

Evaluation of Nutritional Status and Pressure Sores of Elderly Patients Admitted to Home Health Care Services

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ABSTRACT

Aim: The aim of this study was to evaluate the nutritional status and decubitus status of elderly patients who applied to the Home Health Care Service at a training and research hospital and to determine the relationship between them.

Methods: The study was a descriptive and cross-sectional study that was conducted face-to-face with 364 elderly patients who matched the inclusion criteria. The Malnutrition Universal Screening Tool (MUST) screening test was used to measure the presence of malnutrition and was classified in three categories as low, medium and high risk. Physical examination was performed to detect the presence of pressure sores.

Results: Among the participants 30 patients (8.24%) had pressure sores and 113 of them (31.04%) had malnutrition. A positive relationship was found between nutritional deficiency and pressure sores. Malnutrition risk was determined using the MUST and 69.00% of the patients carried low risk, 25.80% carried medium risk and 5.20% carried high risk. There was a statistically significant difference between the number of people living with the patient at home, the duration of home health care and the duration of pressure sores ($p < 0.05$). While there was no relationship between malnutrition and gender, income and educational status, a significant difference for age, marital status, caregiver presence, chronic disease and pressure sores was observed.

Conclusions: Pressure sores and malnutrition are not rare among the elderly patients admitted to Home Health Care Services and they are interrelated. Effective policies need to be established, implemented and monitored to prevent malnutrition and pressure sores. Home care providers and family doctors should take these situations into account when visiting patients at home.

Keywords: Home health care, malnutrition, MUST, pressure sore

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Received: March 14, 2022, 2021; **Accepted:** April 28, 2022; **Published Online:** April 30, 2022

Cite this article as: Bekar, A. H. & Tuncer, O. (2022). Evaluation of Nutritional Status and Pressure Sores of Elderly Patients Admitted to Home Health Care Services. *European Journal of Human Health* 2(1), 19-26.



Introduction

The general characteristics of patients who request service from the Home Healthcare Unit are that they have multimorbidity, decreased intellectual capacity, cannot provide self-care and are home or bed dependent. Although pressure ulcers are common in these patients, the presence of malnutrition is one of the most important factors that cause pressure ulcers to occur and increase.

Pressure sores are wounds mostly in the areas of bony prominence, in which blood supply to the skin and subcutaneous tissues is blocked or deteriorated. Tissue death occurs due to contact and friction of the bed surface and body areas, with excessive and long-term pressure exposure of the soft tissue (1). Pressure sores are tissue damage to the skin and subcutaneous tissue that can be seen at different levels from redness to full-thickness tissue loss. A period of two hours is sufficient for the development of tissue damage in areas in contact with the surface. This is why changing positions every two hours and good home health care are important.

In order to prevent and treat pressure ulcers in the most effective way, it is necessary to understand the risks causing pressure ulcers and plan and implement measures for prevention. In the literature, it has been shown that nutritional deficiencies play an important role in the formation and healing of pressure ulcers. Low serum albumin levels and vitamin deficiencies facilitate the occurrence of pressure ulcers. In patients with pressure ulcers, it is recommended that nutritional meals contain 1–1.5 g of protein per kilogram. In addition, deficient or low fluid intake also facilitates the formation of pressure ulcers (2).

Malnutrition is a clinical condition resulting from inadequate nutrition in terms of content or amount, and insufficient energy and nutrients provided despite

the body's needs. In the society, the elderly are in the high risk group in terms of malnutrition (3). The incidence of malnutrition varies according to the place where elderly individuals receive care. Malnutrition was found to be 8-13% in the elderly living at home, 19-39% in those staying in an elderly care institution, and 30-90% in the elderly who were hospitalized. Malnutrition occurs as a loss of body weight and muscle density, especially in the elderly who require care. In the recommendations of ESPEN (European Society of Clinical Nutrition and Metabolism), published in 2002, it is recommended that not only those who need home care services, but also all individuals aged 65 and over should be screened routinely in terms of nutrition (4). Similar recommendations are included in all ESPEN Guidelines published in the subsequent years. For these reasons, many malnutrition screening tools have been developed in the last decade. One of the most commonly used malnutrition screening and evaluation tools is the Malnutrition Universal Screening Tool (MUST) (5).

In this study, in light of the relevant literature, we aimed to evaluate the nutritional status and decubitus status of elderly patients who received home health services and to determine the relationship between them.

Methods

This study was conducted to cross-sectionally examine patients aged 65 and over who applied to the Bozyaka Training and Research Hospital Home Health Service between 12/02/2020 and 30/06/2020. The criteria for inclusion in the study were to apply to the home health unit during this time and to be fed orally. Sociodemographic information of the patients was recorded and their consent was obtained. The presence of pressure sores was inquired and they

were asked to answer the MUST screening test questions. A total of 364 individuals who met the inclusion criteria were included in the study. The MUST screening test was used to measure the presence of malnutrition and it was classified into three categories as low, medium and high risk. MUST is a three-stage screening test developed to screen the nutritional status of elderly individuals. Body mass index is questioned in the first stage, unexpected body weight loss in the second stage, and acute illness in the third stage. For the descriptive analyses of the study, a database was created in the SPSS 21.0 (Statistical Package for the Social Sciences) program, and the frequency, percentage, mean and standard deviation values of the data were calculated. It was determined that these variables did not show normal distribution with the skewness coefficient analysis of Kolmogorov Smirnov and Fisher's normal distribution.

The Kruskal-Wallis test, one of the non-parametric tests, was used to statistically examine the relationship between the dependent variables, the MUST scale, and the measurement type variables such as age, number of people staying in the home, duration of receiving home health care, and presence of pressure sores.

The presence of malnutrition was evaluated in two categories according to the MUST screening test: no malnutrition in low-risk patients and malnutrition in moderate and high-risk patients. The chi-square test was applied to examine the relationship between categorical variables. For all analyses, $p < 0.05$ was accepted as significant.

Ethics committee approval for the study was obtained with the decision of the Bozyaka Training and Research Hospital Scientific Research Ethics

Committee, dated 12.02.2020 and numbered 08. In addition, written consent was obtained from the participants in the study.

Results

The group with the highest percentage among the patients participating in the study was between the ages of 75-84 and constituted 39% of the whole group. The mean age of the participants was 79.12 ± 8.062 (min: 65- max: 97). More than half of the participants (58.8%) were women.

Considering the education level, it is seen that most of the patients were primary school graduates with a rate of 91.8%. Those with a monthly income between 1500-3000 TL were 76.6%. About half of the patients were housewives. Among the patients receiving home health services, 98.1% of them regularly used medication, while 97.5% of them had a caregiver relative. 30 (8.2%) of 364 people who participated in the study had pressure sores.

96.8% of the participants had chronic diseases. Hypertension was observed in 47.8%, cardiovascular disease in 35.7%, Diabetes Mellitus in 26.4%, cerebrovascular disease in 15.4% and COPD in 11.5% of participants.

There was no statistically significant difference between age, education level, marital status, income, presence of caregivers, regular drug use, presence of chronic disease and pressure ulcers.

In this study, according to the responses given to the MUST screening test, 69.0% of individuals were low-risk, 25.8% were medium-risk and 5.2% were high-risk.

Table1. General characteristics of the participants and pressure sores

General Characteristics		Pressure Sores		
		Yes	No	p- value
Sex	Female	21	193	0.19
	Male	9	141	
Age (years)	65-74	9	102	0.99
	75-84	12	130	
	≤ 85	9	102	
Income	<3000 TL	21	262	0.19
	≥3000 TL	9	72	
Marital Status	Married	15	163	0.90
	Single	15	171	
Education	Primary School	27	307	0.71
	High School	3	27	
Caregiver	Yes	30	325	0.36
	No	0	9	
Medication usage	Yes	30	327	0.42
	No	0	7	

According to the MUST screening test, the presence of malnutrition was evaluated in two categories: no malnutrition in low-risk patients and malnutrition in moderate and high-risk patients. When the results of the chi-square test, which was done to examine the relationship between the presence of malnutrition according to sociodemographic characteristics of the

patients receiving home health care, were examined: while no relationship was found for gender, income and educational status, a significant difference was observed for age, marital status, presence of caregivers, chronic disease and pressure sores. According to this, there was a significant relationship between those who do not have any chronic disease,

no pressure sores, those who have a caregiver, and those who are single and with an absence of malnutrition. The presence of malnutrition was more common in people older than 85 years of age.

According to the MUST screening test of the participants, there was a statistically significant

difference between the number of people at home, the duration of receiving home health services and the duration of pressure sores. Accordingly, the risk of malnutrition increased as the duration of receiving home health care increased, while the risk of moderate malnutrition increased as the number of people at home and the duration of pressure ulcers increased.

Table2. General characteristics of the participants and malnutrition

General Characteristics		Malnutrition		
		No	Yes	p-value
Sex	Female	153	61	0.21
	Male	98	52	
Age	65-74	72	39	0.03
	75-84	109	33	
	≥ 85	70	41	
Income	<3000 TL	201	82	0.11
	≥3000 TL	50	31	
Marital Status	Married	114	64	0.04
	Single	137	49	
Education	Primary School	231	103	0.77
	High School	20	10	
Caregiver	Yes	242	113	0.04
	No	9	0	
Chronic Disease	Yes	243	113	0.04
	No	8	0	
Pressure Sore	Yes	7	23	0.00
	No	244	90	

Discussion

Among the participants 30 patients (8.24%) had pressure sores and 113 of them (31.04%) had malnutrition. A positive relation is found between nutritional deficiency and pressure sores. There was a statistically significant difference between the number of people who is living with the patient at home, the duration of home health care, and the duration of pressure sore. While there is no relation between malnutrition and gender, income and educational status, a significant difference between age, marital status, caregiver presence, chronic disease and pressure sore is observed.

Pressure sores were detected in 8.24% of the participants included in the study. In the study conducted by Şahin et al. in 2017 with patients admitted to the home care unit of a training and research hospital in Ankara, the prevalence of pressure ulcers was found to be 22.8% (6). Niezgodna et al. reported that the prevalence of pressure ulcers in home care patients varies between 0% and 29% (7). In this study, we think that, unlike the literature, less pressure ulcers were seen due to home care services, which are effective in preventing pressure ulcers, and that the auxiliary health care personnel give priority to preventive services.

There was no statistically significant relationship between the presence of any chronic disease and pressure sores among the participants. While the presence of diabetes is expected to be a risk for pressure ulcers due to the effect of diabetes on wound healing, McMahon reports that controlled diabetes does not have a negative effect on the wound (8). However, with the fact that there was no relationship between chronic diseases and pressure sores in this study, it should be taken into account that the study group consisted of patients receiving home health care

services, routine controls were carried out, and therefore their diseases were under control.

In this study, the presence of malnutrition was examined with the MUST screening test. According to MUST, 69.0% of individuals were found to be low risk, 25.8% medium risk and 5.2% high risk. In the literature review of Guigoz, the prevalence of malnutrition in the elderly receiving home care was reported as 9% and the risk of malnutrition as 45% (9). In the malnutrition study conducted in hospitalized patients, 72% were found to be low risk, 15% medium risk and 13% high risk (10). In this study, it can be said that the risk of malnutrition was at lower levels compared to that report.

According to the results of this study, it was seen that those who did not have pressure sores were mostly in the low risk group. The results of the study conducted by Yeniçağ to evaluate the relationship between malnutrition and the development and severity of pressure ulcers in patients receiving home care services are similar to this study (11). And, consistent with the literature, the presence of pressure sores was found to be less in the malnutrition groups that we evaluated according to the MUST risk classification in this study, as well as in the low-risk group (12).

In this study, we determined that the risk of malnutrition increased as the number of people in the house increased. The relationship between the number of people in the house and the risk of malnutrition is significant, as the increase in the number of people in the house will reduce the amount of food per capita that our working group, which has a certain economic income, can reach. It was reported that as the number of people in the house increases, nutrition is negatively affected (13).

In this study, it was observed that the risk of moderate malnutrition increased as the pressure ulcer duration

increased. The positive relationship between the increase in the current pressure sore duration of the patients and the increase in the risk of malnutrition is also an expected situation (14).

When we look at the relationship between the presence of a caregiver and malnutrition, we found a significant relationship between those who had a caregiver and the absence of malnutrition. Akan et al., in their study examining the nutritional status of elderly patients who applied to the home health unit, found that both the risk of malnutrition and the presence of malnutrition were higher in those who provided their own care, that is, in the absence of a caregiver (15). It is known that living alone for elderly individuals is a risk factor for malnutrition.

In conclusion, we observed in this study that there was a significant relationship between pressure ulcer status and nutrition. The majority of those included in the study consisted of individuals aged 85 and over. In order to prevent the development of pressure ulcer lesions it is necessary to identify pressure ulcers in the early period and to make differential diagnosis of other lesions. Preventing the formation of pressure ulcers is a much healthier and more economical method for both families and the country compared to treatment applied after the wounds occur. For this reason, it is very important to observe the skin frequently and take the necessary protective measures, especially in home health patients at risk, and to regulate nutrition by taking into account the relationship between nutrition and pressure ulcers, which is also an important finding of this study.

Disclosure of conflict of interest

None of the author has any conflict of interest to disclose.

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