

Chronic Wound Management in Geriatric Patients; A Case of Home Care Services

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Abstract

Objective: Chronic wounds are a major health problem in the geriatric population and often lead to reduced quality of life and increased healthcare costs. To evaluate the impact of chronic diseases and nutritional status on pressure ulcer development in individuals over 65 years of age enrolled in home care services.

Methods: This study was conducted between 15.12.2022 - 15.01.2023 at Giresun Training and Research Hospital. Individuals registered to the Home Care Services (HCS) and aged 65 years and over were included. Sociodemographic characteristics, medical history, Nutritional Risk Screening (NRS-2002), Visual pain scale, Braden Pressure ulcer risk scale and a scale to analyze wound staging were applied.

Results: The mean age of the 76 patients included in the study was 83.64±8.11 years. 80.3% of the patients were female, 86.8% needed medical care. 52.6% received HCS for neurologic, 36.8% for cardiovascular and 7.8% for respiratory diseases. When nutritional risk status was analyzed, 40.8% had a primary assessment as a result of the preliminary assessment. According to the main assessment result, 97.4% of the patients had nutritional risk. As a result of physical examination, wounds were detected in 16% of the patients. Considering the risk of pressure ulcer development, 6.8% of the patients were at high risk, 21.6% were at medium risk and 35.1% were at low risk. The mean Braden pressure scale score was 16.86±3.03. Only one of the participants described moderate pain.

Conclusion: Effective management of chronic wounds in geriatric patients requires a comprehensive and multidisciplinary approach that addresses the underlying causes, promotes wound healing, and prevents complications.

Key Words: Pressure ulcer, Geriatric individuals, Home care services

Geriatrik Hastalarda Kronik Yara Yönetimi; Bir Evde Sağlık Hizmetleri Örneği

Özet

Amaç: Kronik yaralar geriatrik popülasyonda önemli bir sağlık sorunudur ve sıklıkla yaşam kalitesinin düşmesine ve sağlık bakım maliyetlerinin artmasına neden olur. Evde bakım hizmeti alan 65 yaş üstü bireylerde kronik hastalıkların ve beslenme durumunun bası yarası gelişimine etkisini değerlendirmek.

Gereç ve Yöntem: Bu çalışma 15.12.2022 - 15.01.2023 tarihleri arasında Giresun Eğitim ve Araştırma Hastanesi'nde yapılmıştır. Evde Sağlık Hizmetlerine (ESH) kayıtlı ve 65 yaş ve üstü bireyler dahil edildi. Sosyodemografik özellikler, tıbbi öykü, Nutrisyonel Risk Taraması (NRS-2002), Görsel ağrı skalası, Braden Bası ülseri risk skalası ve yara evrelemesi değerlendirme skalası uygulandı.

Bulgular: Çalışmaya alınan 76 hastanın yaş ortalaması 83,64±8,11 idi. Hastaların %80,3'ü kadındı, %86,8'i tıbbi bakıma ihtiyaç duyuyordu. %52,6'sı nörolojik, %36,8'i kardiyovasküler ve %7,8'i solunum yolu hastalıkları nedeniyle SKS almıştır. Beslenme risk durumu incelendiğinde %40,8'i ön değerlendirme sonucunda birincil değerlendirmeye sahipti. Ana değerlendirme sonucuna göre hastaların %97,4'ünde beslenme riski vardı. Fizik muayene sonucunda hastaların %16'sında yara tespit edildi. Hastaların bası ülseri gelişme riskine bakıldığında %6,8'i yüksek, %21,6'sı orta ve %35,1'i düşük risk taşıyordu. Ortalama Braden basınç skalası skoru 16.86±3.03 idi. Katılımcılardan sadece biri orta derecede ağrı tanımlamıştır.

Sonuç: Geriatrik hastalarda kronik yaraların etkili yönetimi, altta yatan nedenleri ele alan, yara iyileşmesini destekleyen ve komplikasyonları önleyen kapsamlı ve multidisipliner bir yaklaşım gerektirir.

Anahtar Kelimeler: Bası yarası, Geriatrik bireyler, Evde bakım hizmetleri

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INTRODUCTION

The World Health Organization (WHO) defines home care as activities that require the support of family, relatives or health, social and other specialists in using personal preferences and ensuring the continuity of life, who are not capable of providing their own personal care and maintaining their quality of life (1). According to the Regulation on the Provision of HCS in the Republic of Turkey, it is defined as "Providing examination, examination, analysis, treatment, medical care, follow-up and rehabilitation services, including social and psychological counseling services at home and in the family environment to individuals who need home health care services due to various diseases" (2). In addition to geriatric care centers, it is recommended to provide on-site care services to the elderly in the home environment where they live (3). The importance of HCS is increasing due to the increasing number of chronic diseases in the world and in Turkey (4).

Today, chronic wounds are called the "silent epidemic" (5). Chronic wounds can be caused by

a range of poor health conditions (cardiovascular disorders, diabetes and cancer etc.).(6) They are classified into four categories: arterial, diabetic, pressure and venous ulcers (7) Impact the quality of life and the management of wounds has a significant economic impact on health care (8).The cost of treatment of pressure ulcers alone in the USA is estimated to be 25 billion dollars per year (6). Economic benefits can be derived from strategies that focus on accurate diagnosis, infection prevention and improving wound healing rates to manage the increasing burden of care (9).

Chronic wounds are a major health problem in the geriatric population, often leading to reduced quality of life and increased healthcare costs. Effective management of chronic wounds in geriatric patients requires a comprehensive and multidisciplinary approach that addresses underlying causes, promotes wound healing, and prevents complications. This article aims to evaluate the impact of chronic diseases and nutritional status on pressure ulcer development in individuals over 65 years of age enrolled in HCS.

METHODS

This descriptive study was conducted with patients aged 65 years and older (n=76) who

received home care in our hospital between December 2022 and January 2023. Patients who received HCS temporarily were not included in the study. No sample selection was made in the study and 76 patients who met the inclusion criteria and volunteered to participate in the study were included in the study.

Data Collection: We collected the demographic (Age, Gender, Medical care needs, Bed dependency, Chronic diseases, Nutritional status, Urinary catheterization, etc.), Braden's Pressure sore risk scale(10) and verbal pain scale (11) and Nutritional Risk Screening (NRS-2002)(12). In addition, the presence, stage, appearance and site of the wound were determined by physical examination. The wound condition was assessed. Occipital region, ears, nape of the neck, nose, lips, back, scapula, spinous process, breast, costae, elbow, iliac crest, sacrum, trochanter, ischium, gluteal region, extergenital, uston, external-internal knee, lower leg, Achilles tendon, feet, medial foot, heel, internal-external malleolus, plantar surface, toes, arm, hand and tracheostomy site were evaluated for the presence of wounds.

Braden Pressure ulcer risk assessment scale

The Turkish validity and reliability study of the scale developed by Braden et al. (10) in 1989 was conducted by Oğuz et al. (13) in 1998. The scale evaluates the factors of stimulus perception, humidity, activity, movement, nutrition, friction and irritation, with a minimum score of 6 and a

maximum score of 23. Factors other than friction and irritation are scored between 1-4, while the friction and irritation factor is scored between 1-3. A low total score indicates a high risk of developing pressure sores. In addition, ≤ 12 is classified as high risk; 13-14 as medium risk; 15-16 as low risk (15-18 for those over 75 years of age); >16 as no risk (>18 for those over 75 years of age).

Pressure ulcers are analyzed in 4 stages, ranging from mild redness to complete skin loss (14).

Nutritional Risk Screening (NRS-2002) (12) is a screening system developed by Kondrup et al. based on retrospective analysis of randomized controlled trials. It was developed based on the fact that the indication for nutritional support is related to the severity of the disease and the degree of malnutrition. In addition to weight loss, body mass index and oral intake, it is a system that questions the severity of the disease and includes age in the scoring. NRS-2002 is a screening test recommended for use in inpatients by the European Society for Clinical Nutrition and Metabolism.

In 2014, Bolayır B. conducted the Turkish validity and reliability of the scale (15). This screening tool aims to determine the malnutrition levels and malnutrition risk rates of individuals. In this scale, a preliminary screening test is first applied to individuals. In the main screening part of the scale, the irregularity in the nutritional

status of individuals and the severity of the disease are measured. According to the percentage of weight loss, irregularity in nutritional status is evaluated as none (0 points), mild (1 point), moderate (2 points) and severe (3 points). The severity of the disease is assessed in a similar way to dietary irregularity: none (0 points), mild (1 point), moderate (2 points) and severe (3 points). The scores from the main screening section are summed and if the individual is over 70 years of age, an additional 1 point is added due to age to obtain a total score. If the total score is 3 or above, the patient is considered to have a nutritional risk and a nutritional plan is implemented; if the total score is below 3, the screening test is repeated periodically.

The visual pain scale (11) is based on a variety of visually depicted facial expressions. The use of facial expressions to measure pain intensity was first developed for use among children. It was later validated for use in adults, the elderly and the cognitively impaired patient population.

Statistical Analysis: The obtained data were analyzed in the Statistical Package for the Social Sciences (SPSS) version 25.0 package program. Descriptive findings were presented with frequency and percentage distributions n (%). Chi-square test was used in the analysis of qualitative data. Statistical significance was evaluated at the $p < 0.05$ level.

The mean age of the 76 patients included in the study was 83.64 ± 8.11 years. 80.3% of the patients were female and 86.8% needed medical care. When bed dependency rates were analyzed, 46.1% were fully dependent and 48.7% were semi-dependent. Of the elderly, 52.6% receive home health care services for neurological, 36.8% for cardiovascular and 7.8% for respiratory diseases. 6.6% of the patients were fed by peg, 5.3% by nasogastric feeding and 17.1% used urinary catheters. Only one of the participants described moderate pain (Table 1).

According to the results of the main assessment, the person with nutritional risk was found to be 97.4% (Table 2).

Physical examination revealed wounds in 16% of the patients. The integrity of 73.1% of the wounds was intact and 66.7% had a pink appearance. When the risk of pressure sore development was analyzed, 6.8% of the patients were at high risk, 21.6% were at medium risk and 35.1% were at low risk. The mean score on the Braden pressure scale was 16.86 ± 3.03 (minimum 10, maximum 23) (Table 3).

When the wound sites were evaluated, there was one person with a wound on the scapula (stage 3), one person with a wound on the sacrum (stages 1 and 2), two people with a wound on the trochanter region (stages 1 and 3), four people with a wound on the gluteal region (two in stage 1 and two in stage 3), two people with a wound

RESULTS

on the feet (stage 1), and two people with a wound on the heels (stages 1 and 2).

Table 1. Socio-demographic, nutritional and chronic disease characteristics of the patients

Socio-demographic of the patients	n (%)
Age (<i>ort.±ss=83,64±8,11</i>)	
≤83	34 (44,7)
>83	42 (55,3)
Gender	
Woman	61 (80,3)
Male	15 (19,7)
Medical care needs	
Yes	66 (86,8)
No	10 (13,2)
Bed dependency	
Fully dependent	35 (46,1)
Semi-dependent	37 (48,7)
Independent	4 (5,3)
Chronic disease requiring home health care services	
Neurological diseases	40 (52,6)
Cardiovascular diseases	28 (36,8)
Chest diseases	6 (7,8)
Other	18 (23,6)
Nutrition	
Oral	71 (93,4)
Peg	5 (6,6)
Nasogastric	4 (5,3)
Urinary catheter	
Yes	13 (17,1)
No	63 (82,9)
Services provided within the scope of home health	
Catheter application	8 (10,5)
Catheter maintenance	4 (5,3)
Hygiene	52 (68,4)
Other	
Drug use	
1	3 (3,9)
2	6 (7,9)
3	6 (7,9)
4	8 (10,5)
>4	50 (65,7)
Pain status	
No	75 (98,7)
Present (moderate pain)	1 (1,3)

Table 2. Nutritional risk assessment results of the participants

Nutritional Risk Score	n (%)
Pre-assessment	
Yes	45 (59,2)
No.	31 (40,8)
Main assessment	
≥3 points	74 (97,4)
<3 points	0

Table 3. Characteristics related to wound conditions

Wound conditions	n (%)
Wound presence	
Yes	13 (17,10)
No	63 (82,9)
Wound Degree	
1. Reddened area	3 (23,1)
2. Leather opened	9 (69,2)
3. Subcutaneous destruction	1 (7,7)
4. Muscle and bone tissue damage	
Wound Observation	
Pink	10 (66,7)
Granulation tissue	3 (33,3)
Risk of pressure sore development (mean ±ss.=16.86±3.03)*	
High risk	16 (21,6)
Medium risk	26 (35,1)
Low risk	27 (36,5)
No risk	
Wound sites	
Scapula (stage 3)	1 (1,3)
Sacrum (stage 1 and 2)	2 (2,6)
Trochanter (stages 1 and 3)	2 (2,6)
Gluteal region (stages 1 and 3)	4 (5,2)
Feet (stage 1)	2 (2,6)
Heel (stages 1 and 2)	2 (2,6)

* It was assessed with the Braden Pressure sore risk scale.

DISCUSSION

As the elderly population increases, the clinical and socioeconomic burden of non-healing skin wounds also increases, thus increasing the importance of studies on how aging affects wound healing (8). Delayed wound healing in an aging population, especially since most chronic wounds occur in this population, more emphasis should be placed on understanding the causes and preventing them

(16). After a skin injury, a complex process involving biochemical and mechanical events begins to coordinate the stages of hemostasis, inflammation, proliferation and remodeling that must occur for the wound to heal (17). Chronic and non-healing wounds, if left untreated and not managed appropriately, can lead to significant medical problems such as infection, sepsis, the need for limb amputation and even death (18).

The reasons for impaired skin integrity and increased incidence of pressure sores in elderly patients are decreased turgor tone, loss of skin elasticity, changes in immunologic mechanisms and decreased sensitivity to touch (17). In a study conducted in Kayseri province, the mean age of people receiving home care services was reported as 76 ± 18.4 years. Patients aged 65 years and over (78.9%) were the most common (18). In our study, the mean age of the patient was 83.64 ± 8.11 years. Similar to the literature, the proportion of elderly patients was higher in our study. This may be related to the long-life expectancy and the advanced age of the patients receiving HCS.

In accordance with the literature, pressure ulcers were observed in the gluteal and sacrum region in most of our patients (19). When the bed dependency rates of our patients were analyzed, 46.1% were fully dependent and 48.7% were semi-dependent. It may be due to the lack of mobility that occurs due to cerebrovascular events or in many conditions such as dementia

(20). In our study, it was found that the majority of pressure sores were Stage 1 (73.1%) with redness that did not fade with pressure but skin integrity was intact. It shows the importance of home health services in taking precautions by determining the risk factors against pressure ulcer in the early period.

Special attention should be paid to geriatric health in order to maintain proper nutritional habits, the health status of the elderly population and to reduce the prevalence of chronic diseases (21). Elderly individuals at risk of pressure ulcers or with pressure ulcer who have developed malnutrition and/or are at risk of malnutrition should be evaluated with multidisciplinary teamwork (22). In a multicenter cross-sectional study of 1412 patients aged 70 years and older with pressure injury (risk), it was reported that nutritional care was inadequate in elderly patients (23). In our study, in accordance with the literature, 40.8% of elderly individuals were found to be at risk of malnutrition in the preliminary evaluation of nutritional risk status and 97.4% of the elderly who were found to develop malnutrition in the main evaluation were provided with nutritional support. If the daily calorie requirements of elderly individuals cannot be met orally and the existing pressure sores in the individual cannot be closed, enteral or parenteral nutrition interventions should be considered. Pressure ulcer can be defined as wounds that progress to skin, tissue and even

bone as a result of decreased blood circulation due to immobility and constant pressure, leading to skin necrosis. (23). In a study evaluating the risk of pressure ulcer in patients with cerebrovascular disease using the Braden Risk Assessment Scale, it was reported that 51.9% of the patients had a very high risk of pressure ulcer and 22.1% had a borderline risk (24). When pressure ulcer were evaluated in this study, it was found that 6.8% were at high risk, 21.6% were at moderate risk, and 35.1% were at low risk, which is consistent with the literature. Nutritional support and timely identification of the factors that cause pressure ulcer formation and taking preventive measures are important in the monitoring of elderly and frail individuals.

CONCLUSION

The management of chronic wounds in geriatric patients requires a comprehensive and individualized approach that addresses the unique challenges faced by this population. By combining assessment, appropriate wound care techniques, infection control, nutritional optimization, pain management and regular monitoring, healthcare providers can improve wound healing, reduce complications and improve the overall well-being of geriatric patients.

Ethical Committee Approval: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Ethics

Committee of the University of Health Sciences, Ordu, Turkey (date of approval: 09/12/2022 and decision no: 285). Permission was obtained from the provincial Health Directorate (E-53593568-929-9505) Informed consent was obtained from all subjects involved in the study.

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REFERENCES

1. Taşdemir R. Oğuzöncül AF. Evaluation of Illness Status and Socio-demographic Characteristics of Individuals Given Home Health Care. *Journal of Performance and Quality in Health*. 2019;17(2):11–28.
2. Prime Ministry Legislation Development and Publication General Directorate. Regulation on the Delivery of Home Care Services. Ankara, 10.03.2005; Official Gazette:URL: <https://www.resmigazete.gov.tr/eskiler/2015/02/20150227-14.htm> (ET: 01.10.2023)
3. Enginyurt Ö.Öngel K. Sociodemographic characteristics and medical conditions of

- patients in home care service. *Smyrna Medical Journal*. 2012;2(1):45–8.
4. Uçkuş P, Yıldırım T. Evaluation of Quality of Life of Individuals aged 65 and over who receive home health services. *Hacettepe Journal of Health Administration*, 2021;24(2):319-334.
 5. Lo SF, Chuang ST, Liao PL. [Challenges and Dilemmas of Providing Healthcare to Patients in Home Care Settings With Hard-to-Heal Wounds]. *Hu Li Za Zhi*. 2021;68(4):89-95. Chinese. doi: 10.6224/JN.202108_68(4).11. PMID: 34337707.
 6. Cross K, Harding K. Risk profiling in the prevention and treatment of chronic wounds using artificial intelligence. *Int Wound J*. 2022;19(6):1283-1285. doi:10.1111/iwj.13952.
 7. Bowers S, Franco E. Chronic Wounds: Evaluation and Management. *Am Fam Physician*. 2020;101(3):159-166.
 8. Sen CK. Human Wound and Its Burden: Updated 2020 Compendium of Estimates. *Adv Wound Care (New Rochelle)*. 2021;10(5):281-292. doi:10.1089/wound.2021.0026.
 9. Guest JF, Fuller GW, Vowden P. Cohort study evaluating the burden of wounds to the UK's National Health Service in 2017/2018: update from 2012/2013. *BMJ Open*. 2020;10(12):e045253. Published 2020 Dec 22. doi:10.1136/bmjopen-2020-045253
 10. Braden BJ, Bergstrom N. Clinical utility of the Braden Scale for predicting pressure sore risk. *Decubitus* 1989; 2: 44-51.
 11. Jastrzab G, Kerr S, Fairbrother G. Misinterpretation of the Face Pain Scale-Revised in adult clinical practice. *Acute Pain*. 2009;11(2):51-5.
 12. Kondrup J, Allison SP, Elia M, Vellas B, Plauth M, Educational and Clinical Practice Committee ErSoPaENE. ESPEN guidelines for nutrition screening 2002. *Clin Nutr*. 2003;22(4):415-421.
 13. Oğuz S, Olgun N. Determining the risks of patients with the Braden Scale and determining the effectiveness of planned nursing care in the prevention of pressure ulcers. *Nursing Forum*, 1998;1(3):131-135.
 14. Kottner J, Halfens R, Dassen T. An interrater reliability study of the assessment of pressure ulcer risk using the Braden scale and the classification of pressure ulcers in a home care setting. *Int J Nurs Stud*. 2009;46(10):1307-1312. doi:10.1016/j.ijnurstu.2009.03.014.
 15. Bolayır B. Evaluation of the validity and reliability of the nutritional assessment test NRS2002 (Nutritional Risk Screening-2002) in hospitalized patients. Unpublished Specialization Thesis, 2014, Hacettepe University, Faculty of Medicine, Department of Internal Medicine, Ankara
 16. Blair MJ, Jones JD, Woessner AE, Quinn KP. Skin Structure-Function Relationships

- and the Wound Healing Response to Intrinsic Aging. *Adv Wound Care (New Rochelle)*. 2020;9(3):127-143. doi:10.1089/wound.2019.1021
17. Wilkinson HN, Hardman MJ. Wound healing: cellular mechanisms and pathological outcomes. *Open Biol*. 2020;10(9):200223. doi:10.1098/rsob.200223.
18. Nussbaum SR, Carter MJ, Fife CE et al. An Economic Evaluation of the Impact, Cost, and Medicare Policy Implications of Chronic Nonhealing Wounds. *Value Health*. 2018;21(1):27-32. doi:10.1016/j.jval.2017.07.007
19. Demirci Şahin A, Seyrek S, Ertürk A et al. Pressure Sores in Home Care Patients and Demographic Characteristics of the Patients. *Konuralp Medical Journal* 2017;9(1):14-18. doi:10.18521/ktd.286610
20. Parker CN, Finlayson KJ, Edwards HE, MacAndrew M. Exploring the prevalence and management of wounds for people with dementia in long-term care. *Int Wound J*. 2020;17(3):650-659. doi:10.1111/iwj.13325
21. Black M, Bowman M. Nutrition and Healthy Aging. *Clin Geriatr Med*. 2020;36(4):655-669. doi:10.1016/j.cger.2020.06.008.
22. Yeniçağ R, Rakıcioğlu N. Pressure Sores in the Elderly and Nutritional Treatment. *Sakarya Medical Journal* 2019;9(3):387-397.
23. Eglseer D, Hödl M, Lohrmann C. Nutritional management of older hospitalised patients with pressure injuries. *Int Wound J*. 2019;16(1):226-232. doi:10.1111/iwj.13016
24. Jansen RCS, Silva KBA, Moura MES. Braden Scale in pressure ulcer risk assessment. *Rev Bras Enferm*. 2020;73(6):e20190413. doi:10.1590/0034-7167-2019-0413