students. In addition, 74% of the students said that they liked the nursing profession, 60% said that the nursing profession was their choice, 65.3% expressed that they did not want to change their profession, and 36.6% stated that they wanted to work as a clinical nurse after graduation (Table 1).

When the total scores obtained from the scales according to the sex variable were examined, it was determined that female students had strong problem solving skills and better critical thinking skills than male students ($p<0.05$), and there was no statistically significant difference between the groups in terms of the scores according to the student year variable (Table 2).

It was found that the levels of application of professional behaviours of students who expressed that they willingly chose and liked the nursing profession, and

their problem-solving and critical thinking skills were better than those who disliked nursing and did not choose nursing willingly ($p<0.05$), and the adaptation to professional values by students who stated that they liked their profession were strong ($p<0.05$) (Table 2).

Table 1. Demographic Characteristics of Students

Demographic characteristics	n	%
Sex		
Female	198	74.7
Male	67	25.3
Age (Years)		
≥ 20	74	27.9
21-24	185	69.8
25 ≤	6	2.3
Academic Year		
2nd Year	94	35.5
3rd Year	89	33.6
4th Year	82	30.9
Liked nursing profession		
Yes	196	74.0
No	69	26.0
Voluntarily selected the nursing department		
Yes	159	60.0
No	106	40.0
Want to change their profession		
Yes	92	34.7
No	173	65.3
Nursing field preference after graduation		
Clinical nurse	97	36.6
Educational nurse	44	16.6
Nurse manager	65	24.5
Academic	59	22.3
Total	265	100.0

The problem-solving and critical thinking skills of students who wanted to work as an academic after graduation were found to be higher ($p<0.05$) (Table 2).

The correlation between the mean scores of students from Professional Values, Professional Behaviour, Problem-Solving, and Critical Thinking Disposition Scales was examined. A positive, weak correlation was determined between the scores of students from professional behaviours and professional values perception and critical thinking (ρ : 0.349;

p<0.001; rho: 0.311; p<0.001, respectively) and a negative, weakly significant correlation was determined between the students' scores from

profession behaviours and problem solving (rho: -0.310, p<0.001).

Table 2. Distribution of variables and scale scores of the students

Variables	Nursing Students Professional Behaviours Scale	Nurses Professional Values Scale – Revised	Problem-Solving Inventory	The California Critical Thinking Disposition Inventory
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Sex				
Female	122.69±9.3	105.81±15.43	87.94±13.97	217.74±23.6
Male	120.83±14.68	102.27±15.86	93.18±14.34	211.68±28.33
	U= 6329.0 p= 0.841	U= 5448.5 p= 0.063	U= 5000.0 p= 0.007	U= 4173.0 p= 0.049
Academic Year				
2nd Year	121.94±10.83	106.75±14.83	87.23±13.74	220.88±27.13
3rd Year	123.21±9.86	103.81±13.74	90.92±14.59	214.67±21.09
4th Year	123.21±9.86	103.81±18.19	89.7±14.23	211.86±26.26
	KW = 1.324 p= 0.516	KW = 1.577 p= 0.454	KW = 3.515 p= 0.172	KW = 3.271 p= 0.195
Voluntarily selected the nursing department				
Yes	123.77±9.44	106.14±15.66	87.34±14.58	219.62±24.98
No	119.71±12.46	103.07±15.36	92.1±13.20	210.77±24.03
	U= 6504.0 p= 0.005	U= 7200.0 p= 0.106	U= 6657.5 p= 0.007	U= 5003.0 p= 0.006
Liked nursing profession				
Yes	123.44±9.11	106.0±15.76	87.6±13.98	219.08±25.14
No	118.56±14.28	101.91±14.78	93.84±13.96	207.47±22.35
	U= 5456.5 p= 0.030	U= 5435.0 p= 0.027	U= 4912.5 p= 0.001	U= 3581.5 p= 0.001
Want to change their profession				
Yes	120.20±13.77	103.71±15.77	91.03±14.67	214.23±26.84
No	123.20±8.89	105.56±15.49	88.28±13.91	217.20±24.00
	U= 7261.5 p= 0.415	U= 7145.5 p= 0.310	U= 6894.0 p= 0.098	U= 5508 p= 0.381
Nursing field preference after graduation				
Clinical nurse	120.94±10.92	102.11±16.55	93.10±13.64	209.86±23.29
Educational nurse	120.50±13.94	105.25±17.90	87.32±15.12	222.59±28.78
Nurse manager	125.12±8.15	108.90±12.45	87.98±13.66	214.26±22.49
Academic	122.07±10.60	104.78±14.59	85.74±13.97	225.36±24.31
	KW = 6.643 p= 0.084	KW = 7.317 p= 0.062	KW = 11.513 p= 0.009	KW = 13.612 p= 0.003

U: Mann-Whitney U tests **KW**: Kruskal-Wallis tests

In other words, as the students' critical thinking and problem solving skills increased, their adaptations to professional values also increased, and as the students'

adaptations to professional values increased, their skills in applying professional behaviours also increased (Table 3).

Table 3. Correlation between the mean scores obtained in the Nurses Professional Values Scale, Nursing Students Professional Behaviours Scale, Problem Solving Inventory, and Critical Thinking Disposition Inventory

	Nursing Students Professional Behaviours Scale	Nurses Professional Values Scale	Critical Thinking Disposition Inventory	Problem-Solving Inventory
	r			
Nursing Students Professional Behaviours Scale	1.000			
Nurses Professional Values Scale	0.349**	1.000		
Critical Thinking Disposition Inventory	0.311**	0.434**	1.000	
Problem-Solving Inventory	-0.310**	-0.336**	-0.553**	1.000

** p<0.001

DISCUSSION

Today, nurses perform many functions as professionals such as conducting research, developing theories, participating in professional organizations and political activities, as well as providing healthcare. Critical thinking and problem-solving skills contribute to the development of professional values of nurses (4). In this study, there was a positive correlation between the students' critical thinking and problem-solving skills and their status of presenting professional behaviours, which was in accordance with the literature (Table 3). Nurses show their professional and personal values through professional behaviours (18,19). In this context, students with high levels of critical thinking and problem-solving skills gain professional values. Students who have gained professional values will demonstrate professional attitudes and behaviours.

In the present study, it was found that the problem-solving and critical thinking skills of female students were better than male students ($p<0.05$) (Table 2). However, there are studies in the literature showing that the sex variable does not affect problem-solving and critical thinking skills (20-22). It was found that the professional values of the female students among all students participating in the study were higher, but the difference between the groups was not statistically significant (Table 2). Similar to the

our study results, Bang et al. (23), determined that sex did not affect professional values, but that females had higher scores than males. The high number of female students participating in the study was thought to cause the professional values scores of the females to be higher. The fact that female students have better problem-solving and critical thinking skills compared to male students may be one of the contributing factors to this outcome. Additionally, the upbringing style, responsibility-taking, communication, and crisis management skills of female students could have also contributed to this result.

A professional nurse should be able to cope with nursing problems and identify complex patient care needs. It is necessary for them to develop critical thinking and problem-solving skills in order to identify patient care needs and provide systematic care (24,25). Raterink investigated the situations that affected the critical thinking skills of nurses and found that factors such as the fear of losing their job and stress inhibited critical thinking skills (26). Another study found that junior students were much more motivated to show their best performance and their critical thinking scores were higher, but when they became senior students their critical thinking scores became lower due to employment anxiety (27). In the present study, it was determined that the general critical thinking dispositions of the students were low (less than

240 points) (Table 2). Third and 4th-year nursing students in Turkey prepare for the Public Personnel Selection Examination in order to work in the public sector after graduation. They can work in public hospitals if they score sufficient points in the exam. Therefore, preparing for this exam and employment anxiety cause stress in students. In addition to the clinical stresses of 3rd and 4th-year students, preparing for the exam and employment anxiety are thought to have been effective in the decrease of their critical thinking scores.

In our study, there was no statistically significant difference between the professional values scale scores of the groups according to the student year variable (Table 2). Similar to our results, no statistically significant difference was found between student years in terms of professional values (28,29), critical thinking, and problem-solving skills in other studies (30,31).

The adaptation between personal and professional values affects the job satisfaction of healthcare professionals positively (32). It was determined that the levels of applying professional behaviours, problem-solving and critical thinking skills of students who expressed that they willingly chose the nursing profession and liked this profession were better ($p<0.05$), and their professional values were higher than those who disliked nursing and did not choose nursing willingly ($p>0.05$) (Table 2). Similar to the results of the present study, in previous studies it was found that the professional attitudes (33-36), critical thinking (28,31) and problem-solving skills of students who liked the nursing profession were better than those who disliked nursing (37), and the professional values (38-40) and professional attitudes(35) of students who willingly chose the profession were higher than those who did not. As a result, it may be assumed that nursing students who expressed that they willingly chose the nursing profession and liked this profession have higher levels of applying professional behaviours as they are

highly motivated by their positive perceptions toward their profession.

In our study, after graduation, the problem-solving and critical thinking skills of students who expressed that they wanted to be an academic and the professional values of students who expressed that they wanted to be a manager were better than others ($p>0.05$ for both) (Table 2). Özdelikara et al., reported that the mean scores of the professional attitude inventory of students who considered an academic career in the profession were high, but the difference between the groups was not statistically significant (38). It was also found in another study that the professional values of students who wanted to work as academics were higher than those who wanted to work in other nursing roles (41). Education has an important role in promoting professional values to students(42) by having them gain critical thinking and problem-solving skills (12).

In the present study, it was observed that students with high critical thinking and problem-solving skills wanted to continue their education after graduation, and students with higher professional values wanted to work as managers. It is thought that by organizing training programs, the critical thinking and problem-solving skills of students can be developed, and academics and executive nurses who have gained professional values can be trained.

Professional values affect nurses' critical thinking skills, job satisfaction, and quality of patient care (43). According to the correlation analysis conducted in the study, a statistically significant correlation was determined between the students' perception levels of professional values and their skills of applying professional behaviours, critical thinking dispositions, and problem-solving skills ($p<0.05$) (Table 3). Similar to our results, Kim and Choi found a moderate significant correlation between nursing students' problem-solving skills and skills of applying professional behaviours (37). Moyo et al. reviewed 50 studies conducted on personal and professional values of nurses,

doctors, and assistant health personnel and reported that the professional values of those providing healthcare service were related with their critical thinking, problem-solving skills, and professionalism (44). According to the results obtained in our the study, the critical thinking and problem-solving skills of individuals affected their professional values and the professional values affected the application level of professional behaviours.

CONCLUSION

As a result of the study, it was determined that the students' statuses of liking the profession, choosing the profession willingly, and the areas in which they wanted to work after graduation were effective on the levels of perception of professional values, problem-solving skills, professional behaviours, and critical thinking dispositions of the students. As the critical thinking and problem-solving skills of the students increased, their adaptation to professional values also increased, and as their adaptation to professional values increased, their application skills of professional behaviours also increased. In order for nursing students to think and act critically in healthcare, their professional behaviours should be developed. Therefore, activities aiming to develop professional values, critical thinking, and professional behaviours in the education of nursing students are important in terms of the development of the nursing profession.

Multi-centred and longitudinal studies with large samples should be conducted to determine the correlation between the perception of professional values, applying professional behaviours, problem solving, and critical thinking dispositions of nursing students.

Limitations

The fact that the sample was limited and the study was conducted only in a public university located in the Cappadocia region of Turkey reduces the generalizability of the results. Despite these limitations, it is thought

that the study would contribute to the literature in terms of determining the correlation between perceived level of professional values and applying professional behaviour, problem solving, and critical thinking dispositions in nursing students.

Ethical Considerations

This study, for which ethics committee's approval (Date: 09.02.2017, Number: 84902927), institution permissions, and student consents were obtained, was conducted in accordance with the principles of the Declaration of Helsinki. Before completing the Personal Information Form, the students were informed about the purpose of the study and participation in the study was based on voluntariness

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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