

THE EFFECT OF NURSES' OCCUPATIONAL HEALTH AND SAFETY CULTURES ON THEIR CAREGIVER ROLES

HEMŞİRELERİN İŞ SAĞLIĞI VE GÜVENLİĞİ KÜLTÜRÜNÜN BAKIM VERİCİ ROLLERİNE ETKİSİ

Yasin ÇETİN ¹, Nuray AYDIN ¹, Aslı TOK ÖZEN ²

¹ Adıyaman University, Faculty of Health Sciences, Nursing Department, Adıyaman, Türkiye

² Çankırı Karatekin University, Faculty of Health Sciences, Department of Nursing, Çankırı, Türkiye

ABSTRACT

Objective: The aim of this study is to explore the impact of nurses' occupational health and safety cultures on their roles as caregivers.

Methods: The data were collected with “Introductory Information Form”, “Occupational Health and Safety Culture Scale”, and “Nurses' Attitudes towards Caregiver Roles Scale”. Skewness and Kurtosis values were used to evaluate the suitability of the data for normal distribution. Data were evaluated with descriptive statistics, Pearson Correlation and Linear regression analysis.

Results: As a result of the analysis, it was determined that there was a high-level of positive correlation between Health and Safety and Nurses' Attitudes towards Caregiver Roles Scale ($r=0.755$, $p<0.01$), and also a high-level of positive correlation between the sub-dimensions of scales ($r>0.6$, $p<0.01$). And it was determined that 57% of the change in the total score obtained from the OHSCS was explained by the scores obtained from the care behaviors scale (Adjusted $R^2=0.569$).

Conclusion: The level of occupational health and safety culture of nurses affects the attitude towards their caregiver roles. It was concluded that the high occupational health and safety culture in nurses positively affects the attitude towards their caregiver roles.

Keywords: Nursing, Caregiver Role, Occupational Health and Safety Culture.

ÖZET

Amaç: Bu çalışmanın amacı, hemşirelerin iş sağlığı ve güvenliği kültürlerinin bakım veren rolleri üzerindeki etkisini araştırmaktır.

Gereç ve Yöntem: Veriler “Tanıtıcı Bilgi Formu”, “İş Sağlığı ve Güvenliği Kültürü Ölçeği” ve “Hemşirelerin Bakım Verici Rollerine İlişkin Tutumları Ölçeği” ile toplandı. Verilerin normal dağılıma uygunluğunu değerlendirmek için çarpıklık ve basıklık değerleri kullanıldı. Veriler tanımlayıcı istatistikler, Pearson Korelasyon ve Lineer regresyon analizi ile değerlendirildi.

Bulgular: Analiz sonucunda İş Sağlığı ve Güvenliği Kültürü ve Hemşirelerin Bakım Verici Rollerine İlişkin Tutumları Ölçeği arasında yüksek düzeyde pozitif korelasyon olduğu ($r=0.755$, $p<0.01$) ve alt boyutlar arasında da pozitif yönde yüksek korelasyon olduğu belirlendi ($r>0.6$, $p<0.01$). İSGÖ'den alınan toplam puandaki değişimin %57'sinin bakım davranışları ölçeğinden alınan puanlarla açıklandığı belirlendi (Düzeltilmiş $R^2=0.569$).

Sonuç: Hemşirelerin iş sağlığı ve güvenliği kültür düzeyi bakım verici rollerine yönelik tutumlarını etkilemektedir. Hemşirelerde iş sağlığı ve güvenliği kültürünün yüksek olmasının bakım veren rollerine yönelik tutumları olumlu yönde etkilediği sonucuna ulaşılmıştır.

Anahtar Kelimeler: Hemşirelik, Bakım Verici Rol, İş Sağlığı ve Güvenliği Kültürü.

Sorumlu Yazar / Corresponding Author: Yasin ÇETİN, Assist. Prof., Adıyaman University, Faculty of Health Sciences, Nursing Department, Adıyaman, Türkiye. E-mail: yasin8544@hotmail.com

Bu makaleye atıf yapmak için / Cite this article: Çetin, Y., Aydın, N. & Tok Özen, A. (2023). The Effect of Nurses' Occupational Health and Safety Cultures on Their Caregiver Roles. *Gevher Nesibe Journal of Medical & Health Sciences*, 8 (Özel Sayı), 694-700. <http://doi.org/10.5281/zenodo.8404377>

INTRODUCTION

Care is one of the oldest and most important roles of nursing, which is based on the principle of meeting the needs of the individual that he cannot do and needs to be met by evaluating with a holistic approach. With care practices, the problems of the individual are handled and resolved with the nursing process approach. It is very important that the needs of the individual are met by taking into account the safety principles, by providing "safe environments for both the patient and the employee". From the point of view of nursing practices, the safe environment should be evaluated in different dimensions, such as "the patient receiving care in a safe environment and the nurse's ability to fulfill all nursing roles, especially the care role in a safe working environment" (Liu et al., 2018; Vaismoradi et al., 2020; Dirik & Intepeler, 2017).

While the risks in the working environment affect the lives of individuals negatively in many aspects, reducing the risks positively affects the motivation and productivity to be obtained from the employee (Koinis et al., 2015; Tengilimoğlu, Zekioglu, & Topçu, 2019). Healthcare workers also face some risks from time to time in the working environment, just like individuals in other work areas. These risks cause work accidents and thus the deterioration of the safe working environment. The deterioration of the safe environment affects both healthcare professionals and patients negatively (Shaw et al., 2020; Meydanlioğlu, 2013). Nurses, who are responsible for the continuous monitoring and care of patients among health workers, may also face risks that threaten a safe working environment from time to time. These risks not only threaten nurses' own health and safety, but also threaten patient safety, damage the concept of a safe care environment, and affect the quality of care provided by nurses (Kim, Yoo & Seo, 2018; Kirwan, Matthews & Scott, 2013). Studies have reported that nursing care practices and quality of care are affected by the working environment and the perception of patient safety culture (Kim, Yoo & Seo, 2018; Hessels, Weaver, Siddiqui & Wurmser, 2019).

Occupational health and safety culture should be developed in occupational professionals working in this field in order to ensure a safe environment and therefore quality service and care provision in hospitals that meet a large part of the supply in the provision of health services. The importance given to occupational health and safety will improve the quality of nursing care, which will enable patient care practices to be provided in safer environments (Huang, Wu & Lee, 2018; Labraque, 2021). Therefore, this research was conducted to prevent occupational accidents that may occur in the execution of care services, which are the cornerstone of the nursing profession, to raise awareness and to develop recommendations for members of the profession.

MATERIALS AND METHODS

Study design

This study is descriptive and relationship-seeking type. The primary objective of this study is to explore the impact of nurses' occupational health and safety cultures on their roles as caregivers.

Population and Sample of the Study

The population of the research consisted of 560 nurses working in Adıyaman Education and Research Hospital. The number of samples was calculated with the G*Power 3.1.9.7 program. The sample size for the study was calculated as 270, taking effect size ($f^2 = 0.15$), 5% margin of error ($\alpha = 0.05$) and 80% power ($1-\beta = 0.80$) (Faul, Erdfelder, Lang, & Buchner 2007). During the data collection process, 356 nurses were reached.

Data Collection Tools

Introductory Information Form, Occupational Health and Safety Culture Scale, and Nurses' Attitudes towards Caregiver Roles Scale were used to collect data.

Introductory Information Form: This form prepared consists of questions covering the data about the age, gender, educational status, duty, professional experience years, and working time in the unit where the nurses work.

Occupational Health and Safety Culture Scale: The scale, validity and reliability of which was made by Olcay, consists of a total of 19 items, 3 sub-dimensions and is in the form of a 7-point likert. The sub-dimensions of the scale are General Safety Awareness (items 1-12), Ohs Education and Communication (items 13-16), Risk Perception (items 17-19) (Olcay, 2021). Cronbach Alpha values respectively (0.851; 0.833; 0.846). The Cronbach Alpha coefficient of the scale was reported as 0.890. In our study, the Cronbach's Alpha value was found to be 0.846.

Nurses' Attitudes Towards Caregiver Roles Scale: The scale, validity and reliability which was made by Koçak, Albayrak and Duman, consists of a total of 16 items, 3 sub-dimensions and is in the form of a 5-point Likert scale. Sub-dimensions of the scale consists; Nurse's Attitude towards Self-Care Needs and Educational Counseling Role subscale (2nd, 6th, 10th, 11th, 14th, 15th, 16th items), Nurse's Attitude to the Role of Protecting the Individual and Respecting Their Rights Sub-Scale (3rd, 5th, 12th, 13th items) Nurse's Attitudes to Roles in the Treatment Process Sub-Scale (1st, 4th, 7th, 8th, 9th items) (Koçak, Albayarak & Duman, 2014). Cronbach Alpha values respectively (0.891; 0.903; 0.896). The Cronbach Alpha coefficient of the scale was reported as 0.906. In our study, the Cronbach Alpha value was found to be 0.955.

Data Collection

The data of the study were collected through Google Forms between May-August 2022. The data were collected by snowball method by sending to the institutional communication tools of the nurses willing to work.

Statistical Analysis

SPSS for Windows (Statistical Package for Social science for Windows, Version 25.0) package program was used in the analysis of the data obtained as a result of the study. Skewness and Kurtosis values were used to evaluate the suitability of the data for normal distribution. Data were evaluated with descriptive statistics, Pearson Correlation and Linear regression analysis. $p < 0.05$ was accepted for statistical significance.

Ethical Approval

Ethical approval (No. 06.04.2022/271) was obtained from Adiyaman University Social and Human Sciences Ethics Committee. And also, the participants were informed electronically that their participation in the study was on a voluntary basis and that they could withdraw from the questionnaire at any time, and their consent was obtained.

Limitation of the Research

The research was conducted in a public hospital located in the southeastern region of Turkey, and the results cannot be generalized to all nurses in Turkey.

RESULTS

In this section, the findings of this study, in which the effects of nurses' occupational health and safety cultures on their caregiver roles are investigated. When the socio-demographic characteristics of the nurses participating in the research were examined; It is seen that the majority of them are female, over 31 years old, have a bachelor's degree, work as a service nurse, have a professional experience of 0-5 years, and the majority of them work less than 5 years in the last service (Table 1).

Table 1. Distribution of Nurses by Socio-Demographic Characteristics (n=356)

Characteristics	n	%	
Gender	Female	287	80.6
	Male	69	19.4
Age	20-25	69	19.4
	26-30	136	38.2
	31 and above	151	42.4
Education Level	High School	18	19.1
	Associate degree	63	17.7
	Undergraduate	218	61.2
	Graduate	7	2.0
Position	Service Nurse	202	56.7
	Executive Nurse	36	10.1
	Outpatient Clinic Nurse	84	23.6
	Education Nurse	34	9.6
Professional Experience Year	0-5 year	169	47.5
	6-10 year	108	30.3
	11-15 year	46	12.9
	16 and above	33	9.3
Working Year in the Last Worked Unit	0-5 year	237	66.6
	6-10 year	72	20.2
	11-15 year	31	8.7
	16 year and above	16	4.5

The comparison of the demographic characteristics of the nurses with the scale total score and sub-dimension mean score is given in Table 2. When the genders of the nurses and their scale mean scores were compared, a significant relationship was found between the OHSCS total and general occupational safety awareness sub-dimension, and the attitude sub-dimension regarding the role of NACRS protecting the individual and respecting their rights ($p<0.05$). When the age of the nurses and the mean score of the scale were compared, a significant difference was determined between the OHSCS Ohs education-communication and risk perception, and the sub-dimension of the attitude towards the NACRS total and self-care needs and the role of educational counseling ($p<0.05$). In addition, it was observed that there was a significant difference in the total scores and sub-dimensions of the scale according to the education level and professional experience of the nurses ($p<0.05$).

Table 3. shows the relationship between the nurses' total OHSCS score and the total and sub-dimensions of NACRS. As a result of the analysis, a positive high-level relationship ($r=0.755$, $p<0.01$) between OHSCS and NACRS, a positive high-level relationship between total OHSCS and the nurses' attitudes towards meeting their self-care needs and the role of educational counselor ($r=0.712$, $p<0.01$), A high positive correlation was found between the total OHSCS and the attitudes of nurses regarding the role of protecting the individual and respecting their rights ($r=0.702$, $p<0.01$), and a moderate positive correlation was found between the total OHSCS and the attitudes of nurses regarding their roles in the treatment process ($r=0.675$, $p<0.01$).

Table 3. The relationship between the nurses' total OHSCS score and the total and sub-dimensions of NACRS

		OHSCS	NACRS Total	Factor-1 ^a	Factor-2 ^b	Factor-3 ^c
OHSCS Total	r	1				
	p					
NACRS Total	r	.755**	1			
	p	0.000				
Factor-1	r	.712**	.951**	1		
	p	0.000	0.000			
Factor-2	r	.702**	.887**	.766**	1	
	p	0,000	0.000	0.000		
Factor-3	r	.675**	.919**	.799**	.757**	1
	p	0.000	0.000	0.000	0.000	

^aThe nurse's attitude towards the fulfillment of self-care needs and the role of educator-counseling; ^bThe nurse's attitude towards the role of protecting the individual and respecting their rights; ^cThe nurse's attitude towards their role in the treatment process. ** $p<0.01$, * $p<0.05$

The effect of the OHSCS scores on NACRS of nurses included in the study was evaluated with simple regression analysis. It is seen that the OHSCS total score has a statistically significant effect on the scores from the NACRS ($p<0.05$). It was determined that 57% of the change in the total score obtained from the OHSCS was explained by the scores obtained from the care behaviors scale (Adjusted $R^2=0.569$) (Table 4).

Table 4. Regression analysis results for the OHSCS for the NACRS

Dependant	Independent	β	t	p	F	Model	R	Adjusted
OHSCS	Constant	0.445	1.786	0.035*	468.084	0.000	0.755	0.569
	NACRS	1.229	21.635	0.000*				

* $p<0.05$

Table 2. Comparison of Nurses' Demographic Characteristics, Occupational Health and Safety Cultures and Levels of Caregiver Roles

Scale Total and Sub-Dimensions		OHSCS	Factor-1 ^a	Factor-2 ^b	Factor-3 ^c	NACRS	Factor-1 ^d	Factor-2 ^e	Factor-3 ^f
(min-max)		73-133	44-84	12-28	3-21	46-80	17-35	10-20	13-25
Mean±SD		110.21±16.3	72.95±10.62	24.17±3.77	13.08±6.52	69.72±8.47	30.35±4.07	17.58±2.26	21.78±2.81
Gender	Female	110.91±15	73.42±10.1	24.37±3.0	13.11±6.1	70.19±8.8	30.57±4.2	16.85±2.1	21.86±2.8
	Male	107.28±18	70.98±12.6	23.33±3.5	12.97±6.7	67.76±9.2	29.44±4.0	17.76±2.6	21.46±2.4
	t	-1.655	-1.717	-2.065	-0.168	-2.150	-2.068	-3.026	-1.052
	p	0.014	0.009	0.061	0.106	0.155	0.477	0.016	0.356
Age	20-25	109.24±18.9	72.63±12.30	24.11±4.14	12.49±6.70	69.89±10.00	30.36±4.58	17.66±2.51	21.86±3.30
	26-30	110.300±15.	74.41±9.87	24.81±3.46	11.07±6.63	71.02±7.85	31.10±3.77	17.73±2.15	22.18±2.56
	31 and above	110.57±16.2	71.78±10.36	23.61±3.79	15.17±5.70	68.48±8.12	29.68±4.00	17.41±2.23	21.38±2.74
	F	0.158	2.247	3.689	15.727	3.271	4.427	0.759	2.960
p		0.854	0.107	0.026	0.000	0.039	0.013	0.469	0.053
Education Status	High School	93.38±13.94	62.91±11.23	20.92±4.11	9.54±3.40	62.41±7.58	27.05±4.02	15.64±1.90	19.70±2.60
	Associate Degree	106.85±9.51	76.17±8.20	25.23±3.26	5.44±3.13	74.12±5.83	32.57±2.69	18.38±1.74	23.17±1.95
	Undergraduate	116.42±14.6	75.08±9.09	24.85±3.22	16.48±5.44	70.72±8.00	30.73±3.75	17.94±2.19	22.03±2.76
	Graduate	110.57±17.1	75.00±12.40	24.85±3.26	10.71±5.99	70.14±9.38	30.57±6.18	18.00±1.52	21.57±2.29
	F	49.745	31.752	25.191	103.545	29.189	26.291	25.581	21.162
p		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Position	Service Nurse	111.14±19.6	72.12±11.95	23.95±4.27	15.06±5.68	69.07±9.61	29.91±4.62	17.48±2.49	21.68±3.11
	Outpatient Clinic Nurse	110.35±7.71	76.88±6.61	25.53±2.26	7.94±6.21	72.85±6.24	32.07±2.87	18.16±1.74	22.6±2.25
	Executive Nurse	105.83±13.6	69.11±9.59	22.94±3.11	13.77±6.01	67.63±6.35	29.41±2.92	17.16±2.10	21.08±2.20
	Eduaction Nurse	108.94±13.0	72.23±8.67	23.38±3.35	13.32±5.80	68.05±5.75	29.76±2.91	17.20±1.87	21.78±2.81
	F	1.149	6.133	5.885	29.517	5.592	6.966	2.749	4.155
p		0.329	0.000	0.001	0.001	0.001	0.001	0.043	0.007
Professional experience (Year)	0-5 year	109.95±17.0	73.82±11.18	24.46±3.89	11.66±6.79	70.71±8.95	30.85±4.18	17.76±2.37	4.33±0.57
	6-10 year	110.46±15.3	72.37±9.61	24.21±3.36	13.87±6.29	69.59±7.36	30.45±3.47	17.40±2.06	4.45±0.53
	11-15 year	108.13±14.4	71.52±9.87	23.26±3.46	13.34±5.79	67.58±7.02	28.97±3.46	17.51±2.01	4.17±0.48
	16 and above	113.60±19.0	72.36±11.85	23.81±4.67	17.42±4.22	68.12±10.48	29.42±5.51	17.39±2.64	4.63±0.58
	F	10.298	3.686	3.750	21.300	4.173	4.277	3.566	3.270
p		0.001	0.012	0.011	0.001	0.006	0.006	0.014	0.021
Working Year in the Last Worked Unit	0-5 year	107.75±16	72.35±11.3	24.02±3.90	11.37±6.37	69.35±8.59	30.27±4.06	17.40±2.33	21.66±2.85
	6-10 year	113.84±15	73.50±9.78	24.26±3.66	16.08±5.70	71.05±8.12	30.81±4.05	17.98±2.05	22.25±2.65
	11-15 year	111.19±13	71.96±8.85	23.58±3.17	15.64±5.31	66.77±7.04	28.61±3.48	17.29±2.11	20.87±2.44
	16 and above	128.37±7.	81.18±5.44	27.12±1.74	20.06±1.73	75.01±8.11	32.81±4.24	19.01±1.76	23.18±2.91
	F	10.298	3.686	3.750	21.300	4.173	4.277	3.566	3.270
p		0.000	0.012	0.011	0.000	0.006	0.006	0.014	0.021

^aGeneral safety awareness; ^bisg education-communication; ^cRisk perception; ^dThe nurse's attitude towards meeting self-care needs and the role of educational counselling; ^eThe nurse's attitude towards the role of protecting the individual and respecting their rights; ^fNurses' attitudes towards their roles in the treatment process. - t test and One-Way ANOVA tests were used.

DISCUSSION

This study was conducted in a descriptive and cross-sectional order to evaluate the effect of nurses' occupational health and safety culture on their caregiver roles. In our study, the total score obtained by the nurses from the Occupational Health and Safety Culture was found to be 110.21 ± 16.38 . In the sub-dimensions of the scale, general occupational safety awareness was determined as 72.95 ± 10.62 , Ohs education-communication 24.17 ± 3.77 and risk perception as 13.08 ± 6.52 . In the findings, it is seen that the nurses' scores for job security and culture are high. Incesu and Atasoy's (2015) studies using the employee health and safety culture scale also showed that nurses received high scores (Incesu & Atasoy, 2015).

In the findings of our study, the NACRS scores in the sample group were 69.72 ± 8.47 , the attitude score of the nurse's self-care needs and the role of educational counseling was 30.35 ± 4.07 , the attitude score of the nurse's role of protecting the individual and being respectful to his rights was 17.58 ± 2.26 , and the role of the nurse in the treatment process attitude score regarding the subject was determined as 21.78 ± 2.81 . In other studies, it was determined that the NACRS scale scores were high. In the study of Uzelli Yılmaz et al. (2017), the NACRS score was found to be 65.95 ± 11.57 , the attitude score for meeting self-care needs and the role of counseling was 28.14 ± 5.34 , the attitude score for the role of protecting the individual and being respectful to their rights was 17.32 ± 2.87 , and the attitude for their role in the treatment process score was calculated as 20.18 ± 4.60 (Uzelli Yılmaz et al., 2017). In a study conducted with student nurses, the findings show similarity (Kahraman & Ceyhan, 2022). When the findings of this study and other studies are examined, the importance of the care role for the nursing profession is clearly seen. Again, it can be said that the point of view regarding the importance of patient care was formed in the first period of stepping into the profession.

In our study, it is seen that there is a high level of positive correlation between OHSCS and NACRS scores. Again, there is a medium-high level and positive relationship between OHSCS and the sub-dimensions of the NACRS. In other words, the high occupational health and safety culture positively affects the attitudes of nurses towards their caregiver roles. It has been reported in the literature that there is a positive relationship between the working environment and the job satisfaction of the workers (Raziq & Maulabakhsh, 2015). Therefore, a positive safe working environment increases the motivation, job satisfaction and quality of work. Therefore, safe patient care services are very important for nurses in terms of increasing patient, job motivation and satisfaction, from receiving quality service to early discharge.

CONCLUSION

According to the findings of this study, it was concluded that the high occupational health and safety culture in nurses positively affects the attitude towards their caregiver roles. Therefore, the spread of occupational health and safety culture among nurses shows that it will positively affect the quality of nursing care offered to patients and will also improve the understanding of quality and qualified care. According to the research results; In order to increase the quality of patient care, it may be recommended to create a positive and safe working environment for nurses, to develop the occupational health and safety culture of nurses and other healthcare professionals, and to prioritize occupational health and safety practices in the clinic.

Acknowledgement

We would like to thank all participants who participated and supported the research.

Conflict of Interest

No conflict of interest has been declared by the authors.

Author Contributions

Plan, design: YÇ; **Material, methods and data collection:** YÇ, NA, ATÖ.; **Data analysis and comments:** YÇ; **Writing and corrections:** YÇ, NA, ATÖ.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

- Dirik, H. F., & Intepeler, S. S. (2017). The work environment and empowerment as predictors of patient safety culture in Turkey. *Journal of Nursing Management*, 25(4), 256-265. <https://doi.org/10.1111/jonm.12458>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191. Retrieved from <https://link.springer.com/article/10.3758/BF03193146>
- Hessels, A., Weaver, S. H., Siddiqui, D., & Wurmser, T. A. (2019). Impact of patient safety culture on missed nursing care and adverse patient events. *J Nurse Care Qual*, 34(4), 287-294. doi: 10.1097/NCQ.0000000000000378
- Huang, C-H., Wu, H-H., & Lee, Y-C. (2018). The perceptions of patient safety culture: a difference between physicians and nurses in Taiwan. *Applied Nursing Reserach*, 40(2018), 39-44. <https://doi.org/10.1016/j.apnr.2017.12.010>
- İncesu, E., & Atasoy, A. (2015). Analysis of awarenesses of the nurses about the safety and health of staff by using the scale of culture of safety and health of staff. *Journal of Helath Academics*, 2(3), 119-126. doi: 10.5455/sad.2015131451388210
- Kahraman, H., & Ceyhan, Ö. (2022). From the Student's Perspective: The Caring Role of Nursing. *Ordu University Journal of Nursing Studies*, 5(1), 60-66. doi: 10.38108/ouhcd.897896
- Kim, K-J., Yoo, M. S., & Seo, E. J. (2018). Exploring the Influence of nursing work environment and patient safety culture on missed nursing care in Korea. *Asian Nursing Research*, 12(2), 121-126. <https://doi.org/10.1016/j.anr.2018.04.003>
- Kirwan, M., Matthews, A., & Scott, P. A. (2013). The impact of the work environment of nurses on patient safety outcomes: a multi-level modelling approach. *International Journal of Nursing Studies*, 50(2), 253-263. <https://doi.org/10.1016/j.ijnurstu.2012.08.020>
- Koinis, A., Giannou, V., Drantaki, V., Angelaina S., Stratou E., & Saridi M. (2015). The impact of healthcare workers job environment on their mental-emotional health. Coping strategies: the case of a local general hospital. *Health Psychology Research*, 3(1), 1984. doi: 10.4081/hpr.2015.1984
- Koçak, C., Albayrak, S. A., & Duman, N. B. (2014). Developing an Attitude Scale for Nurses in Caregiving Roles: Validity and Reliability Tests. *Journal of Education and Research in Nursing*, 11(3), 16-21.
- Labraque, L. J. (2021). Linking nurse practice environment, safety climate and job dimensions to missed nursing care. *International Nursing Review*, 69(3), 350-358. <https://doi.org/10.1111/inr.12736>
- Liu, X., Zheng, J., Liu, K., Baggs J. G., Liu J., Wu Y., & You L. (2018). Hospital nursing organizational factors, nursing care left undone, and nurse burnout as predictors of patient safety: a structural equation modeling analysis. *International Journal of Nursing Studies*, 86, 82-89. <https://doi.org/10.1016/j.ijnurstu.2018.05.005>
- Meydanlioğlu A. (2013). Health and safety of health care workers. *Balikesir Health Sciences Journal*, 2(3), 192-199. <https://dergipark.org.tr/tr/download/article-file/521236>
- Olçay, Z. F. (2021). Occupational Health and Safety Costs and Work Accidents in Construction Industry. *European Journal of Science and Technology*, 23, 678-685. doi: 10.31590/ejosat.892845
- Raziq, A., & Maulabakhsh R. (2015). Impact of working environment on job satisfaction. *Procedia Economics and Finance*, 23, 717-725. [https://doi.org/10.1016/S2212-5671\(15\)00524-9](https://doi.org/10.1016/S2212-5671(15)00524-9)
- Shaw, A., Flott, K., Fontana, G., Durkin, M., & Darzi, A. (2020). No patient safety without health worker safety. *The Lancet*, 396(10262), 1541-1543. [https://doi.org/10.1016/S0140-6736\(20\)31949-8](https://doi.org/10.1016/S0140-6736(20)31949-8)
- Tengilimoğlu, D., Zekioğlu, A., & Topçu, H. G. (2019). An Examination of Health Workers' Perceptions of a Healthy Work Environment. *Acıbadem University Health Sciences Journal*, 10(3), 455-463. <https://doi.org/10.31067/0.2018.85>
- Uzelli Yılmaz, D., Dilemek, H., Yılmaz, D., Akın Korhan, E., Çelik, E., & Rastgel, H. (2017). Attitudes and Related Factors for Nurses in Caregiving Roles. *International Refereed Journal of Nursing Researches*. 10, 83-100. doi: 10.17371/UHD2017.2.05
- Vaismoradi, M., Tella, S., Logan, P. A., Khakurel, J., & Vizcaya-Moreno, F. (2020). Nurses' adherence to patient safety principles: a systematic review. *International Journal of Environmental Research Public Health*, 17(6), 2028. <https://doi.org/10.3390/ijerph17062028>