

## Knowledge and Attitudes of New Graduate Nurses on the Prevention of Pressure Ulcers

Yeni Mezun Hemşirelerin Basınç Yarasını Önlemeye Yönelik Bilgi Ve Tutumları

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### ABSTRACT

Pressure ulcer is an important problem for both patients and healthcare system they are included in. This descriptive study aims to investigate the knowledge and attitudes of new graduate nurses on the prevention of pressure ulcers.

The study was conducted with 70 nursing students, who graduated in the 2017-2018 academic year from the nursing department of the faculty of health sciences of a state university. The data were collected using a 20-item questionnaire, developed in line with the literature to evaluate the demographics of new graduate nurses and their knowledge of pressure ulcer prevention, and using the Attitude Scale Towards Pressure Ulcer Prevention (APUP).

The average age of the new graduate nurses participating in the study was 22.82±1.77, 82.9% of them were female, 6.7% took wound care courses, and 91.4% provided care to the patient with pressure wounds in practice. The knowledge score average of new graduate nurses about pressure ulcer prevention was 16.74±1.68, and their total score average on the APUP scale was 36,04±2,26 (69.30%).

New graduate nurses were found to have a moderate level of knowledge and attitudes on the prevention of pressure ulcers. Attitudes develop and change as a result of experiences or events over time. It is believed that the attitudes of new graduate nurses, in their professional life, will improve in line with the experiences gained during the one-to-one care provided to patients with pressure ulcers.

**Keywords:** Attitude, New Graduate Nurse, Pressure Ulcer.

### ÖZ

Basınç yarası, hem hasta hem de içinde bulunduğu sağlık bakım sistemi için önemli bir problemdir. Tanımlayıcı tipteki bu araştırma, yeni mezun hemşirelerin bası yaralarının önlenmesine ilişkin bilgi ve tutumlarını araştırmayı amaçlamaktadır.

Çalışma bir devlet üniversitesinin sağlık bilimleri fakültesi hemşirelik bölümünde 2017-2018 akademik yılında mezun olan 70 hemşirelik öğrencisi ile yapılmıştır. Veriler, yeni mezun hemşirelerin demografik özelliklerini ve basınç yarasını önlemeye yönelik bilgilerini değerlendiren literatürden yararlanılarak oluşturulan 20 soru ve Basınç Ülserlerini Önlemeye Yönelik Tutum Ölçeği (BÜÖYT) kullanılarak toplanmıştır.

Çalışmaya katılan yeni mezun hemşirelerin yaş ortalaması 22,82±1,77, %82,9'unun kadın, %65,7'sinin yara bakım dersi aldığı, %91,4'ünün uygulama alanlarında basınç yarası olan hastaya bakım verdiği saptanmıştır. Yeni mezun hemşirelerin basınç yarası önleme ortalama bilgi puan ortalamaları 16,74±1,68, BÜÖYTÖ'nin toplam puan ortalamaları 36,04±2,26 (69,30%) olarak saptanmıştır.

Yeni mezun hemşirelerin basınç yarasını önlemeye yönelik bilgisinin ve önlemeye yönelik tutumunun orta düzeyde olduğu saptanmıştır. Tutumlar zaman içinde yaşanan deneyimler ya da olaylar sonucunda gelişirler ve değişirler. Yeni mezun hemşirelerin meslek hayatına atıldıklarında basınç yarası olan hastalara birebir bakım vermeleri sonucu yaşadıkları deneyimlerle tutumlarının artacağı düşünülmektedir.

**Anahtar Kelimeler:** Tutum, Yeni Mezun Hemşire, Basınç Yarası.

*Ethical permission was obtained from Kastamonu University Non-Clinical Research Ethics Committee of a State University (Decision no: 2020-2/6). This study was previously presented as an poster presentation at 1st International Internal Medicine Nursing Congress, November 25-27, 2018, Antalya, Türkiye.*

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**Geliş Tarihi / Received:** 27.06.2022  
**Kabul Tarihi/Accepted:** 07.02.2024

## INTRODUCTION

The pressure ulcer (PU) is an important problem for both the patient and the health care system. PU's occur as a result of localized skin and subcutaneous tissue damage caused by pressure alone or tearing and pressure on bone protrusions in the body.<sup>1,2</sup> Incidence has been reported as 2.3-23.9% in long-term care facilities and 0.4-38% in acute care in the literature.<sup>3</sup> The PU affects patients' physical health and threatens their life, leads to pain, lengthens the hospital stay, increases the cost of health care, as well as negatively affects patients' quality of life, daily life activities, and rehabilitation. Although PU is largely preventable.<sup>4-8</sup> The PU is treated as one of the quality indicators in the health care system and its prevention and treatment require a multidisciplinary team with holistic care understanding. Nurses, who are indispensable members of the health care team and provide 24-hour services, have the most important role in this process. Therefore, preventive nursing care given before pressure wound occurs is of great importance.<sup>4,9,10</sup> It is reported that with evidence-based nursing care, the incidence of PU can be reduced.<sup>1,2,11</sup> The first step is to determine the risk of PU development within the scope of nursing care in each patient hospitalized in the clinic, using valid risk assessment tools. In addition to the risk assessment tools for preventing PU's, the knowledge levels and attitudes of nurses towards PU prevention are also important to provide effective care. Although training is an important component of PU prevention, it alone is not sufficient. Results from studies with nurses in the literature have shown that their improved knowledge was not consistently linked to improved care.<sup>12,13</sup> While Beeckman could not find an independent relationship between knowledge and adequate prevention in their study, they found that there was a significant relationship between adequate prevention practice and the attitudes of nurses outside the ward and the ward.<sup>14</sup> For this reason, not only the education level but also the attitudes of nurses towards PU prevention are of

importance in the treatment and prevention of PU's.<sup>4,6,14-16</sup> Attitude is defined as a summary evaluation of an object of thought.<sup>17,18</sup> Since negative attitudes towards PU prevention can influence preventive care strategies, determining their attitudes towards PU prevention can determine their behavior and beliefs about PU care.<sup>19</sup> Ünver et al, in their study with surgical nurses, found an 80.5% attitude of nurses towards preventing PU's and reported that nurses have a positive attitude towards PU prevention.<sup>6</sup> Similarly, Aslan et al. and Beckmann et al. found that nurses had a positive attitude towards preventing PU.<sup>16,17</sup> The results of studies conducted with the freshman, sophomore, and junior nursing students on the prevention of PU's revealed that students have positive attitudes in this regard.<sup>4,19</sup> Attitudes develop and change as a result of experiences or events over time, leading to positive or negative behavior.<sup>20</sup> In the literature, studies evaluating the attitudes of nurses towards PU prevention were conducted on nurses working in the clinical field and nursing students, and no studies were evaluating the knowledge and attitudes of newly graduated nurses towards PU prevention. The knowledge and attitudes of nurses who have just left from being student to their professional life about PU are important. This study was considered to provide recommendations to clinics to identify the deficiencies in this issue and complete them with in-service training. For this reason, this research was planned to reveal the relationship between the knowledge and attitudes of new graduated nurses regarding the prevention of PU's.

### Research questions

- What is the level of knowledge of new graduated nurses about prevention of PU?
- What are the attitudes of new graduated nurses towards PU prevention?
- Is there a relationship between the level of knowledge and attitudes of new graduated nurses towards PU prevention?

## MATERIAL AND METHODS

This is a descriptive study. The sample of the study consisted of new graduate nurses ( $n = 70$ ) who volunteered to participate in the study. As a result of the power analysis performed, the sample size of the study was determined to be 70 individuals, with a 95% confidence interval, 0.05 margin of error, 0.30 degree of impact, and 80% theoretical power. Being a new graduate from the department of nursing and volunteering for the study were the inclusion criteria of the study. The data were collected between June 22nd and 24th, 2019. The questionnaires took about 10-15 minutes to fill in.

### Data Collection

The data were collected by the researchers through a questionnaire at the school of graduation. Data collection tools used in their search consist of three parts. In the first part, the Introductory Identification Form consists of questions on the nurses' age, gender, whether they took a wound care course, and whether they provided care for a patient with PU's in the practice; the second part consists of a 20-item questionnaire to evaluate the level of knowledge on the prevention of PU's. The lowest and highest scores on the scale are 0 and 20, respectively.<sup>1,2</sup> The 20-item questionnaire was submitted for content validity to 3 nurses, who provide care for patients with PU's, and 2 physicians, who study PU's. Correct statements were scored by 1 point.<sup>21</sup> In the third part, the Attitude Towards Pressure Ulcer Prevention Instrument (ATPUPİ) developed by Beeckman et al. (2010), which its Turkish validity and reliability studied by Üstün in 2013, was used for data collection. Üstün (2013) calculated the scale's overall Cronbach's Alpha reliability coefficient as 0.714.<sup>14,20</sup> The internal consistency coefficient (Cronbach's Alpha) of the scale was found to be 0.715 in our study. These findings show the adequate reliability of the scale (Cronbach's Alpha > 0.70). The ATPUPİ scale consists of 13 items and 5 sub-scales, including attitude towards individual competence (1st, 2nd, 3rd items),

attitude towards the priority of preventing PU (4th, 5th, 6th items), attitude towards the impact of PU (7th, 8th, 9th items), attitude towards personal responsibility in preventing PU's (10th, 11th items), attitude towards the effectiveness of preventing PU (12th, 13th items) sub-scales. Of the scale, 6 out of 13 items consist of positive, and 7 items consist of negative statements. The items numbered 3, 5, 7, 8, 9, 10, and 13 are reverse coded. In the evaluation of the scale, positive statements are scored by a 4-point Likert-type scale (1: strongly disagree, 2: disagree, 3: agree, 4: strongly agree). The lowest and highest scores on the scale are 13 and 52, respectively. The attitude is expected to be positive as the total ATPUPİ score average increases.<sup>20</sup>

### Statistical Analyses

The IBM SPSS Statistics version 21.0 (IBM, Armonk, NY, USA) software package was used for coding and analyzing the data. Descriptive statistics (mean, standard deviation, number, and percentage), Mann-Whitney U test, and the Spearman correlation test was used. Non-parametric tests were used for the not normally distributed data, and  $p < 0.05$  was considered significant. A statistical significance level of  $p < 0.05$  was used.

### Ethical Considerations

Written approval of the Non-Clinical Research Ethics Committee of a State University (2018/1) and written consents of the new graduate nurses involved in the study were obtained to carry out their search. All directives of the Helsinki Declaration have been followed and informed consent was obtained from the participants.

### Limitations of the Research

The sample of this study is not representative of the all country, as new graduate nurses who graduated from a faculty and agreed to participate in the study were included.

### Acknowledgments

We thank the new graduate nurses for their participation

## RESULTS AND DISCUSSION

The average age of the new graduate nurses participating in the study was  $22.82 \pm 1.77$ , ranging from 20 to 29 years, 82.9% of them was female (n=58), 65.7% took wound care courses (n=46), and 91.4% was found to provide care to a patient with pressure wounds in practice (n=64). The clinic where they provided care for the patient with PU was an intensive care unit by 50% (Table 1).

**Table 1. Sociodemographic Characteristics of New Graduate Nurses (N = 70)**

Variables	Mean	SD
Age (mean±SD)	22.82	1.77
	<b>n</b>	<b>%</b>
Gender n (%)		
Female	58	82.9
Male	12	17.1
Took wound care course (%)		
Yes	46	65.7
No	24	33.4
Provided care for a patient with PU in application area (%)		
Yes	64	91.4
No	6	8.6
Unit where a PU was seen (%)		
Intensive care	35	50
Internal Medicine	18	25.7
Clinic	7	10
Surgical Clinic	1	1.4
Nursing Home	1	1.4
Residential care		

SD:Standart Deviation, PU: Pressure Ulcer

The total ( $36.04 \pm 2.26$ ) and sub-scale score averages of new graduated nurses, regarding the attitudes towards ATPUPI, are presented in Table 2. New graduate nurses received the lowest scores in the attitude towards personal responsibility in preventing PU ( $5.51 \pm 0.55$ ) and attitude towards the effectiveness of preventing PU ( $5.51 \pm 0.55$ ) sub-scales and the highest score in the attitude towards the impact of PU ( $10.98 \pm 1.14$ ) sub-scale. According to Mann Whitney U the statistical

evaluation, there was no significant difference between the average ATPUPI score of the new graduate nurses in terms of their age, gender, wound care course status, and the provision of care to a patient with PU's during the practice training ( $p > 0.05$ ).

**Table 2. Total and Sub-Dimension Scores from the Attitude Towards Pressure Ulcer Prevention Instrument (N = 70)**

The sub-dimensions of ATPUPI	Mean scores	SD
Personal competency to prevent PU's	7.04	1.31
Priority of PU prevention	7.15	0.91
Impact of PU's	10.98	1.14
Personal responsibility in PU prevention	5.51	0.55
Confidence in the effectiveness of prevention	5.51	0.55
Total score	36.04	2.26

SD:Standart Deviation

Table 3 shows the distribution of responses by the new graduate nurses to the questionnaire about the knowledge levels on the prevention of PU's. All new graduates answered 5th, 6th, 12th, 14th, and 19th questions correctly, and nearly all of them answered 1st, 2nd, 3rd, and 16th questions correctly. A small proportion of them incorrectly responded to the statements "If the patient's health is poor (in bed) the patient shall not be moved" (12.9%), "Sheepskin should be used to prevent PU" (24.3%), "Moisturizing cream should be used to protect the reddened skin" (25.7%), "Massage should be applied to the area at risk of developing PU's" (34.3%). Participants were found to receive an average score of  $16.74 \pm 1.68$  points in the knowledge questionnaire on the prevention of PU's.

There was no correlation between the knowledge score of new graduate nurses and their attitudes towards PU prevention according to the Spearman correlation test ( $r = 0.003$   $p > 0.98$ ).

**Table 3. Knowledge Levels of New Graduate Nurses on the Prevention of PU's (N = 70)**

	True		False	
	n	%	n	%
1. Risk of developing PU is tested by the Braden scale	69	98.6	1	1.4
2. Nutritional needs of patients at risk of developing PU's should be evaluated and managed	69	98.6	1	1.4
3. Pain related to PU development should be evaluated and pain management should be applied	69	98.6	1	1.4
4. <sup>a</sup> Hot compress should be applied on the PU	60	85.7	10	14.3
5. When changing the patient's position, the skin should be prevented from being subjected to friction and tearing forces	70	100	0	0.0
6. The patient's safety, mobility and comfort in the bed or chair should be provided	70	100	0	0.0
7. <sup>a</sup> The patient should be positioned into 90-degree side-lying position every 4 hours	46	65.7	24	34.3
8. <sup>a</sup> Sheepskin should be used to prevent PU	17	24.3	53	75.7
9. All individuals at risk of PU's should be given a systematic skin examination at least once a week	62	88.6	8	11.4
10. <sup>a</sup> Massage should be applied to the area at risk of developing PU's	24	34.3	46	65.7
11. The patient should be positioned 30-degree side-lying on the bed	56	80.0	14	20.0
12. A change of position should be applied to reduce duration and intensity of pressure on sensitive areas of the body	70	100	0	0.0
13. The skin should be clean and dry	61	87.1	9	12.9
14. Care applied to prevent and treat PU should be recorded	70	100	0	0.0
15. <sup>a</sup> Moisturizing creams should be used to protect the reddened skin	18	25.7	52	74.3
16. A support surface suitable for the health care setting should be used as long as the risk persists in the patients at risk	69	98.6	1	1.4
17. <sup>a</sup> If the patient's health is poor (in bed) the patient shall not be moved	9	12.9	61	87.1
18. Excessive moisture formation due to incontinence, sweating, and wound drainage should be prevented	66	94.3	4	5.7
19. Nurses and caregivers should be trained on the principles of PU prevention	70	100	0	0.0
20. <sup>a</sup> To prevent dryness of the skin, the skin should be moistened with wet cotton	39	55.7	31	44.3

<sup>a</sup> Items marked with asterisks are negative items that needed revering coding prior to using in total score

This study was conducted to determine the knowledge and attitudes of nurses, just graduated from the faculty of health sciences, nursing department of a state university, on the prevention of PU's. Nurses are key members of the health care team. Therefore, it is important to take the necessary measures to prevent PU's based on scientific evidence, to have awareness of possible risk factors, and to have a positive attitude towards PU prevention.<sup>4,6,16</sup> High level of knowledge and

positive attitudes towards the prevention of PU's lead to better outcomes in health institutions.<sup>22</sup> There are studies in the literature that evaluate the level of knowledge of nurses on the prevention of PU's.<sup>4,5,10,19,23</sup> However, the same tools were not used to measure the level of knowledge in all of these studies, and different scores were obtained. In this study, the knowledge score (16.74/20, 83.7%) of the new graduate nurses on the prevention of PU's was found



to be high. In their study that uses the

Çelik et al. found that nurses working in the clinical setting had moderate (15.63/20) knowledge about PU prevention.<sup>5</sup> There are studies (e.g. The Pressure Ulcer Knowledge Assessment Tool) similar to our study that use different measurement tools to evaluate the level of knowledge about PU prevention.<sup>4,10,19,23</sup> Barakat-Johnson et al. assessed the nurses' level of knowledge about PU prevention by the Pressure Ulcer Knowledge Test (PUKT) and found their score as high (35.21/47).<sup>23</sup> In their study conducted with the same scale, Lawrence et al. found that the nurses had a high level of knowledge of PU prevention.<sup>10</sup> In their study, Usher et al. found that nursing students had a low knowledge score average (13.3/26) regarding PU prevention.<sup>4</sup> In another study, conducted with the same assessment scale, nursing students' knowledge scores (13.3/26) about PU prevention were found to be low.<sup>19</sup> The reason for the difference in the knowledge scores of nurses regarding the prevention of PU in the studies conducted is that the same tools were not used to measure the level of knowledge in all of these studies and these studies were conducted in different sample groups (nursing students).

In the study, all participants correctly responded to the statements "When changing the patient's position, the skin should be prevented from being subjected to friction and tearing forces", "The patient safety, mobility and comfort in the bed or chair should be provided", "Care applied to prevent and treat PU should be recorded", "Nurses and caregivers should be trained on the principles of PU prevention" on the knowledge questionnaire of PU prevention. In their study of nurses, Saleh et al. found the correct response rate to these questions to be over 90%, while Çelik et al., in a similar study, found the correct response rate to these questions to be over 96%.<sup>5,12</sup>

In this study, the attitude score average of newly graduated nurses towards PU prevention was found to be 36.04/52 (69.30%). Since this value was below <75, the attitude towards PU prevention was

measurement instrument same as our study, concluded to be moderate. In the studies using the same attitude scale towards PU prevention, Demarré et al. found the attitude score of nurses towards PU prevention as 38.74 (74.5%), Usher et al. found nursing students' attitude score towards PU prevention as 40.8/52, Simonetti et al. found the attitude score of nursing students towards PU prevention as 39.9/52 (76.7%), and Aslan & van Giersbergen, in their study conducted with 660 nurses working in a university hospital, found the nurses' attitude score towards PU prevention as 43.74/52 (84.12%).<sup>4,16,19,24</sup> In a similar study, Ünver et al. found the attitude score of towards PU prevention surgical nurses as 41.86/52 (80.5%).<sup>6</sup> In our study, the score on the attitude scale was found to be lower than that of these studies. The units that students practice in the clinical field during their nursing education may differ. In some clinical units (such as intensive care unit, orthopedic clinic, palliative care unit), it is possible to encounter patients with more pressure injuries due to the characteristics of their patients. Practical experience in different clinical units may affect attitudes towards PU prevention.<sup>16,25</sup> Samuriwo showed in her study that caring for a patient with PU increases the value given to PU prevention strategies.<sup>26</sup>

The newly graduated nurses were believed to have moderate attitudes towards PU prevention due to less responsibility assumed in providing care to the patient with PU's in the clinical setting, their lack of experience in providing care, their inability to transfer their knowledge to the clinical practice because of their lesser effect in the clinical area. It is believed that the attitudes of newly graduated nurses, in their professional life, will improve in line with the experiences gained during the one-to-one care provided to the patients with PU's. New graduated nurses received the highest attitude towards PU prevention scale score in the "Attitude towards the impact of preventing PU" (10.98) sub-scale, and the lowest score in the "Attitude towards personal responsibility in preventing PU's"

and "Attitude towards the effectiveness of preventing PU" (5.51) sub-scales. In their study, Usher et al. found that the highest score taken in the attitude scale towards the PU prevention was in the "Attitude towards the priority of preventing PU (10)", and the lowest in the "Attitude towards the effectiveness of preventing PU (6.4)", similar to our study results.<sup>4</sup> In their study of nursing students, Simonetti et al. found a poor correlation between students' knowledge and attitude scores regarding PU prevention.<sup>4,19</sup> Usher et al. found a weak positive correlation between total knowledge score and attitude

score in their study with nursing students.<sup>4</sup> Beeckman et al. also found a relationship between knowledge score and attitude in this regard.<sup>17</sup> In the correlation analysis conducted in our study, however, no correlation was found between total knowledge score and attitude score regarding PU prevention ( $r=0.003$   $p>0.98$ ). This finding is in line with the results of the study by Demarre et al.<sup>24</sup> The reason for the difference in the results of the study may be that the study was carried out with different sample groups.

## CONCLUSION AND RECOMMENDATION

In conclusion, prevention of PU is a subject of interest in nursing care. Poor knowledge and negative attitudes toward pressure injury prevention could undesirably affect preventive care strategies. New graduate nurses were found to have a

moderate level of knowledge and attitudes on the prevention of PU's. It is recommended to include the prevention of PU's in in-clinical training programs for nurses who will just start their nursing profession.

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