

RESEARCH ARTICLE

Determination of attitudes of nurses to prevent pressure ulcers

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Abstract

Aim: This study was conducted as a descriptive study in order to determine the attitudes of nurses to prevent pressure ulcers.

Methods: The study was conducted with 148 nurses working in Intensive Care Units and internal clinics of a hospital in Nigde province. The data of the study was collected by the researcher using face-to-face interview technique by using Attitude Towards Pressure Ulcer Prevention Instrument (ATPUI). Descriptive statistics, chi-square, Mann-Whitney U, Kruskal Wallis test and correlation analysis were used to evaluate the data. Significance was evaluated at $p < 0.05$ levels.

Results: Of the nurses, 80.4% were women, 64.9% were undergraduate graduates, 22.3% were serving at 3rd Step ICU; the mean age of the nurses was 33.7 ± 7.0 and the mean total ATPUI score was 41.46 ± 4.28 . It was found that nurses who encountered pressure ulcers frequently, found their nursing practices satisfactory and could reflect the education they received other than nursing education to care, had higher ATPUI scores ($p < 0.05$).

Conclusion: It was determined that the effect subscale mean scores of the nurses decreased with increasing age, and the proficiency subscale mean scores of the nurses increased with increasing clinical experience. It is recommended that each institution establish pressure ulcer care protocols in line with standards and innovations, develop clinical practice guidelines, and organize in-service training programs where interventions are planned and regularly implemented for pressure ulcer prevention.

Keywords: pressure ulcer, nurse, attitude, attitude scale, prevention

Abbreviations: ATPUI: Attitude Towards Pressure Ulcer Prevention Instrument, NPUAP: The National Pressure Injury Advisory Panel, ASFPPU: Attitude Scale for Preventing Pressure Ulcers, SPSS: Statistical Product and Service Solutions, ICU: Intensive Care Unit, PU: Pressure Ulcer

Introduction

Although pressure ulcers are a preventable and treatable condition, it is a health problem that negatively affects the quality of life of the individual, prolongs hospital stay, causes pain, negatively affects rehabilitation and daily life activities, and causes mortality and subsequent mortality [1-5]. The rate of incidence in intensive care units where people who cannot perform life activities due to loss of consciousness or who need long-term care is very high [2-5].

Pressure ulcers are considered as one of the quality indicators in the health care system, their prevention and treatment require a multidisciplinary team approach with a holistic care approach. For this reason, national organizations and wound care teams have been established in many countries [6]. In addition, its treatment is a very expensive process. According to the data of NPUAP (The National Pressure Injury Advisory Panel) 2016, the pressure ulcer case in America varies between 1.3-3 million people and its annual cost varies between 2.2-3.6 billion dollars [7].

It is important for nurses taking an active role in health care services to attempt to prevent the development of pressure ulcers [2,8]. These interventions will prevent the pressure ulcer from reaching further stages, thereby improving the patient's quality of life; it is also predicted that it will reduce the burden of nurse care and the cost of hospitalization [1,8-12]. Determining the risk factors for pressure ulcer formation is the most important attempt to reduce the prevalence and incidence of pressure ulcers [13]. For this reason, using risk assessment tools is a reliable, cost-effective and most objective method of preventing pressure ulcers [14-16]. Apart from risk assessment tools, nurses' attitudes are also effective in preventing pressure ulcer formation. Nurses' experience and knowledge make a difference in their attitudes towards preventing pressure ulcers [17,18]. In the literature review conducted in our country, it was found that there are very few studies investigating nurses' attitudes towards

preventing pressure ulcers. According to the results of the study, it was found that the majority of nurses had a positive attitude, but stated that non-risk patients do not need to make regular risk definitions [19-22]. Nurses' knowledge and education levels play a key role not only in raising awareness of pressure ulcers, but also for conscious decision making and clinical practice. While education plays an important role in preventing pressure ulcers; other components are the desire to put new knowledge into practice, the availability of appropriate equipment, management support, multidisciplinary cooperation and the development of attitudes towards prevention. Therefore, the importance of attitude as well as education in preventing and treating pressure ulcers cannot be ignored [22-25].

Research Questions

1. Nurses' attitudes towards preventing pressure wounds are positive.
2. Nurses state that they regularly carry out practices to prevent pressure ulcers.
3. Nurses state that they regularly carry out practices to treat pressure ulcers.

The aim of this research is to determine the attitudes of nurses working in internal clinics and intensive care units to prevent pressure ulcers.

Material and method

Study design and setting

The research was carried out in the Intensive Care Units and internal clinics of Nigde Training and Research Hospital in the city center of Nigde. The data were collected between June 26 and September 31, 2017.

Sample

The universe of the research is 169 nurses working in the Intensive Care Units of Nigde Training and Research Hospital and

internal clinics. Sample selection was not made, nurses who agreed to participate in the study were included in the study. Twenty-one people who were on leave and sickcall on the dates when the data were collected and those did not agree to participate in the study were excluded, and a total of 148 nurses were included in the study. The rate of reaching the universe is 87.6%.

To the scope of the research; Nurses who work in intensive care units and internal clinics, who can speak and understand Turkish, have no hearing problems and volunteer to participate in the research were included. Nurses who were on leave and sick-call during the study period and did not agree to participate in the study were not included in the study.

Data collection

Nurses working in each clinic were asked to participate in the study voluntarily after explaining the purpose of the study. Data collection forms were delivered to the volunteers, they were asked to read and fill in, and after 30 minutes, the forms were collected from the clinics. Clinics were visited again and the procedure was repeated for the nurses who could not be reached. The response time of a form took an average of 10-15 minutes.

Measuring instrument

The research data were collected by using "Individual Information Form" prepared by the researcher and "Attitude Scale for Preventing Pressure Ulcers (ASFPPU)".

The student information form: The form created by the researcher by scanning the literature [19-21,26]; consists of 20 questions including applications related to pressure ulcers; nurses gender, age, marital status, educational background, working year, working hours in the clinic.

Attitude Scale for Preventing Pressure Ulcers (ASFPPU): This scale is a Likert type scale developed by Beeckman et al. In 2010. Scale consists of, attitude towards individual competence to prevent pressure ulcers (3 items), attitude to prevent pressure ulcers (3 items), attitude towards the effect of pressure ulcers (3 items), attitude towards personal responsibility to prevent pressure ulcers (2 items), attitude towards effectiveness of prevention pressure ulcers (2 items), 5 sub-dimensions and 13 items in total. Six of the 13 items in the scale are positive and 7 are negative. Items to be used reversely are 3, 5, 7, 8, 9, 10, 13. Negative expressions were reversed to ensure consistency in the interpretation of the scale. In the evaluation of the scale, the scale items were rated with a Likert-type scoring ranging from 1 to 4. While in positive statements, "absolutely disagree" evaluated as 1, "absolutely agree" as 4 points; the opposite of negative was calculated as "absolutely disagree" 4, "absolutely agree" 1 point. Reliability of internal consistency Cronbach's Alpha value; 0.79, Cronbach's Alpha value of the sub-dimensions were found between 0.70-0.90. While the lowest score to be acquired from the scale is 13, the highest score is 52. The attitude is expected to be positive as the total score average of ASFPPU rises [17,18,21].

The Turkish validity and reliability study of the scale was conducted in 2013 by Üstün and Çınar- Yücel. As a result of the "item analysis" conducted to test the internal consistency, the item total correlation coefficient of 13 items was determined between 0.37 and 0.61. No item was removed from the scale since no item total correlation coefficient was below 0.20. The Cronbach's Alpha coefficient of the whole scale was 0.714, factor analysis Kaiser-MeyerOlkin (KMO) coefficient was found 0.63 [21]. Cronbach's Alpha value coefficient of ASFPPU in this study was determined as 0.743.

Data analysis

The collected data were evaluated by the researcher by obtaining statistical consultancy and using the appropriate statistical methods with SPSS (Statistical Product and Service Solutions) 24.0 package program in computer environment. While evaluating the data,

Cronbach α coefficient was used in the internal consistency of the scale and its sub-dimensions, Pearson correlation in the evaluation of the total score and the relationships between the parameters, descriptive statistical methods (Mean, Standard Deviation, Median, Frequency, Ratio, Minimum, Maximum) were used in the sociodemographic data. ShapiroWilk normality test has been done; in nonparametric data, chi-square test, Mann-Whitney U test in two independent group comparisons, and Kruskal Wallis test in three or more group comparisons. Mann Whitney U test was used to determine which group caused the difference in significant groups. Significance was evaluated at the levels of $p < 0.01$ and $p < 0.05$ [27- 29].

Ethical considerations

Ethics committee permission was obtained from Nigde Ömer Halisdemir University Clinical Research Ethics Committee (Date: February 22, 2017, Number: 3) before starting the research. In addition, the permission of the institution (63524359-663,08) was obtained from the General Secretariat of the Public Hospitals Association of Niğde Province where the research will be conducted, and the research was made by obtaining written and verbal consent from the nurses.

Results

Characteristics of the nursing

80.4% of the nurses participating in the study are women, 76.4% are married, 64.9% are bachelor's degree graduates, and 22.3% are working in the 3rd-grade ICU, and 50.7% are working as clinical nurses. The average age of the researchers is 33.7 ± 7.0 , the average of working years in the profession is 11.5 ± 6.9 ; mean working years in the clinic were found to be 3.5 ± 3.02 .

Average Point of Total Points and Sub-dimensions of Attitude Scale for Preventing Pressure Ulcers of Nurses

Table 1 shows the Nurses' Attitude Scale for Preventing Pressure Ulcers (ASFPPU) score averages. When the table is examined, it was determined that the minimum 29.00; maximum mean score of 51.00 and the total average score was 41.46 ± 4.28 . When the sub-dimensions of ASFPPU are analyzed, the average of attitude point towards the effect of pressure ulcer is highest (10.35 ± 1.61); the mean score of attitude towards individual responsibility in preventing pressure ulcer has a lower mean score (6.11 ± 1.01) than others.

Distribution of nurses' socio-demographic characteristics and attitude scale for preventing pressure ulcers and sub-dimensions

In tables 2 and 3 the distribution of the mean scores of the nurses' socio-demographic characteristics, and their attitude scale and sub-dimensions towards preventing pressure ulcers were presented. When the scale sub-dimension mean scores by gender are analyzed; It was determined that the scores of women from the sub-dimension were high (10.47 ± 1.60) ($p < 0.05$), but the difference between the groups was not statistically significant ($p > 0.05$). No significant difference was found between the marital status and attitude scale mean of any sub-dimension points ($p > 0.05$). When the scale sub-dimension point averages of the educational status are examined; it was determined that the scores of master's degree graduate nurses from the sufficiency sub-dimension were high (10.33 ± 1.51) ($p < 0.05$), but the difference

Table 1. Average Point of Total Points and Sub-dimensions of Attitude Scale for Preventing Pressure Ulcers of Nurses

Sub-Dimensions	$\bar{x} \pm S$	Minimum	Maximum
Competence	8.93 ± 1.44	5.00	12.00
Priority	9.85 ± 1.52	5.00	12.00
Influence	10.35 ± 1.61	3.00	12.00
Responsibility	6.11 ± 1.01	4.00	8.00
Effect of prevention	6.22 ± 1.05	4.00	8.00
Total Scores	41.46 ± 4.28	29.00	51.00

Table 2a: Distribution of Nurses' Socio-Demographic Characteristics and Attitude Scale for Preventing Pressure Ulcers and Sub-dimensions

Socio-demographic characteristics	n	Competence		Priority		Influence		Responsibility		Effect of Prevention		Total	
		$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median
GENDER													
Female	119	8.82±1.44	9.00	9.89±1.57	10.00	10.47±1.60	11.00	6.11±1.01	6.00	6.27±1.07	6.00	41.56±4.36	42.00
Male	29	9.34±1.40	9.00	9.69±1.31	10.00	9.86±1.57	9.00	6.10±1.05	6.00	6.03±0.95	6.00	41.03±3.98	42.00
χ^2 / p		2.70 / 0.100 $p > 0.05$		0.73 / 0.393 $p > 0.05$		4.31 / 0.038 $p < 0.05$		0.02 / 0.089 $p > 0.05$		1.27 / 0.260 $p > 0.05$		0.36 / 0.546 $p > 0.05$	
Marital status													
Married	113	8.82±1.42	9.00	9.81±1.57	10.00	10.23±1.70	10.00	6.11±1.03	6.00	6.26±1.10	6.00	41.22±4.44	42.00
Single	35	9.26±1.50	9.00	10.00±1.35	10.00	10.74±1.22	11.00	6.11±0.97	6.00	6.11±0.87	6.00	42.23±3.68	42.00
χ^2 / p		2.86 / 0.091 $p > 0.05$		0.20/0.652 $p > 0.05$		2.81 / 0.094 $p > 0.05$		0.01/0.910 $p > 0.05$		0.51/0.477 $p > 0.05$		1.23 / 0.268 $p > 0.05$	
EDUCATIONAL BACKGROUND													
High School	18	8.50±1.25	9.00	10.00±1.85	10.00	9.78±1.70	9.50	5.72±1.23	5.00	6.22±1.31	6.00	40.22±5.37	39.50
Associate Degree	28	9.29±1.36	9.00	11.10±1.26	10.00	10.39±1.40	10.00	6.14±0.93	6.00	6.04±0.96	6.00	41.96±3.58	42.00
Bachelor's Degree	96	8.81±1.45	9.00	9.78±1.54	10.00	10.47±1.65	11.00	6.20±0.97	6.00	6.27±1.05	6.00	41.53±4.23	42.00
Master's Degree	6	10.33±1.51	10.00	9.33±1.51	9.00	10.00±1.55	9.00	5.67±1.21	5.50	6.33±0.52	6.00	41.67±4.84	40.50
χ^2 / p		8.26/0.041 $p < 0.05$		1.91 / 0.591 $p > 0.05$		3.40 / 0.334 $p > 0.05$		4.51/0.211 $p > 0.05$		1.58/0.663 $p > 0.05$		1.74 / 0.688 $p > 0.05$	

Table 2b: Distribution of Nurses' Socio-Demographic Characteristics and Attitude Scale for Preventing Pressure Ulcers and Sub-dimensions- Continued

Socio-demographic Characteristics	n	Sub-dimensions of Attitude Scale for Preventing Pressure Ulcers											
		Competence		Priority		Influence		Responsibility		Effect of Prevention		Total	
		$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median	$\bar{x}\pm ss$	Median
STATUS IN THE CLINIC													
Responsible Nurse ^b	14	8.36±1.45	8.50	9.43±1.65	9.00	10.42±1.45	10.00	6.14±0.77	6.00	6.43±0.94	6.00	40.79±4.37	41.50
ICU Nurse ^a	59	9.71±1.30	9.00	10.00±1.39	10.00	10.62±1.37 in	11.00	6.34±1.08	6.00	6.17±1.00	6.00	42.85±3.89	43.00
Clinic Nurse ^b	75	8.41±1.27	9.00	9.81±1.60	10.00	10.12±1.79	10.00	5.92±0.97	6.00	6.23±1.11	6.00	40.50±4.31	41.00
χ^2 / p		30.67 / 0000 $p < 0.05$		1.52/0.467 $p > 0.05$		2.39/0.303 $p > 0.05$		6.67 / 0.036 $p < 0.05$		0.86 / 0.651 $p > 0.05$		9.86 / 0.007 $p < 0.05$	

* a, b, c superscripts show differences between groups. Groups with the same letters are similar. χ^2 : Chi square p: Level of significance

between the groups was not statistically significant ($p > 0.05$). When the mean scores of all sub-dimensions were examined in terms of the status variable in the clinic; the difference between the group means was found significant ($p < 0.05$). In further analysis to determine which group the difference originated from, the competency subdimension of ICU nurses (9.71 ± 1.30) ($p < 0.05$) responsibility sub-dimension (6.34 ± 1.08) ($p < 0.05$) and the total score averages were higher than others (42.85 ± 3.89) ($p < 0.05$).

A negative relationship was found between age variable and effect sub-dimension ($p < 0.05$). It is observed that the effect sub-dimension mean scores of the nurses decreased with increasing age. A positive relationship was found between the working year variable in the clinic and the sufficiency sub-dimension. ($P < 0.05$). It was found that as the experience of working in the clinic increased, the nurses' sub-dimension mean scores increased.

Attitude

The distribution of nurses regarding the care and practices of the patients before and after the pressure ulcer has been presented is given in table 4. Before the pressure ulcer has formed; 92.6% of the nurses stated that they performed maintenance and practices including positioning, 79.1% risk diagnosis, 73.0% of them preventing rubbing and peeling. After the pressure ulcer has formed; 93.9% of the nurses stated that they performed care and practices including positioning, 74.3% skin care, 70.9% of rubbing and preventing peeling.

When the scale's total score average is analyzed, the situations of risk diagnostics, skin care, heel protection, moisture management, increasing mobilization, preventing rubbing and peeling, providing nutritional control and skin examination applications; The difference between groups before and after the development of pressure ulcer was found to be significant ($p < 0.05$). When the scale total score average and the changes in the position of the composition, the

use of cream and the support surface applications are examined; The difference between groups before and after the development of pressure ulcer was not statistically significant ($p > 0.05$).

In table 5 comparison of the total mean score of the nurses' ASFPPU with nursing practices to prevent pressure ulcers is presented. When the competence level of the applications and the scale total score averages are examined; the difference between the group means was found to be significant ($p < 0.05$). In the advanced analysis, the mean score of the nurses who found the applications of the difference between the groups adequate was higher than the others (42.30 ± 3.91) ($p < 0.05$). When the average of the scale total score by studying outside the school education is examined; The difference between the group means was not statistically significant (42.36 ± 4.09) ($p > 0.05$). When the total score averages are analyzed with the reflection of the education received on the care; The difference between the group means was found to be significant ($p < 0.05$). In the advanced analysis of the difference between the groups, the mean score of the nurses who could reflect the received education to the care was found higher than the others (42.81 ± 4.08) ($p < 0.05$).

Discussion

When the nurses' Attitude Scale for Preventing Pressure Ulcers (ASFPPU) score averages are examined (Table 1) it was observed that minimum mean score was 29.00; maximum 51.00 and the total score average was 41.46 ± 4.28 . As the score increases, it is concluded that the attitude is positive. Studies have found similar averages, and it has been found that the attitude towards preventing pressure ulcers is positive [25,30-32]. The scale score was determined as 40.8 ± 3.9 in the study of Usher et al., which measured the attitude towards preventing pressure ulcers with 2949 nursing department students in 7 universities in Australia [33]. In the study conducted by Florin et al. with students for scale validity study in Sweden, 415 students

Table 3. Comparison of Nurses' Attitude Scale Sub-Dimensions for Preventing Pressure Ulcers with the Socio-Demographic Variables

Variables	Sub-Dimensions					
	Competence	Priority	Influence	Responsibility	Effect of prevention	Total
Age	0.146	-0.073	-0.230	-0.083	-0.004	-0.084
r	0.076	0.377	0.005	0.314	0.964	0.311
Year of employment in the profession	0.122	-0.057	-0.136	-0.060	0.047	-0.033
r	0.140	0.491	0.099	0.470	0.571	0.691
Working year in the clinic	0.242	-0.037	-0.105	-0.037	0.064	0.036
r	0.003	0.655	0.205	0.659	0.443	0.663

Table 4a: Comparison of Nurses' Total Attitude Scale towards Preventing Pressure Ulcers with Their Practices Before and After Pressure Ulcer Development

Applications*	n	Before Pressure Ulcer Develops		n	After Pressure Ulcer Develops	
		Attitude Scale for Preventing Pressure Ulcers Total Score	Median		Attitude Scale for Preventing Pressure Ulcers Total Score	Median
		$\bar{x}\pm ss$			$\bar{x}\pm ss$	
RISK DIAGNOSIS						
Yes	117	41.97 ± 4.26	42.00	79	42.46 ± 3.81	42.00
No	31	39.55 ± 3.85	40.00	69	40.32±4.52	40.00
χ^2 / p		7.95/ 0.005	<i>p</i> <0.05		7.69/ 0.006	<i>p</i> <0.05
POSITION CHANGE						
Yes	137	41.62 ± 4.12	42.00	139	41.51±4.28	42.00
No	11	39.45 ± 5.77	41.00	9	40.67 ± 4.47	42.00
χ^2 / p		1.60/ 0.206	<i>p</i> >0.05		0.39/ 0.533	<i>p</i> >0.05
SKIN CARE						
Yes	98	42.08 ± 3.99	42.00	110	42.12 ± 3.84	42.00
No	50	40.26 ± 4.60	40.50	38	39.55 ± 4.91	40.00
χ^2 / p		4.61/ 0.032	<i>p</i> <0.05		7.68/ 0.006	<i>p</i> <0.05
USING CREAM						
Yes	72	42.13 ± 3.86	42.00	98	41.92 ± 3.90	42.00
No	76	40.82±4.58	41.00	50	40.56 ± 4.85	42.00
χ^2 / p		2.84/ 0.112	<i>p</i> >0.05		2.43/ 0.119	<i>p</i> >0.05
PROTECTING THE HEELS						
Yes	87	42.46 ± 3.91	43.00	84	42.35±4.02	42.00
No	61	40.03 ± 4.40	40.00	64	40.30±4.36	41.00
χ^2 / p		10.94/ 0.001	<i>p</i> <0.05		6.87/ 0.009	<i>p</i> <0.05
MOISTURE MANAGEMENT						
Yes	57	42.88 ± 3.98	43.00	62	42.65 ± 3.94	42.50
No	91	40.57 ± 4.24	41.00	86	40.60±4.33	41.00
χ^2 / p		9.61/ 0.002	<i>p</i> <0.05		7.76/ 0.005	<i>p</i> <0.05

Table 4b: Comparison of Nurses' Total Attitude Scale towards Preventing Pressure Ulcers with Their Practices Before and After Pressure Ulcer Development-Continued

Applications	n	Before Pressure Ulcer Develops		n	After Pressure Ulcer Develops	
		Attitude Scale for Preventing Pressure Ulcers Total Score	Median		Attitude Scale for Preventing Pressure Ulcers Total Score	Median
		$\bar{x}\pm ss$			$\bar{x}\pm ss$	
INCREASING MOBILIZATION						
Yes	76	42.05±4.38	42.00	69	42.62±4.04	43.00
No	72	40.83±4.11	41.00	79	40.44 ± 4.25	41.00
χ^2 / p		6.41/0.011	<i>p</i> <0.05		9.07/ 0.003	<i>p</i> <0.05
USING SUPPORT SURFACE						
Yes	60	41.78±4.01	42.00	77	41.62 ± 4.32	42.00
No	88	41.24±4.46	42.00	71	41.28 ± 4.26	42.00
χ^2 / p		0.30/0.583	<i>p</i> >0.05		0.11/ 0.742	<i>p</i> >0.05
SKIN EXAMINATION						
Yes	58	42.57 ± 3.94	43.00	66	42.30±4.10	42.00
No	90	40.74±4.36	42.00	82	40.78 ± 4.32	41.50
χ^2 / p		5.60/ 0.018	<i>p</i> <0.05		4.14/ 0.042	<i>p</i> <0.05
PREVENTION OF RUBBING AND PEELING						
Yes	108	42.12±4.03	42.00	105	42.35 ± 3.69	42.00
No	40	39.68 ± 4.47	39.50	43	39.28 ± 4.85	38.00
χ^2 / p		9.38/ 0.002	<i>p</i> <0.05		12.87/ 0.000	<i>p</i> <0.05
PROVIDING NUTRITIONAL CONTROL						
Yes	70	42.37±4.03	42.00	73	42.45 ± 4.08	42.00
No	78	40.64 ± 4.35	41.00	75	40.49±4.27	41.00
χ^2 / p		5.52/ 0.019	<i>p</i> <0.05		7.41/ 0.006	<i>p</i> <0.05

* Multiple options are marked. χ^2 : Chi square *p*: Level of significance

Table 5: Comparison of Nurses' Total Attitude Scale towards Preventing Pressure Ulcers with Nursing Practices to Prevent Pressure Ulcer

Nursing Practices	n	Total Score Average of Attitude Scale for Preventing Pressure Ulcers	
		$\bar{x} \pm ss$	Median
COMPETENCE OF APPLICATIONS			
Finding Competent ^a	30	42.30 ± 3.91	42.00
Finding Partially Competent ^b	107	41.544.36	42.00
Finding Incompetent ^b	11	38.36 ± 3.23	38.00
χ^2 / p		7.97/ 0.019	<i>p</i> <0.05
TRAINING APART FROM SCHOOL EDUCATION			
Received Training	70	42.36±4.09	42.00
Not Received Training	78	40.65±4.31	41.00
χ^2 / p		0.58/0.446	<i>p</i> >0.05
REFLECTION OF TRAINING TAKEN INTO CARE			
Reflecting on Care ^a	27	42.81 ± 4.08	42.00
Partially Reflecting ^b	39	42.62 ± 3.64	43.00
Not-reflecting on Care ^b	4	36.75±5.25	39.00
χ^2 / p		6.68/ 0.035	<i>p</i> <0.05a

participated and students' attitudes were found to be positive [34]. In a study conducted by 742 students by Simonetti et al. in Italy, the scale score was found to be 39.9 [35]. In all of the research findings, it was found that students' attitudes towards pressure ulcers were positive. In their research with nursing students of Usher et al., Simonetti et al. and Kielo et al., the mean score of the sufficiency sub-dimension related to the prevention of pressure ulcer was low; It is revealed that students do not trust their talents, knowledge and experience. As the classes of the students grow and the clinics where they do internships vary, the rates of exposure to pressure ulcers increase; as they gain experience, their qualification scores increase [33,35,36].

When comparison of the mean scores of ASFPPU with socio-demographic variables (Tables 2,3) examined, a statistically significant negative relationship was found between age variable and effect sub-dimension ($p < 0.05$). As the age increases, the effect sub-dimension point averages of the nurses decrease. A statistically significant positive relationship was found between the working year variable in the clinic and the sufficiency sub-dimension. As the experience of working in the clinic increases, the nurses' sub-dimension mean scores also increase. In the studies conducted, the relationship between the sociodemographic variables and the scale total score average was examined, and similar results were found with our study [34-37].

When the score averages of sub-dimensions of ASFPPU were examined, it was found that the mean score of attitude towards pressure ulcer effect was significant in women ($p < 0.05$). No significant difference was found between the marital status and attitude scale mean of any sub-dimension points ($p > 0.05$). In similar studies, no statistically significant relationship was found between the mean score of gender and marital status, and our research finding is similar with the study result ($p > 0.05$) [25,32].

A significant difference was found between the competency sub-dimension and the level of education ($p < 0.05$). It was determined that the average score of competency sub-dimension of the nurses' with master's degree qualification was higher than the other education levels. As the education level increases, the proficiency score also increases. When the literature data are analyzed, there is no statistically significant difference between the level of education and the sufficiency subdimension score [25,31,32,38].

The difference between the competence and responsibility sub-dimensions and the status variable in the clinic was statistically significant ($p < 0.05$). It was determined that ICU nurses had higher scores than clinical nurses and responsible nurses. In a study conducted by Çelik et al., They determined that the nurses working in internal units had higher knowledge mean scores for preventing and treating pressure ulcers than nurses working in other departments

[38]. In his research Ekim found that the general ICU nurses had the highest average in the sufficiency sub-dimension [33]. ICU nurses provide more bed-dependent patients compared to other clinics and their long hospital stay suggests that nurses' points were increased in their competency and responsibility sub-dimensions.

There was a significant difference between the competency and responsibility sub-dimensions and the clinic studied ($p < 0.05$). It was determined that the nurses working in the 3rd level ICU had a high average score. It is thought that this difference is due to the fact that nurses working in ICU encounter with pressure ulcers more frequently and that the treatment will lead to more costly, tiring and negative consequences for the patient than prevention.

Researches, on the other hand, did not find a statistically significant difference between the clinic studied and the sub-dimension of the scale [23,25,32,38,39]. In some researches; scale mean scores were low, and nurses' attitudes towards the prevention of pressure ulcers were found to be insufficient [39-41]. And also; there are also studies showing that nurses have a positive attitude towards preventing pressure ulcers, but remain insufficient and sloppy in pressure ulcer prevention practices [23,24,30,42]. It is thought that the difference in results is due to the fact that the researches are carried out in different geographical regions and the content of the education that nurses receive. In our study, it was determined that the highest score of the nurses from ASFPPU was average score of "attitude towards the effect of pressure ulcer" (10.35 ± 1.61); the lowest score was determined from the average score of "attitude towards individual responsibility in preventing pressure ulcer" (6.11 ± 1.01). In several studies, similar results were found and it was determined that nurses scored low from the individual responsibility sub-dimension [21,25,32]. The low average score of attitude towards individual responsibility can be interpreted in relation to the nurses' education or inability to realize the importance of the education they receive or to reflect their education on patient care.

Nurses before pressure ulcer has formed; They stated that they performed risk identification, positioning, preventing rubbing and peeling, skin care and heel protection practices more frequently (Table 4). When the literature data are examined, the practices of nurses include skin evaluation, risk assessment, positioning, support surface use and nutritional management, and the research data are in line with the literature data [25,43]. Nurses after pressure ulcer has formed; They stated that they performed the care and applications more frequently including positioning, skin care, preventing rubbing and peeling and using cream. In the study of Çelik et al., The examination of the skin, the use of air mattresses and support surfaces are prominent [38]. In clinical practice, it was determined that nurses performed limited practices, reason for this, factors such as education received by nurses, hospital policies, equipment deficiency were considered.

Before and after the development of pressure ulcer, the difference between the risk diagnostic application and the scale total score mean was found to be statistically significant ($p < 0.05$). Many studies show that early risk identification prevents the development of pressure ulcers [10,25,38,44-46].

Before and after the development of pressure ulcer, the difference between skin care and the mean total score was found to be statistically significant ($p < 0.05$). Wastes should be removed from the skin to maintain the health of the skin and increase the tissue tolerance. For this purpose, individual hygiene should be provided, sweat and incontinence should be cleaned, the skin should be kept clean and moist, clothes and sheets should be clean, dry and stretched [6,16,47-50]. In the researches, it was determined that the nurses had bed baths, used diapers and prevent incontinence, frequently changed and stretched the sheets, thus taking precautions against the development of pressure ulcers [10,25,38,44-46].

Before and after the development of pressure ulcer, the difference between using cream and the mean total score was found to be

statistically significant ($p < 0.05$). One of the preventive factors in the development of pressure ulcer is the use of protective barrier cream. Dry skin should be moistened using barrier creams to adjust the moisture condition of the skin and to protect sensitive areas [25,51]. Researches revealed that ICU nurses applied barrier cream to their patients and supported our research [25,51].

Before and after the development of pressure ulcer, the difference between heel protection and the mean total score was found to be statistically significant ($p < 0.05$). Skin evaluation is one of the biggest indicators of pressure ulcer development. Assessment is effective in taking appropriate preventive measures and choosing preventive applications. In order to protect the heel, especially the heel should be drifted apart from the bed and its elevation should be ensured [52]. In the studies carried out; it was determined that nurses put a booster pillow or cotton pad under the heel of the patient and provided elevation and used barrier cream on the areas with a change in skin color [25,32,53].

Before and after the development of pressure ulcer, the difference between moist management and the mean total score was found to be statistically significant ($p < 0.05$). The fact that the skin is both wet and dry is effective in the development of pressure ulcers. Moisture causes maceration of the skin, weakening of the cruciate ligaments in the collagen tissue, removing the oil that provides the elasticity of the tissue, and increasing the sensitivity against rubbing and tears, thereby disrupting the tissue integrity [6,21,26,48,54]. Studies have found that nurses use diapers in patients and prevent incontinence and use moisturizing products to prevent drying [10,25,38,44-46,55].

Before and after the development of pressure ulcer, the difference between increasing mobilization and the mean total score was found to be statistically significant ($p < 0.05$). Researches have revealed that nurses perform immobile patients' joint range of motion and passive ROM exercises within the bed and change the position of a patient every 2 hours [25,32].

Before and after the development of pressure ulcer, the difference between skin examination and the mean total score was found to be statistically significant ($p < 0.05$). The frequency of skin evaluation varies according to the change in the patient's condition, but is performed daily in routine. The development of pressure ulcers is particularly on the bony protrusions, but the areas of contact with medical devices such as nasogastric catheter, endotracheal tube, Foley catheter should be carefully observed [6,47-49]. Researches have shown that nurses perform skin examinations when patients come to the clinic; They have shown that they focus on preventive applications such as positioning, using barrier cream, humidity control in risky patients [10,25,38,44-46].

Before and after the development of pressure ulcer, the difference between preventing rubbing and peeling and the mean total score was found to be statistically significant ($p < 0.05$). Rubbing, improper turning, pulling and lifting techniques cause damage to the upper layer of the epidermis and dermis, and maceration in deep tissues. It can be quite painful because there are injuries affecting the nerve endings. Sheets or devices should be used when positioning patients or transferring patients [6,19,26]. In the study of Çelik, 77.8% of the nurses used sliding sheets, sliding boards or lifting methods when changing the position of the patient [38]; In the research of Doğu, 50% of the nurses applied the wrong method; It was determined that they pull the patient up under the armpits with two people and cause shearing. The research was repeated after the nurses were trained on PU applications, and misapplication rates were found to be below [8]. It is seen that postgraduate education affects both knowledge level and attitudes [8,38].

Before and after the development of pressure ulcer, the difference between enabling nutrition control and the mean total score was found to be statistically significant ($p < 0.05$). In order for healthy tissue to be formed, the immune system to be strong and wound healing, basic nutrients must be sufficient. Hypoalbuminemia, which occurs with

malnutrition, causes colloid osmotic pressure to decrease, fluid to pass through the vein into the third cavities and tissues to oxygenate insufficiently. After all, oxygen deficiency causes ischemia; the decrease in colloid osmotic pressure also leads to edema. Edema reduces the resistance of tissues to rubbing and tearing. Inadequate fluid intake affects the skin turgor, causing pressure ulcer development [2,19,25,26,56,57]. In their study with 46 immobile patients who received inpatient treatment for more than 5 days, Tokgöz and Demir calculated the energy needs of patients and provided intravenous and peroral feeding with standard feeding fluids [58]. Ersoy et al found a relationship between low albumin level and the formation of new PU in their study conducted with patients hospitalized in ICUs [10]. In a study conducted with elderly patients in the Internal Diseases ICU, Bulut found that patients fed enteral or TPN developed more pressure ulcers than patients fed regimen 1 [59]. In their studies in which the nurses working in the emergency room determine the pressure ulcer knowledge levels of Rafiei et al., They found that the majority of the nurses stated that "protein calorie should be maintained during the disease by determining the needs of the patient" and that nutrition has an important place in the formation of pressure ulcers [55]. Researches reveal that nurses take care to ensure nutrition in both preventive and therapeutic applications of pressure ulcers and understand the importance of the subject [10,55,58,59].

It was determined that there was no statistically significant difference between using support surface and scale total score before and after the pressure ulcer developed ($p > 0.05$). The fact that all the patient beds in the ICU are air beds and the ease of automatic positioning suggested that nurses are accepted as routine practice.

When the relationship between ASFPPU total score average and nursing practices to prevent pressure ulcers is examined; The difference between the adequacy of the applications and the reflection of the education received on the care and the total score mean was statistically significant ($p < 0.05$). It was determined that there was no statistically significant difference between receiving education after graduation and the total score average of the scale ($p > 0.05$). In some studies on the subject, it has been stated that there is no significant difference between the total attitude score average of the nurses and a training variable for the prevention / care of pressure ulcers after graduation [8,25,32,39]. However, many studies have found that the education taken after graduation increases the attitude scores and emphasized the importance of the education after graduation [3,31,42,53]. In our study, the scale scores of the nurses who found their applications sufficient and stated that they transferred the education they received after graduation to the application were high, which showed us that education had a positive effect on attitude.

Conclusion

As a result of this research; the mean scores of the nurses in the ASFPPU scores were high and their attitudes towards prevention were positive. It was determined that the nurses who work in 3rd scale ICU were more likely to encounter with pressure ulcer and receive higher scores from the scale, there was a negative effect between the age and scale sub scores, there was a positive effect between clinic working time and scale sub scores, nurses who think their practices for preventing and treating PU were sufficient in care, had higher scale sub scores, and that the scale scores of the nurses who thought that they could reflect their post education to the care were higher.

Recommendations

According to the results of this study, each institution should establish PU care protocols in accordance with standards and innovations, develop clinical practice guides and ensure that they are checked for compliance. It is recommended to organize in-service training programs and symposiums in which the Pressure Ulcer, Pressure Ulcer risk diagnostics scales are introduced, and the planning and implementation of Pressure Ulcer preventive interventions are discussed in order to enable nurses to provide care with specified qualifications.

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Declaration of competing interest

The authors declare no conflict of interest.

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