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RESEARCH ARTICLE

INVESTIGATION OF NURSES' BEHAVIOR AND AWARENESS OF WORK ENVIRONMENT SAFETY: THE CASE OF A PUBLIC HOSPITAL IN KONYA PROVINCE *

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ABSTRACT

The aim of this study was to reveal the behaviors and awareness of nurses about workplace safety. The population of the study consisted of 557 active nurses working in a public hospital in Konya province. Online survey technique was used as a data collection tool. The questionnaire consists of 4 sections and 26 questions. The first part consists of questions about sociodemographic characteristics, the second part consists of the safety awareness questionnaire, the third part consists of the safety behavior scale and the fourth part consists of the reporting culture questionnaire. It was determined that the data obtained showed a normal distribution. Independent groups t, one-way variance, Pearson correlation analysis and simple linear regression analysis were applied on the data. Of the 394 nurses who participated in the study, 84.5% were female, 27.9% were in the 23-30 age range, 75.1% were undergraduate graduates, 43.7% were ward nurses, and 28.2% had 20 years or more experience. Again, 61.4% of the participants stated that they had never made a medical error in their unit, 51.0% stated that they had experienced a near-miss incident in their unit, and 53.6% stated that they had witnessed medical errors in their unit before. As a result of the study, it was seen that the safety awareness, safe behavior and reporting culture of the nurses participating in the study were high. It was concluded that an increase in safety awareness leads to an increase in safety behavior and reporting culture levels.

Keywords: *Work environment, nurses, safety awareness, safe behavior, reporting culture*

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ARAŞTIRMA MAKALESİ

HEMŞİRELERİN ÇALIŞMA ORTAMI GÜVENLİĞİ KONUSUNDAKİ DAVRANIŞ VE FARKINDALIĞININ ARAŞTIRILMASI: KONYA İLİNDE BİR KAMU HASTANESİ ÖRNEĞİ *

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ÖZ

Bu çalışmanın amacı, hemşirelerin çalışma ortamı güvenliği konusundaki davranış ve farkındalıklarını ortaya koymaktır. Araştırmada Konya ilindeki bir kamu hastanesinde görev yapan 557 aktif çalışan hemşire evren olarak kabul edilmiştir. Veri toplama aracı olarak online anket tekniği kullanılmıştır. Anket 4 bölümden ve 26 sorudan oluşmaktadır. Birinci bölüm sosyodemografik özelliklere ilişkin sorulardan, ikinci bölüm güvenlik farkındalık anketinden, üçüncü bölüm güvenli davranış anketinden ve dördüncü bölüm raporlama kültürü anketinden oluşmaktadır. Elde edilen verilerin normal dağılımdan sapmadığı belirlenmiştir. Veriler üzerinde bağımsız gruplarda t, tek yönlü varyans, Pearson korelasyon analizi ve basit doğrusal regresyon analizleri uygulanmıştır. Araştırmaya katılan 394 hemşirenin, %84,5'i kadın, %27,9'u 23-30 yaş aralığında, %75,1'i lisans mezunu, %43,7'si servis hemşiresi, %28,2'si 20 yıl ve üzeri tecrübeye sahip hemşirelerden oluşmaktadır. Yine katılımcıların, %61,4'ü çalıştığı birimde hiç tıbbi hata yapmadıklarını, %51,0'i çalıştıkları birimde ramak kala olay yaşadıklarını, %53,6'sı birimlerinde daha önce tıbbi hata yapıldığına şahit olduklarını belirtmiştir. Çalışma sonucunda araştırmaya katılan hemşirelerin güvenlik farkındalığının, güvenli davranışının ve raporlama kültürlerinin yüksek olduğu görülmüştür. Güvenlik farkındalığındaki artışın güvenlik davranışı ve raporlama kültürü düzeylerinde artışa neden olduğu sonucuna varılmıştır.

Anahtar Kelimeler: *Çalışma ortamı, hemşireler, güvenlik farkındalığı, güvenli davranış, raporlama kültürü*

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I. INTRODUCTION

As the most basic human right recognized internationally, health advocates that people should be as healthy as possible (Aba and Ateş, 2015). Although the definitions of health and the state of being healthy vary slightly from period to period and from country to country, the importance given has always been at a high level. Throughout history, many researchers have conducted research on the factors affecting health and made efforts to achieve a better level of health. As a result of these efforts, 4 main factors affecting health, namely environment, heredity, health care and behavior, have been emphasized (Blum, 1974). Among these, the environmental factor consists of biological, physical and social environment; the heredity factor consists of the factors that are embedded in the genetic code of the individual from birth and provide various health characteristics; the health service factor consists of the environment and health services provided to the patient by health institutions and various health institutions; and the behavioral factor consists of various habits and lifestyle behaviors that will affect the health of the individual (Tengilimoğlu et al., 2017).

When the 4 basic factors affecting health are analyzed, it is seen that the strongest factors affecting the health levels of individuals are social and environmental factors (Lloyd et al., 2004; Tarlov, 1999). This factor, which is often referred to as the social determinants of health, is affected by many characteristics of individuals such as income, health services, education, social environment, living conditions, working conditions, and work life. An individual's unemployment status and working conditions are important because they can directly or indirectly affect all other factors. Due to unemployment, many people are unable to fulfill even the minimum conditions necessary to be healthy and are forced to lead an unhealthy life because they cannot provide requirements such as proper nutrition and adequate treatment opportunities. Just like unemployment, another factor that affects individuals' lives in many ways is working conditions. Ergonomic and physical deficiencies or inadequacies in the working environment (light, sound, noise, etc.), the presence of emotional and psychological pressures such as mobbing and exclusion, economic reasons such as wage level, the presence of risks such as work accidents, chemical and radiation, etc. also significantly affect the individual's life outside of work (Aba and Ateş, 2015; Tekingündüz et al., 2016).

With the emergence of different production approaches in terms of enterprises over time, the working class has become more important, and various laws have emerged that protect workers' rights and ensure that the working environment becomes healthier (Kılkış, 2013). These laws in the field of occupational health and safety not only concern the employer, but also brought a series of rules for employees to be more attentive and careful about their working environment (Terzi et al., 2019). In terms of the health sector, it is seen that the institutions where health services are provided are positioned differently from all other sectors in terms of the services they provide. This is because the service provided by health institutions and health professionals is health care, which is a human right. This indispensability of the service requires much more careful and attentive service provision (Göde and Kuşçu, 2022). Health institutions are institutions that require attention not only in terms of the quality of the service provided but also in terms of the qualifications of the institution and employees (İnce, 2008). Employees face many risks of illness and accidents every day, and this situation is enough to keep the management, employees and even employees' families under pressure and stress as well as threatening patients. From this point of view, the safety of the working environment and the behaviors and attitudes of nurses, who are among the professional groups with the highest number of members in health institutions, have a great impact (Beşer, 2012). Based on this, the aim of the study is to reveal the behavior and awareness of nurses about work environment safety. ,

II. MATERIALS AND METHODS

2.1. Research Type

The research is quantitative survey type in terms of method, cross-sectional in terms of duration, individual-oriented in terms of unit of analysis and exploratory in terms of purpose.

2.2. Research Population and Sample

The research was conducted in a public hospital in Konya between 26 May 2022 and 26 June 2022. The population of the study consisted of 557 actively working nurses. In calculating the sample size, the table of minimum acceptable sample sizes for different populations created by Gürbüz and Şahin (2018) was used. According to the table, a minimum of 228 people should be reached at 95% (0.05) confidence interval. In our study, it was aimed to reach a minimum of 230 people, 400 people were reached, and 394 people were included in the analysis after missing and erroneous data were eliminated.

2.3. Ethical Consideration

First, permission to use the survey questions was requested by contacting the survey owner. After the approval from the author, ethics committee permission was obtained from Selçuk University Faculty of Health Sciences Non-Interventional Research Ethics Committee to conduct the research. (date: 25.05.2022; decision no: 2022/355).

2.4. Collection of Data

Research data were collected from nurses working in a public hospital in Konya province between 26 May 2022 and 26 June 2022 by applying online survey technique. Within the scope of the research, they were asked to fill out the online survey form, by reaching them through communication groups with nurses working in the hospital.

2.5. Data Collection Tools

In collecting data within the scope of the research, survey questions created by Dursun in his PhD thesis in 2011, using different sources (Lin et al., 2008; Neal et al., 2000; Håvold and Nesset, 2009) were used. The reliability values of the questionnaires were found 0.72, 0.76, 0.94, which is between the limits accepted at a good level (Karagöz, 2016).

Table 1. Descriptive Characteristics of the Scales

Scales	Mean±Sd.	Min	Max	Cronbach's Alpha
SA Questionnaire	4.49±0.53	2.20	5.00	0.81
RC Questionnaire	4.67±1.08	1	6.00	0.90
SB Questionnaire	4.37±0.59	2.17	5.00	0.89

General Cronbach's Alpha: 0,893

In this study the mean score of the participants on the Safety Awareness Questionnaire was found to be 4.49±0.53. The internal consistency coefficient of the Safety Awareness Questionnaire was calculated as α=0.81. The mean score of the participants on the Reporting Culture Questionnaire was found to be 4.67±1.08. The internal consistency coefficient of the Reporting Culture Questionnaire was calculated as α=0.90. The mean score of the participants on the Safety Behavior Questionnaire

was found to be 4.37±0.59. The internal consistency coefficient of the Safety Behavior Questionnaire was calculated as α=0.89 (Table 1).

Personal Information Form: A personal information form was developed in order to reveal the demographic characteristics of the nurses. This section consists of 8 questions in total. In the form, in addition to the questions of age, gender, position in the hospital, years of working in the profession, and education level; "Have you ever made a medical error in the unit where you work?", "Have you ever experienced a near-miss (almost a mistake) in the unit where you work?", "Have you ever witnessed a medical error in the unit where you work?" questions were also asked and it was aimed to reveal the past experiences of the participants.

Safety Awareness Questionnaire (SAQ): This questionnaire is among the sub-dimensions of the safety culture survey used by Dursun (2011) in his study. The questionnaire consists of 5 questions and assesses employees' safety awareness and competence to deal with safety issues. The questionnaire, which consists of statements such as "I am able to cope with safety problems at my workplace" and "I think safety is the most important thing when I work", evaluates employees' safety awareness and competence in the workplace in 5 categories between "completely disagree and completely agree". A score between 1 and 5 indicates a positive safety culture structure in terms of safety awareness and competence.

Safety Behavior Questionnaire (SBQ): This survey form which is evaluates the safety behaviors of employees in carrying out their jobs safely, is among the sub-dimensions of the Safety Performance Survey used by Dursun (2011) in his study. The questionnaire consists of two sub-dimensions: safety compliance (3 questions) and safety involvement (3 questions). The safety compliance dimension, which consists of statements such as "I use all necessary safety equipment while doing my job", assesses the safe conduct of work and adherence to safety procedures. The safety involvement dimension, which consists of 3 questions such as "I volunteer to perform tasks and activities that help improve workplace safety", assesses behaviors that are not directly related to employees' personal safety, but help to develop a supportive safety environment. In the overall questionnaire, respondents give their answers in 5 categories ranging from "strongly disagree to strongly agree". On a scale of 1 to 5, higher scores indicate that employees exhibit safer behavior.

Reporting Culture Questionnaire (RCQ): This questionnaire is among the sub-dimensions of the safety culture survey used by Dursun (2011) in his study. The five-question questionnaire measures the reporting of work accidents, near misses and unsafe acts. The questionnaire, which consists of statements such as "Reporting accidents/incidents is important in working safely in our organization" and "We always report accidents and incidents in our company", evaluates the reporting culture among employees in 6 categories ranging from "strongly disagree to strongly agree". Scores between 1 and 6 indicate a positive safety culture structure in terms of reporting culture.

2.6. Data Analysis

The data obtained with the online survey technique were first edited in Excel program and then transferred to SPSS 26.0 program and analyzed. The normality distribution of the data was tested with the Kolmogrov-Simirnov test and it was determined that the data were normally distributed ($p>0.05$). Since the data were normally distributed, t-test and one-way analysis of variance (ANOVA) were used as parametric tests in the second stage. Scheffe and LSD tests, which are post-hoc tests, were examined in order to reveal between which groups the difference occurred. The relationship between numerical variables was analyzed with Pearson Correlation coefficient. In the correlation analysis, the values were interpreted as very weak between p=0.00-0.20, weak between p=0.21-0.49, moderate between p=0.50-0.69, strong between p=0.70-0.84, very strong between p=0.85-0.99, and p=1.00 as a complete relationship. Standard deviation and mean were used for numerical variables and percentage and number were used for categorical variables. The significance level was accepted as $p<0.05$ (Kalaycı, 2017).

2.7. Assumptions and Limitations

Within the scope of the research, it is accepted that the measurement tools are reliable and that the participants gave objective, sincere and correct answers to the questions. The research was conducted in only one public hospital, so it is not possible to generalize it. Implementation in different types and different number of hospitals will allow more generalizable results to be obtained.

III. FINDINGS

In this section of the study, the main demographic findings, comparison analysis, correlation analysis and regression analysis results of the participants are given in tables respectively.

Demographic findings of the participants are presented in Table 2. According to Table 2, 84.5% of the participants were female, 27.9% were between the ages of 23-30, 75.1% were undergraduate graduates, 43.7% were ward nurses, and 28.2% were nurses with 20 years or more of experience. 61.4% of the participants stated that they had never made a medical error in the unit where they worked, 51.0% stated that they had experienced a near-miss in the unit where they worked, and 53.6% stated that they had witnessed medical errors in their units before.

Table 2. Basic Demographic Findings of the Participants

Characteristics (n=394)		**n**	**%**
Gender	Male	61	15.5
	Female	333	84.5
Age	23-30 years	110	27.9
	31-36 years	96	24.4
	37-42 years	94	23.9
	43-60 years	94	23.9
Education Level	High School	27	6.9
	Associate degree	43	10.9
	Bachelor's degree	296	75.1
	Postgraduate	28	7.1
Position	Executive Nurse	33	8.4
	Intensive care / emergency / operating room and other. crit. one. Nurse	120	30.5
	Service Nurse	172	43.7
	Outpatient Clinics and others Nurses Working in Diagnostic Units	69	17.5
Duration of employment	5 years and less	93	23.6
	6-12 years	94	23.9
	13-19 years	96	24.4
	20 years and above	111	28.2
Have you ever made a medical error in your unit?	No.	242	61.4
	Yes	121	30.7
	Not Aware	31	7.9
Have you ever experienced a near-miss in your unit?	No.	163	41.4
	Yes	202	51.3
	Not Aware	29	7.4
Have you ever witnessed a medical error in your unit?	No.	152	38.6
	Yes	211	53.6
	Not Aware	31	7.9

The distribution of the participants' mean scores on the safety awareness questionnaire according to the independent variables is given in Table 3. According to Table 3, it was determined that there was no statistically significant difference in the mean scores of the safety awareness questionnaire according to the independent variables of the participants' age, education level, position in the hospital and length of service ($p>0.05$). On the contrary, a statistically significant difference was found in the participants' mean scores of the safety awareness questionnaire according to gender, status of making a medical error, status of experiencing a near-miss event and witnessing a medical error in the unit where they work ($p<0.05$). It was observed that females had a significantly higher mean score on the SAS than males; those who stated that they had never made a medical error in the unit they worked in had a higher mean score than those who stated that they had made a medical error and those who were not aware of it. In addition, it was determined that those who had not experienced a near-miss event before had a significantly higher mean score of SAQ than those who had experienced a near-miss event and those who were not aware of it, and those who were not aware of whether a medical error had been made before in their units had a significantly lower mean score of SAQ than those who witnessed a medical error and those who were not aware of it.

Table 3. Comparison Analyses of Demographic Variables and Safety Awareness Questionnaire

Characteristics (n=394)		**n**	**Mean ± Sd.**	**t / F**	**p**	**Post-**
Gender	Male[1]	61	4.33±0.56	-2.59	**0.01**	**2>1**
	Female[2]	333	4.52±0.51			
Age	23-30 years	110	4.48±0.54	0.84	0.46	
	31-36 years	96	4.55±0.53			
	37-42 years	94	4.49±0.49			
	43-60 years	94	4.43±0.53			
Education Level	High School	27	4.48±0.63	0.89	0.44	
	Associate degree	43	4.60±0.43			
	License	296	4.47±0.53			
	Postgraduate	28	4.55±0.52			
Hospital Mission	Executive Nurse	33	4.63±0.50	1.42	0.23	
	Intensive care / emergency / operating room and other. crit. one. Nurse	120	4.50±0.54			
	Service Nurse	172	4.44±0.51			
	Outpatient Clinics et al. Nurses Working in Diagnostic Units	69	4.52±0.54			
Duration of employment	5 years and less	93	4.46±0.50	1.31	0.27	
	6-12 years	94	4.56±0.51			
	13-19 years	96	4.52±0.55			
	20 years and above	111	4.43±0.53			
Have you ever made a medical error in your unit?	No[1]	242	4.58±0.50	10.46	**0.001**	**Scheffe**
	Yes[2]	121	4.36±0.54			**1>2, 1>3**
	Not Aware[3]	31	4.27±0.55			
Have you ever experienced a near-miss in your unit?	No[1]	163	4.63±0.45	11.44	**0.001**	**Scheffe**
	Yes[2]	202	4.40±0.56			**1>2, 1>3**
	Not Aware[3]	29	4.33±0.53			
Have you ever witnessed a medical error in your unit?	No[1]	152	4.62±0.45	16.76	**0.001**	**Scheffe**
	Yes[2]	211	4.45±0.53			**1>2, 1>3, 2>3**
	Not Aware[3]	31	4.05±0.61			

The distribution of the participants' mean scores on the safety behavior questionnaire according to the independent variables is given in Table 4. According to Table 4, it was determined that there was no statistically significant difference in the mean scores of the participants' safety behavior questionnaire according to the independent variables of gender, educational status and position in the hospital ($p>0.05$). On the contrary, a statistically significant difference was found in the participants' mean scores of the safety behavior questionnaire according to age, length of service, status of making a medical error, status of experiencing a near-miss event and witnessing a medical error in the unit where they work ($p<0.05$). It was observed that nurses in the 31-36 age category had higher mean scores than nurses in other age groups. In addition, it was observed that participants with 6-12 years of service had a higher mean score than participants with 5 years of service or less, and participants who stated that they had never made a medical error in the unit they worked in had a significantly higher mean score than those who made medical errors and those who were not aware of it. In addition, it was determined that the participants who had not experienced a near-miss event before had a significantly higher mean SBQ score than those who had experienced a near-miss event, and the participants who had not witnessed a medical error in their units before had a significantly higher mean SBQ score than the participants who witnessed a medical error and stated that they were not aware of it.

Table 4. Comparison Analyses of Demographic Variables and Safety Behavior Questionnaire

Characteristics (n=394)		**n**	**Mean. ± Sd.**	**t / F**	**p**	**Post-Hoc**
Gender	Male	61	4.28±0.53	-1.29	0.19	
	Female	333	4.39±0.60			
Age	23-30 years[1]	110	4.28±0.68	3.28	**0.021**	**LSD**
	31-36 years[2]	96	4.53±0.51			**2>1, 2>3, 2>4**
	37-42 years[3]	94	4.34±0.58			
	43-60 years[4]	94	4.35±0.53			
Education Level	High School	27	4.38±0.59	1.14	0.33	
	Associate degree	43	4.51±0.56			
	License	296	4.34±0.59			
	Postgraduate	28	4.44±0.56			
Hospital Mission	Executive Nurse	33	4.52±0.56	1.09	0.35	
	Intensive care / emergency / operating room and other. crit. one. Nurse	120	4.37±0.64			
	Service Nurse	172	4.33±0.57			
	Outpatient Clinics et al. Nurses Working in Diagnostic Units	69	4.41±0.55			
Duration of employment	5 years and less[1]	93	4.23±0.65	4.39	**0.005**	**Scheffe**
	6-12 years[2]	94	4.50±0.57			**2>1**
	13-19 years[3]	96	4.45±0.52			
	20 year and above[4]	111	4.31±0.57			
Have you ever made a medical error in your unit?	No[1]	242	4.47±0.54	11.46	**0.001**	**Scheffe**
	Yes[2]	121	4.25±0.59			**1>2, 1>3**
	Not Aware[3]	31	4.04±0.77			
Have you ever experienced a near-miss in your unit?	No[1]	163	4.52±0.50	9.97	**0.001**	**Scheffe**
	Yes[2]	202	4.27±0.63			**1>2**
	Not Aware[3]	29	4.24±0.56			
Have you ever witnessed a medical error in your unit?	No[1]	152	4.52±0.53	10.26	**0.001**	**Scheffe**
	Yes[2]	211	4.31±0.60			**1>2, 1>3**
	Not Aware[3]	31	4.07±0.65			

The distribution of the participants' mean scores on the reporting culture questionnaire according to the independent variables is given in Table 5. According to Table 5, it was determined that there was no statistically significant difference in the mean scores of the reporting culture questionnaire according to the independent variables of age, education level and position in the hospital ($p>0.05$). On the contrary, a statistically significant difference was found in the mean scores of the participants' reporting culture questionnaire according to gender, length of service, status of making medical errors, status of experiencing a near-miss event and witnessing a medical error in the unit where they work ($p<0.05$). It was observed that females had a significantly higher mean score of RCQ compared to males, and participants with 6-12 years of service had a higher mean score than participants with other years of service. In addition, it was determined that the participants who stated that they had never made a medical error in the unit where they worked had a significantly higher mean score than those who had made a medical error; those who had not experienced a near-miss event before had a significantly higher mean score of RCQ than those who had experienced a near-miss event; and participants who had not witnessed a medical error in their units before had a significantly higher mean score of RCQ than the participants in the other group.

Table 5. Comparison Analyses of Demographic Variables and Reporting Culture Questionnaire

Characteristics (n=394)		**n**	**Mean ± Sd.**	**t / F**	**p**	**Post-Hoc**
Gender	Male[1]	61	4.36±1.03	-2.45	**0.01**	**2>1**
	Female[2]	333	4.73±1.08			
Age	23-30 years	110	4.63±1.07	1.32	0.26	
	31-36 years	96	4.85±1.14			
	37-42 years	94	4.67±1.00			
	43-60 years	94	4.55±1.08			
Education Level	High School	27	4.42±1.37	1.48	0.21	
	Associate degree	43	4.78±1.15			
	Bachelor's Degree	296	4.71±1.02			
	Postgraduate	28	4.37±1.20			
Hospital Mission	Executive Nurse	33	4.50±1.32	1.08	0.35	
	Intensive care / emergency / operating room and other. crit. one. Nurse	120	4.57±1.18			
	Service Nurse	172	4.76±0.88			
	Outpatient Clinics and others Nurses Working in Diagnostic Units	69	4.73±1.22			
Duration of employment	5 years and less[1]	93	4.63±1.02	2.66	**0.048**	**LSD**
	6-12 years[2]	94	4.94±1.10			**2>1, 2>3, 2>4**
	13-19 years[3]	96	4.61±1.12			
	20 year and above[4]	111	4.54±1.05			
Have you ever made a medical error in your unit?	No[1]	242	4.79±1.14	4.52	**0.011**	**Scheffe**
	Yes[2]	118	4.43±0.93			**1>2**
	Not Aware[3]	31	4.67±1.04			
Have you ever experienced a near-miss in your unit?	No[1]	163	4.91±1.03	6.66	**0.001**	**Scheffe**
	Yes[2]	202	4.50±1.13			**1>2**
	Not Aware[3]	29	4.60±0.80			
Have you ever witnessed a medical error in your unit?	No[1]	152	4.97±1.17	9.67	**0.001**	**Scheffe**
	Yes[2]	211	4.51±0.98			**1>2, 1>3**
	Not Aware[3]	31	4.41±0.95			

There is a weak (r=0.274) positively significant relationship between SAQ and RCQ (p<0.001). There is a strong (r=0.722) positively significant relationship between SAQ and SBQ (p<0.001). There is a weak (r=0.274) significant positive correlation between RCQ and SBQ (p<0.001).

Table 6. Pearson Correlation Test Findings between Questionnaires

		1	2	3
1- Safety Awareness Questionnaire	r	1	0.274**	0.722**
	p		**<0.001**	**<0.001**
2- Reporting Culture Questionnaire	r		1	0.370**
	p			**<0.001**
3- Safety Behavior Questionnaire	r			1
	p			
** *Correlation is significant at 0.01 level.*				

Table 7. Simple Linear Regression Test Findings on the Effect of Safety Awareness on Reporting Culture

Variable	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**p**	**F**	**Model (p)**
	B	**Std. Error**	**β**				
Fixed	2.165	0.449		4.827	0,000*	31.841	0.000*
RCS	0.560	0.099	0.274	5.643	0,000*		
R^2: 0.075 R: 0.274 *p<0,001 Regression Equation of the Model: Y=2.165+ (0.56X)							

When the model developed according to the regression analysis in Table 7 (F: 31.841; p<0.001) and the t statistic coefficient showing the significance of the regression coefficient values (t: 5.643; p<0.001) are examined, it is determined that the findings are statistically significant. While a statistically significant and positive and very weak relationship (R: 0.274; p<0.001) was observed between the variables, R^2: 0.075 was obtained. According to this result, only 7.5 per thousand of the change in reporting culture is explained by changes in the level of safety awareness. As a result, it is concluded that safety awareness has a statistically significant and positive but very small effect on reporting culture (p<0.001). In summary, the link between the change in security awareness and the change in reporting behavior is weak.

Table 8. Simple Linear Regression Test Findings on the Effect of Safety Awareness on Safety Behavior

Variable	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**p**	**F**	**Model (p)**
	B	**Std. Error**	**β**				
Fixed	0.748	0.117		4.234	0.000*	427.25	0.000*
SAS	0.807	0.039	0.722	20.67	0.000*		
R^2: 0.522 R: 0.722 *p<0.001 Regression Equation of the Model: Y=0.748+ (0.81X)							

When the model developed according to the regression analysis in Table 8 (F: 427.25; p<0.001) and the t statistic coefficient showing the significance of the regression coefficient values (t: 20.67; p<0.001) are examined, it is determined that the findings are statistically significant. While a statistically significant and positive relationship (R: 0.722; p<0.001) was observed between the variables R^2: 0.522 was obtained. According to this result, 52% of the change in safety behavior is explained by changes in the level of safety awareness. As a result, it is concluded that security awareness has a statistically significant and positive effect on safe behavior (p<0.001). According to these results, as safety awareness increases, the level of safe behavior increases.

IV. DISCUSSION

The behaviors and awareness of healthcare workers and nurses about work environment safety are very important. In this context, factors such as compliance with infection control, use of correct patient handling techniques, effective team collaboration, attention to physical safety measures, emotional and psychological safety, stress management, and continuous education contribute to nurses to provide a safe working environment. This study aimed to reveal the behaviors and awareness of nurses about workplace safety.

According to the safety awareness of the nurses, there was no significant difference between the mean scores of age, education level, duty and tenure in the hospital ($p>0.05$), while a significant difference was found between the mean scores of gender, status of making a medical error, status of experiencing a near-miss event and status of witnessing a medical error in the unit where they work ($p<0.05$). In the study on occupational health and safety awareness conducted by Yaşar and Aydemir (2023) on healthcare workers, no difference was found according to age and educational status, while it was stated that there was a difference between gender, position in the hospital and length of service. In the study on occupational health and safety awareness conducted by Kocaay and Küçük Biçer (2022) on healthcare workers, gender, age, educational status and length of service in the hospital did not have a significant effect on awareness, while educational status and occupational accidents had a significant effect on awareness. In the study on occupational health and safety awareness conducted by Elçin (2020) on healthcare workers, no difference was found according to age and educational status, while it was stated that there was a difference between gender, hospital assignment and length of service. Cho et al. (2022) conducted a study on patient safety awareness on nurses and found no difference according to gender, educational status and length of service in the hospital, while there was a difference between age groups. In the study conducted by Erkan et al. (2019) on the safety awareness of healthcare professionals, it was reported that there was no difference according to gender, age and length of service, while there was a difference between educational status and position in the hospital. In the study conducted by El-Sallamy et al. (2018) on the physical hazard safety awareness of healthcare workers, no difference was detected according to gender, while it was stated that there was a difference between the position in the hospital and the length of service. Gender, medical error history, near-miss experience and medical error witness status in the unit of work have a significant effect on safety awareness. While female nurses have higher safety awareness, those who have not made medical errors, have not experienced similar incidents and have not witnessed medical errors have higher safety awareness. On the other hand, various studies show that gender, education level, occupational accident history and exposure to similar incidents may affect nurses' safety awareness (Uzuntarla, 2018; Öztürk et al. 2012; Dursun and Keser, 2014).

According to the safe behavior of the participants, there was no significant difference between the mean scores of the participants' gender, educational status and position in the hospital ($p>0.05$), while a significant difference was found between the mean scores of age, tenure, status of making a medical error, status of experiencing a near-miss event and status of witnessing a medical error in the unit where they work ($p<0.05$). In the safety culture themed study conducted by Çevik (2018) on nurses, no difference was found according to gender, age, educational status, hospital assignment and length of service. In the study on occupational health and safety practice conducted by Bayer and Günal, (2018) on nurses, no difference was detected according to gender and age variables, while it was stated that there was a difference according to educational status. In the study conducted by Çelikkalp et al. (2016) on nurses on occupational safety practice, it was stated that there was no difference according to age and duration of service in the hospital, but there was a difference according to the place of duty in the hospital. In Haktanır's (2011) study on occupational health and safety practice conducted on nurses, no significant relationship was found between age and education levels, while a significant relationship was found between gender. In Tüzüner and Özaslan (2010) study on occupational health and safety practice conducted on healthcare workers, no significant effect on awareness was found according to gender, age groups, education levels, total work experience, and work experience in the organization. When the results of other studies are examined, it is seen that the factors affecting safe

behaviors vary. This suggests that the factors that guide safe behaviors may vary among nurses and that specific training and support programs should be designed by identifying these factors. In other words, instead of programs based only on generalized results, safe behavior training customized according to nurses' demographic characteristics, experiences and other factors may be more effective. Such customized approaches may contribute to the development of more effective strategies to improve safety in the health sector.

While there was no significant difference between the mean scores of age, educational level and position in the hospital according to the reporting culture of nurses ($p>0.05$), a significant difference was found between the mean scores of gender, employment duration, status of making a medical error, status of experiencing a near-miss event and status of witnessing a medical error in the unit where they work ($p<0.05$). In the study conducted by Solak and Topçu, (2022) on nurses, no difference was found according to gender, age, education level and position in the hospital. In the study conducted by Koç et al. (2020) on nurses, no difference was detected according to the position in the hospital, while there was a significant difference according to age, education level, position in the hospital and length of service. In the study conducted by Yöyler (2020) on healthcare professionals, no significant difference was found according to gender, age, education level and position in the hospital, while there was a significant difference according to the length of service in the hospital. In the study conducted by Zhao et al. (2022) on nurses, no significant difference was found according to gender, while there was a significant difference according to age, education level and length of service in the hospital. In the study conducted by Jang et al. (2021) on nurses, no difference was found according to educational status, hospital assignment and tenure. It shows that the factors affecting the reporting culture of nurses vary and that characteristics such as gender, employment status, medical error status, near-miss incident status and witness status are important in shaping the reporting culture. In light of this information, healthcare organizations and managers can develop strategies to support nurses' reporting culture by taking different factors into consideration. For example, they can take steps to strengthen the reporting culture by creating customized training programs or support mechanisms according to factors such as gender, tenure and medical error history. In this way, a culture that encourages open communication within the hospital can be created and the level of safety in healthcare can be increased.

As a result of the data obtained from nurses, a significant positive relationship was found between safety awareness, safe behavior and reporting culture. It is predicted that an increase in one of the levels of safety awareness, safe behavior and reporting culture in nurses will increase the others. It was also concluded that safety awareness has a significant positive effect on safe behavior and reporting culture. An increase in safety awareness is predicted to increase safe behavior and reporting behavior. In the study conducted by Erkal (2020) on healthcare workers, it was revealed that there is a significant positive relationship between safety awareness, safe behavior and patient safety. In addition, it was concluded that safety awareness and safe behavior positively affect the perception of occupational safety. In the study conducted by Uzuntarla (2018), a positive and statistically significant relationship was found between occupational safety awareness and safe behaviors among healthcare workers. As a result of this study, it was concluded that the level of safe behavior increased with the increase in occupational safety awareness. In a study conducted by Albayrak and Tuna (2021) on employees, a significant positive relationship was observed between safety awareness and reporting culture. The research conducted by Dursun and Keser (2014) shows that the level of safety awareness has a significant positive effect on employees' safe behaviors. In this study, it was concluded that the activities and regulations carried out to increase the safety awareness of employees cause employees to exhibit safer behaviors while performing their daily work. In the study conducted by Tuncay and Kılıç (2023) on nurses, it was concluded that the effect of patient safety culture on reducing medical errors is clear.

V. CONCLUSIONS

Various studies conducted on nurses show that there are positive relationships between safety awareness, safe behavior and reporting culture. These relationships show that safe behaviors and reporting culture are positively affected by the increase in safety awareness of nurses. Studies conducted especially among healthcare professionals reveal that increasing safety awareness is important for the safety of both employees and patients. An increase in safety awareness can contribute to health care workers' orientation towards more careful, attentive and safe practices. At the same time, increased safety awareness may also help to create a positive reporting culture. This allows for more open and accurate reporting and learning from medical errors.

The findings obtained from the research showed that there may be a relationship between the age, gender, working hours of the employees, previous medical errors and near-miss incidents, and the security culture, security awareness and reporting culture levels of the individuals. In addition, it has been observed that security awareness has a weak effect on reporting culture; However, it was concluded that security awareness has a significant and positive effect on safe behavior.

These results show that improving employees' security awareness and safe behavior levels is important, primarily for employee safety and indirectly for patient safety. As a result, activities to increase the safety awareness of employees in the healthcare sector can have positive results in terms of the safety of both employees and patients. Such studies play an important role in improving the quality of healthcare services and creating a safe environment.

Ethical Approval: In order to conduct the study, ethics committee permission was obtained from Selçuk University, Faculty of Health Sciences, Non-Interventional Clinical Research Ethics Committee with the decision dated 25.05.2022 and numbered 2022/355.

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