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Investigation Of Pressure Sores Frequency And Risk Factors Of Patients Registered To Home Health Unit

Evde Sağlık Birimine Kayıtlı Hastaların Bası Yarası Sıklığı Ve Risk Faktörlerinin Araştırılması

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Abstract

Aim: The study was to investigate the frequency of pressure sores, the risk factors causing their formation, and their relationship with nutrition in patients receiving home health services.

Materials and Methods: After scanning all 4098 patients registered with the Home Health Unit of an Education and Research Hospital in İzmir, Turkey, it was discovered that 186 of them had pressure sores. The study concluded with 151 patients as 35 patients passed away during the data collection process. The questionnaire employed in the study comprised two parts: The first part examined patients' sociodemographic and clinical characteristics, while the second part utilized the Pressure Ulcer Scale for Healing, Braden Pressure Ulcer Risk Assessment Scale, and Malnutrition Universal Screening Tool.

Results: Pressure sores were found in 3.69% of the 4098 patients. The mean age of the patients was 78.29 (78.28±14.51), and 103 (68.2%) were female patients. Upon analyzing patients based on the presence of chronic diseases, it was noted that the risk of pressure sore development was notably higher in the high and very high-risk groups, particularly among those with neurological diseases. Approximately 44.4% of the patients utilized nutritional products. A statistically significant correlation was observed between the use of high-protein dietary products and the Braden scale score..

Conclusion: This study shows that the patients receiving Home Health Care Services are in the risky group in terms of pressure sores and malnutrition, but the incidence decreases with good care and caregiver education. The most important factors that increased the risk of pressure sore formation and the severity of pressure sores were neurological disease, nutritional status, and urinary and fecal incontinence.

Keywords: Pressure Sore, Malnutrition, Geriatrics, Home Care Services

Özet

Amaç: Evde Sağlık Hizmeti alan hastalarda bası yarasının sıklığı, yara oluşumuna neden olan risk faktörleri ve beslenme ile ilişkisinin araştırılması amaçlanmıştır.

Gereç ve Yöntem: İzmir ilinde bir Eğitim Araştırma Hastanesi Evde Sağlık Birimine kayıtlı 4098 hastanın tamamının taranması sonrasında 186'sında bası yarası olduğu saptanmıştır. Veri toplama sürecinde 186 hastadan 35'i exitus olması nedeniyle çalışmadan çıkartılmış ve çalışma 151 hasta ile tamamlanmıştır. Uygulanan anketin ilk bölümünde hastaların sosyodemografik ve klinik özellikleri incelenmiş, ikinci bölümde ise üç ölçek kullanılmıştır. Basınç yarasının Basınç Ülseri İyileşme Değerlendirme Ölçeği, Braden Basınç Yarası Risk Değerlendirme Ölçeği ve Malnütrisyon Universal Tarama Ölçeği kullanılmıştır.

Bulgular: Evde sağlık birimine kayıtlı toplam 4098 hastadan %3,69'unda bası yarası saptanmıştır. Çalışmaya katılan hastaların yaş ortalaması 78,29 (78,28±14,51) olup 103'ü kadın (%68,2) hastalardan oluşmaktadır. Hastalar kronik hastalık varlığına göre incelendiğinde özellikle nörolojik hastalığı olanların bası yarası oluşma riskinin yüksek ve çok yüksek risk grubunda yoğunlaştığı görülmektedir. Hastaların %44,4'ü beslenme ürünü kullanmaktadır. Yüksek proteinli beslenme ürünü kullanımı ile Braden ölçeği skoru arasında istatiksel olarak anlamlı ilişki saptandı.

Sonuç: Bu çalışma Evde Sağlık Hizmeti alan hasta grubunun bası yarası ve malnütrisyon açısından riskli grupta olmasıyla birlikte iyi bir bakım hizmeti ve danışmanlık ile görülme sıklığının azaldığı görülmektedir. Bası yarası oluşma riskini ve bası yarasının ciddiyetini arttıran en önemli etkenlerin hastaların nörolojik hastalığının olması, beslenme durumu, idrar-gaita inkontinans durumu olduğu görülmüştür.

Anahtar Kelimeler: Bası Yarası, Malnütrisyon, Geriatri, Evde Bakım Hizmetleri

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Introduction

In today's world, rapid technological advancements and the discovery of new medical treatment protocols have led to a decrease in mortality rates and an increase in life expectancy. Consequently, the global population of older adults is on the rise. This growing older adults population, coupled with the long-term treatment of complications arising from chronic diseases, has resulted in a significant upsurge in healthcare expenditures. Home healthcare services (HHS) play a crucial role in ensuring equitable access to healthcare services for those in need. This is especially pertinent in countries like Turkey, where the healthcare budget per capita is insufficient, and the number of hospital beds available falls short.[1]

Broadly defined, home healthcare services refer to the provision of medical examinations, tests, treatments, and rehabilitation services by professional healthcare teams within the homes of older adults, disabled individuals, and bedridden patients who face difficulties accessing traditional healthcare facilities due to various illnesses.[2] The close monitoring and treatment of these patients can substantially mitigate the risk of acute and chronic complications. The prevention of such complications contributes to cost savings by reducing hospitalizations and overall healthcare expenses.[3]

Pressure sores, characterized by tissue necrosis and ulcers resulting from reduced capillary circulation due to prolonged and repeated pressure, primarily afflict bedridden and long-term immobilized patients.[4] According to the USA National Pressure Ulcer Advisory Panel (NPUAP) data, the prevalence of pressure sores varies between 10% and 18% in acute care units, 2.3-28% in long-term care units, and 0-29% in-home care services.[5] They carry high morbidity and mortality rates and impose a significant burden on caregivers, along with substantial care expenses. The treatment of pressure sores ranks as the third-highest cost category following malignancies and cardiovascular diseases.[6] Despite increased awareness through education provided to doctors, healthcare professionals, and caregivers for pressure sore prevention in recent years, it remains a significant healthcare challenge, both in our country and globally.[7]

When considering the general population, it becomes evident that the group of patients receiving home healthcare services is particularly vulnerable to pressure sores. Providing education to prevent pressure sores is not only easier but also less costly than offering treatment after tissue damage has occurred.[8]

We conducted an analysis of patients receiving Home Healthcare Services who have pressure sores. The study examined the relationship between the patients' wound conditions and various socio-demographic factors such as age, income level, education level, and the degree of proximity of the caregiver. Additionally, we investigated patient-specific factors including chronic illnesses, dietary habits, and nutritional status to understand their correlation with pressure sores.

Material And Methods

Our study was initiated with the approval of the Clinical Research Ethics Committee on August 20, 2021. The research site is the Home Health Unit of a Training and Research Hospital in Izmir.

During the study, file scans of all 4,098 patients registered with the Home Health Unit were conducted, and after home visits were made, pressure sores were detected in 186 of them. Thirty-five patients were excluded from the study due to their passing away during the data collection process. The study was completed with 151 patients.

Between December 1, 2021, and February 28, 2022, 151 active patients registered with the Home Health Unit were reached by phone, visited at home or while they were admitted to the outpatient clinic, and then asked for their consent to participate in the study. Consent has been obtained from the primary caregivers of patients with cognitive impairments for the study. Patients who were under 18 years of age were included in the study after obtaining consent from them and their caregiver parents individually before the questionnaire was administered.

The questionnaire consisted of two parts. The first one consisted of 20 questions on the participants' consent form, sociodemographic data, and introductory features of the participants. The second part included the Pressure Ulcer Scale for Healing (PUSH), the Braden Scale for Predicting Pressure Sore Risk, and the Malnutrition Universal Screening Tool (MUST).

The PUSH consists of three subscales: tissue type, amount of exudate, and pressure sore area. The total score, ranging from 0 to 17, reflects information about the ulcer's condition, with a higher score indicating greater severity of the ulcer.[9,10]

The Braden Scale for Predicting Pressure Sore Risk was developed by Braden and Bergstrom, and a validity and reliability study were conducted in Turkey in 1997. The total score ranges from 6 to 23 by adding the subscale scores. A score of 15-16 is considered low risk (for people over 75 years of age, a score of 15-18 is considered low risk), a score of 13-14 is considered moderate risk, and a score of 12 or lower is considered high risk.[11]

The MUST is recommended by the ESPEN (European Society for Clinical Nutrition and Metabolism) and the British Association for Parenteral and Enteral Nutrition (BAPEN). The total score of the MUST is used to classify individuals into low, medium, and high-risk groups formal nutrition, with a score of 0 indicating a low risk, a score

of 1 indicating a moderate risk, and a score of 2 or higher indicating a high risk. Nutritional therapy and management are recommended based on the risk level.[12,13]

The statistical analyses were performed using the IBM SPSS Statistics 24.0 statistical package program. A Cronbach's alpha reliability analysis was conducted to determine the reliability of the data collection tool. Independent sample t-tests and ANOVA tests were employed for normally distributed data, while the Mann-Whitney U test and Kruskal-Wallis H test were used for data that did not follow a normal distribution. Chi-square tests, Fisher's exact test, Fisher-Freeman-Halton test, and Continuity (Yates) correction analyses were conducted for the comparison of qualitative data. Adjusted residual values were examined to measure the statistical significance between groups. Considering the distribution of z=1.96 at a 95% significance level (sig= 0.05), values greater than ± 1.96 were considered significant

Results

In our study, the demographic characteristics of the 151 patients with pressure sores are given in Table 1. 103 of the patients were female (68.2%). The mean age was 78.28±14.51 (15-104) years. Especially in the 85 years and older group, 41 patients (74.55%) were female.

Table 1. *Socio-demographic and Health Information Characteristics of the Patients (n =151)*

Değişkenler		Number(N)	Percentage (%)
Gender	Male	48	31.8
	Female	103	68.2
Age (years)	0-17	1	0.7
	18-64	22	14.6
	65-73	18	11.9
	74-84	55	36.4
	85+	55	36.4
Level of Income	Subminimum rate	67	44.4
	Minimum wage	35	23.2
	Above minimum wage	49	32.5
Education Status	Under high school	131	86.8
	High school	16	10.6
	Post-secondary	4	2.6
Nutritional Status	Oral	129	85.4
	PEG	12	7.9
	NG	10	6.6
Enteral/Oral Nutrition Product Usage Status	Yes	67	44.4
	No	84	55.6
Marital Status	Married	45	29.8
	Single	8	5.3
	Widow	98	64.9
Health Insurance	Yes	141	93.4
	No	10	6.6
Degree of Closeness of the Carer	1./2. Degree relative	104	68.9
	Partner	30	19.9
	Others (Caregiver, Relatives vb.)	17	11.3
Urinary and/or Fecal Incontinence Condition	With probe	37	24.5
	Urinary and fecal incontinence	89	58.9
	Use bedside toilet-potty	25	16.6
Pressure Mattress Use Condition	Yes	53	35.1
	No	98	64.9
The situation of Giving Medical Dressing Training at Home Health	Yes	135	89.4
	No	16	10.6
Pressure Sore Stage	Stage 1-2	87	57.6
	Stage 2-3	33	21.9
	Stages 3-4	18	11.9
	Unstageable	13	8.6
TOTAL		151	%100

No significant correlation was found between Braden pressure ulcer risk assessment scores, gender, and diet (Table 2). However, there is a significant relationship between the groups according to the use and differences of nutritional products, urinary and fecal incontinence status, use of air mattresses, dressing replacement frequency, treatment type, and presence of chronic disease. As Braden risk scores increase, there is a significant increase in the use of enteral/oral nutrition products in patients. In particular, the use of nutritional products with high protein content increases significantly as Braden risk scores increase. When patients are evaluated according to the presence of chronic disease, individuals with neurological diseases are concentrated in high and very high-risk categories according to the Braden scale. Neurological disorders increase the risk of pressure ulcers significantly more than cardiovascular diseases and other chronic diseases. According to the Braden Risk Assessment Scale, patients with a high-risk level replace dressings more frequently, twice a day and every other day.

Table 2. *Braden Scale Results Based on the Demographic and Health Variables of the Patients*

Independent variables		**Severe Risk**		**High Risk**		**Moderate Risk**		**Mild Risk**		**None**		**X^2**	**Sd**	**P**
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**			
Gender	Male	14	36.8	14	33.3	3	13	14	35.9	3	33.3	0.713	2	0.700
	Female	24	63.2	28	66.7	20	87	25	64.1	6	66.7			
Nutritional Status	Oral	27	71.1	37	88.1	20	87	36	92.3	9	100	11.453	8	0.177
	PEG	6	15.8	4	9.5	1	4.3	1	2.6	0	0.0			
	NG	5	13.2	1	2.4	2	8.7	2	5.1	0	0.0			
Use of Enteral/Oral Nutrition Product	Yes	24	63.2	22	52.4	12	52.2	8	20.5	1	11.1	20.120	4	**0.000***
	No	14	36.8	20	47.6	11	47.8	31	79.5	8	88.9			
Type of Nutritional Product Used	Nutritional Product Rich in Protein Content	12	31.6	7	16.7	3	13	2	5.1	0	0.0	25.031	12	**0.015***
	Diabetic Nutrition Product	6	15.8	6	14.3	3	13	4	10.3	0	0.0			
	Balanced Nutrition Product	6	15.8	9	21.4	5	21.7	2	5.1	1	11.1			
	Not Use Nutritional Products	14	36.8	20	47.6	12	52.2	31	79.5	8	88.9			
Urinary and/or Fecal Incontinence Condition	Urine Catheter	13	34.2	12	28.6	4	17.4	7	17.9	1	11.1	39.589	8	**0.000***
	Urinary and Fecal Incontinence	23	60.5	28	66.7	18	78.3	18	46.2	2	22.2			
	Bedside Toilet-Potty	2	5.3	2	4.8	1	4.3	14	35.9	6	66.7			
Dressing replacement frequencies	More than 2 times a day	8	34.2	10	28.6	7	17.4	8	17.9	1	11.1	32.799	16	**0.008***
	Everyday	25	60.5	25	66.7	14	78.3	20	46.2	2	22.2			
	Once in 2 Days	4	5.3	4	4.8	2	4.3	9	35.9	6	66.7			
	1 Time per week	0	47.4	2	38.1	0	52.2	2	17.9	0	0.0			
	None	1	52.6	1	61.9	0	47.8	0	82.1	9	100			
Evaluation in Terms of the Product Used in Dressing (Medicine)	Adequate Treatment	25	89.5	26	61.9	15	65.2	16	41.0	2	22.2	10.555	4	**0.032***
	Inadequate Treatment	13	10.5	16	38.1	8	34.8	23	59.0	7	77.8			
Chronic Disease	Cardiovascular	2	5.26	6	14.29	2	8.7	6	15.38	2	22.22	28.345	12	**0.005***
	Neurological	34	89.47	31	73.81	19	82.61	24	61.54	2	22.22			
	Endocrine	1	2.63	4	9.52	2	8.7	8	20.51	3	33.33			
	Others	1	2.63	1	2.38	0	0.0	1	2.56	2	22.22			

**Chi-Square Analysis*

In Table 3, an increase in the use of enteral nutrition products was observed in patients with a high level of malnutrition risk. However, diabetic nutrition product no significant increase/decrease was observed in patients using protein-rich and a significant relationship between patients using balanced nutrition products and the MUST scale was found. In other words, patients with high-moderate malnutrition level increased intake of balanced and protein-intensive dietary supplements.
It was found that MUST scores were lower in patients who could use bedside toilet-potty. In addition, MUST scores increased in patients with urinary/fecal incontinence who were followed up with a catheter.

Table 3. *MUST Scale Results Based on the Demographic and Health Variables of the Patients*

Independent variables		**Low Malnutrition Risk**		**Moderate Malnutrition Risk**		**High Malnutrition Risk**		**X^2**	**Sd**	**P**
		N	**%**	**N**	**%**	**N**	**%**			
Gender	Male	15	31.9	11	37.9	22	29.3	0.713	2	0.700
	Female	32	68.1	18	62.1	53	70.7			
Nutritional Status	Oral	39	83	26	89.7	64	85.3	1.268	4	0.867
	PEG	5	10.6	1	3.4	6	8			
	NG	3	6.4	2	6.9	5	6.7			
Use of Enteral/Oral Nutrition Product	Yes	17	36.2	9	31	41	54.7	6.591	2	**0.037***
	No	30	63.8	20	69	34	45.3			
Type of Nutritional Product Used	Nutritional Product Rich in Protein Content	5	10.6	1	3.4	18	24	18.083	6	**0.001***
	Diabetic Nutrition Product	8	17	5	17.2	6	8			
	Balanced Nutrition Product	4	8.5	2	6.9	17	22.7			
	Not Use Nutritional Products	30	63.8	21	72.4	34	45.3			
Urinary and/or Fecal Incontinence Condition	Urine Catheter	13	27.7	5	17.2	19	25.3	10.381	4	**0.034***
	Urinary and Fecal Incontinence	21	44.7	18	62.1	50	66.7			
	Bedside Toilet- Potty	13	27.7	6	20.7	6	8			
Chronic Disease	Cardiovascular	7	14,89	3	10,34	8	10.67	10.916	6	0.091
	Neurological	29	61.7	19	65.52	62	82.67			
	Endocrine	8	17.02	5	17.24	5	6.67			
	Others	3	6.38	2	6.90	0	0.0			

**Chi-Square Analysis*

In Table 4, it is seen that patients who can use toilet-bedside toilets, have a high-income level, and replace dressing once a week have very low-Pressure Ulcer Scale for Healing (PUSH) scores.

Table 4. *Pressure Ulcer Recovery Rating (PUSH) Scale Results Based on the Demographic and Health Variables of the Patients*

		N	**RankAvg.**	
Urinary and/or Fecal Incontinence Condition	(1) Urine Catheter	37	82.73	(1,2) * **(1,3) *** **(2,3) *** KWH($X^{2)}$ = 16.915 Sd=2 **p=0.001**
	(2) Urinary and Fecal Incontinence	89	82.39	
	(3) Bedside Toilet- Potty	25	43.28	
	Total	151		
Level of Income	Subminimum rate	67	62.00	KWH($X^{2)}$=9.526 Sd=2 **p=0.009**
	Minimum wage	35	61.27	
	Above minimum wage	49	55.33	
	Total	151		
Dressing replacement frequencies	More than 2 times a day	33	73.56	(1,4) * (2,4) * (3,4) * KWH($X^{2)}$=20,014 Sd=4 **p=0,001**
	Everyday	89	85.05	
	Once in 2 Days	19	65.68	
	1 Time per week	7	18.64	
	None	3	33.50	
	Total	151		
Chronic Disease	Cardiovascular	18	70.11	KWH($X^{2)}$ = 1.593 Sd=3 p=0.661
	Neurological	110	78.70	
	Endocrine	18	68.03	
	Others	5	66.50	
	Total	151		

** Kruskal Wallis Test Analysis*

Discussion

In our study, pressure sores were detected in 3.69% of patients in the Home Health Services Unit. The data we analyzed were consistent with the literature. [5] The low incidence of pressure sores in our unit is thought to be the result of effective service, treatment and caregiver training.

According to World Health Organization (WHO) data, women tend to have longer life expectancies than men, and as life expectancy increases, the incidence of chronic diseases and the need for home health services also increase. [14] In the study, more than half of patients were women. Similar studies conducted in Turkey have found that the proportion of women receiving HHS ranges from 41.6% to 86.9%, with a higher proportion of female patients receiving HHS. [15,16]

The average age of the patients participating in the study was 78.29 years (78.28±14.51). When focusing on the group aged 85 years and older, it was found that 41 patients were women (74.55%), and 14 patients were men (25.45%). Similar age distributions have been observed in studies examining the population receiving home health services in Turkey. [1,17,18] Furthermore, international studies on home health services have also reported a prevalence of individuals aged 65 years and older receiving home care services, with figures as high as 83% in Austria, 78% in Germany, and 63% in the United States. [19]

The predominance of older adults in our study aligns with the established role of age as a contributing factor in the development of pressure sores. Numerous studies have indicated that the risk of pressure sores escalates with age due to reduced skin turgor pressure and alterations in the collagen structure of the skin. [20-22]

When we examined the correlation between PUSH scores and the income levels of the patients, a significant trend emerged: as the income level of the patients increased, the PUSH scores decreased, indicating less severe ulcers. This trend could be attributed to improved access to wound care products and better nutrition among patients with higher income levels. It's worth noting that while a majority of the patients had low-income levels, those with social security coverage may have had better access to healthcare services, which likely facilitated more thorough follow-up and treatment. This observation can be interpreted as a positive outcome for home health services.

When caregivers were categorized based on their level of proximity, the analysis revealed that 19.9% of patients were cared for by their spouses, while 68.9% received care from their first- and second-degree relatives. Furthermore, when examining the gender of caregivers, it was determined that 75.5% were female, and 24.5% were male. These findings align with similar patterns observed in previous studies. For instance, Adıgüzel et al. reported that 42.5% of care was provided by first-degree relatives and other family members, and in Zaybak et al.'s study, 24% of care was offered by spouses and 38% by children. [23,24] Given the prevalence of spousal loss in old age and the advanced age of surviving spouses, it's common for first- and second-degree relatives, such as children and siblings, to become more involved in-patient care.

In our study, it was observed that approximately half of the patients used enteral nutrition products, while 14.5% were administered nutrition through NG (Nasogastric)/PEG (Percutaneous Endoscopic Gastrostomy) methods. In a study conducted by Guduk et al. on home healthcare patients, it was found that 7% of patients were fed via NG/PEG, and 32% used enteral nutrition products. [25] The European Society for Clinical Nutrition and Metabolism (ESPEN, 2018) has reported that supplementing with oral/enteral nutrition products can expedite wound healing in patients with pressure sores and multiple chronic diseases. [26]

Existing literature has consistently shown that a patient's nutritional status plays a pivotal role in the development of pressure sores and tissue healing. [27-29] Moreover, our analysis revealed a significant correlation between the use of nutritional products and the Braden risk score. Specifically, as the Braden risk score increased, the utilization of nutritional products also significantly increased. Remarkably, among low-risk patients, 88.9% did not require nutritional supplements, whereas 11.1% used balanced nutritional products. Since the Braden scale is commonly employed to monitor patients registered with home healthcare units for pressure sores, the initiation of nutritional products as a supplement to high-risk patients underscores the effectiveness of healthcare services. In a study by Doran et al., it was also demonstrated that nutritional support substantially reduces the occurrence of pressure sores in patients with nutritional disorders. [30]

In our study, pressure sores were identified in the heel and sacral area in a majority of patients, specifically, 93.37%. When we examined the stages of these pressure sores, it was observed that 57.6% were categorized as Stage 1/2, 11.9% as Stage 3/4, and 8.6% as unstageable (necrotic). Among the 55 patients aged 85 and older, 29 of them (52.72%) were at Stage 1/2, while 15 (27.27%) were at Stage 2/3.

Comparing our findings with previous studies, Barzac et al. reported a Stage 1/2 pressure sore rate of 74%, Berquit et al. found that 49.1% were at Stage 1 and 50% were at Stage 2, and Akturk et al. observed that 12% of the patients had Stage 1 and 33% had Stage 2 pressure sores. [31-33] Generally, Stage 1/2 pressure sores are predominantly located in the heel and sacral area. [34]

We observed that a majority of patients assessed as high-risk according to the Braden scoring system had issues with urinary and fecal incontinence. Furthermore, it was determined that the risk of pressure sores was significantly lower in patients who used bedside toilets or commodes.

Interestingly, our data additionally revealed that, in comparison to patients who relied on bedside toilets and commodes, patients with urinary/fecal incontinence who were handled with catheterization had considerably higher PUSH ratings, indicating more severe pressure sores. This disparity is probably caused by the fact that, in comparison to bedridden patients with urine/fecal incontinence, individuals who are able to use bedside toilets or commodes usually have higher levels of mobility and sensory sensitivity, which gives them superior resistance against pressure. Another factor that lowers the likelihood of pressure sores is the comparatively shorter skin-to-urine and skin-to-feet contact time among users of bedside toilets or commodes.

Upon examining the distribution of chronic illnesses among the patients, a noteworthy trend emerged. The group of patients with neurological diseases was prominently concentrated within the high and very high-risk categories according to the Braden pressure sore risk scoring system. This finding aligns with existing literature, which consistently indicates that patients with neurological diseases face an elevated risk of developing pressure sores. [35]

Specifically, patients with cerebrovascular diseases are particularly vulnerable due to the substantial loss of motor and cognitive functions, as well as slower recovery progress. These factors result in longer periods of being bedridden. Moreover, the presence of sensory loss and an impaired ability to perceive pressure further contribute to the heightened risk in this patient population. [36]

In our unit, the use of the PUSH scale to assess wound severity and to monitor and plan treatment for patients with pressure sores has been a notable practice. This approach aligns with recommendations from USA National Pressure Ulcer Advisory Panel (NPUAP), which underscores the importance of healthcare professionals employing the PUSH scale to standardize the monitoring and treatment of pressure sores. [37]

Furthermore, an analysis of various sociodemographic characteristics of patients in relation to PUSH scores revealed intriguing insights. It was observed that as patients' income levels increased, and particularly among patients who were orally fed, there were lower PUSH scores, indicating less severe wounds compared to those fed through PEG and NG methods. Simultaneously, the use of high-protein nutritional products was linked with more severe and larger pressure sores. This is expected since high-protein nutrition is a crucial component of pressure sore treatment. Consequently, these findings underscore the importance of initiating appropriate nutritional supplementation, especially for patients with stage 3-4 pressure sores.

Conclusion

In our study, the incidence of pressure sores was found to be low. Although the prevalence of pressure sores is low, it is an important health problem that affects the morbidity and mortality of individuals.

Among the various factors contributing to the etiology of pressure sores, advanced age and the presence of neurological diseases in patients emerge as the most critical. Notably, 36.4% of our patients were aged 85 and older, with 74.55% of them being female. Pressure sores predominantly manifest in the heel and sacral areas, often at stage 1/2. Given that these sores typically develop in regions subjected to prolonged pressure, there is an opportunity for caregiver education aimed at preventing their formation.

Within the scope of our services, our teams must assess wound status, evaluate nutritional adequacy, and identify risk factors for patients with pressure sores during their initial encounters. This proactive approach is essential for preventing new wounds and enhancing the quality and efficiency of the care provided. Therefore, the inclusion of forms containing PUSH, MUST, and Braden scores—tools we utilized—in the record-keeping process within our units, along with their comprehensive completion and regular follow-up assessments, becomes crucial for improving the overall effectiveness and quality of our services. It's noteworthy that our study contributes to the literature, as there is limited research on the application of the PUSH scale in our country.

The limitation of our study is that it was conducted on patients who were registered in the Home Health Services Unit of a Training and Research Hospital in Izmir. It cannot be generalized to all home health care patients. However, studies that be conducted on a wider population regarding pressure sores, which are considered an important public health issue, would be informative for the prevention and treatment of this pathology.

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