ÖZGÜN ARAŞTIRMA / ORIGINAL RESEARCH

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The risk and the prevalence of malnutrition in elderly home-care patients

Mehmet Cenk Belibağlı [1]

[1] Health Sciences University, Adana City Training and Research Hospital, Family Medicine, Adana, Turkey.

Abstract

The risk and the prevalence of Malnutrition in elderly home-care patients

Objective: The elderly are more susceptible to undernourishment, and those receiving home-care services have a higher prevalence of malnutrition. The study aimed to determine the prevalence of the community-dwelling elderly with malnutrition and those at risk of malnutrition enrolled in the home healthcare system.
Method: A cross-sectional, descriptive study was conducted using the Mini-Nutritional Assessment short-form among community-dwelling elderly home-care patients living in Adana, Turkey. Individuals the age of 65 and over and receiving home-care services were included. Patients were interviewed once at his or her residence individually, and on-site MNA questionnaires were completed.
Results: Among the 321 patients included in the analysis, 126 were malnourished (39.25%), and 132 were at risk of malnutrition (41.12%). The mean MNA-SF was 8.28±3.36. There was a strong association between malnutrition and literacy, with a third of the study group found to be illiterate (n=108, 33.64%, p=0.001).
Conclusion: The study showed that the majority of the patients were malnourished or at risk of malnutrition. Implementation of nutritional screening and interventions focusing on malnutrition might be required in home-care services.
Keywords: Malnutrition, Nutrition Screening, Elderly, Home-Care

Öz

Yaşlı evde sağlık hastalarında malnütrisyon prevalansı ve malnütrisyon riski

Amaç: Yaşlılar yetersiz beslenmeye daha duyarlıdır ve evde bakım hizmeti alanların malnütrisyon prevalansı daha yüksektir. Çalışma, evde sağlık sistemine kayıtlı, toplumda yaşayan yetersiz beslenen yaşlılar ve yetersiz beslenme riski taşıyanların prevalans istatistiklerini belirlemeyi amaçlamıştır.
Yöntem: Adana ili Numune Eğitim ve Araştırma Hastanesi Evde Sağlık Birimine kayıtlı evde bakım birimine kayıtlı yaşlı hastalarla yürütülen kesitsel tanımlayıcı çalışmada, Araştırmacılar tarafından düzenlenen anket formu ev ziyareti sırasında yüz yüze görüşme tekniğiyle uygulandı. Anketin ilk kısmında sosyodemografik değişkenler, 2. Kısmında MNA-SF yer almaktaydı.
Bulgular: Analize dahil edilen 321 hastadan 126'sı yetersiz beslenmekteydi (% 39.25) ve 132'si malnütrisyon riski taşıyordu (% 41.12). Ortalama MNA-SF 8.28 ± 3.36 idi. Hastaların üçte birinin okuma yazma bilmediği tespit edilen çalışmada (n = 108,% 33.64, p = 0.001) yetersiz beslenme ve okuryazarlık arasında güçlü bir ilişki tespit edildi.
Sonuç: Çalışma, hastaların çoğunun malnütre veya malnütrisyon riski altında olduğunu gösterdi. Evde bakım hizmetlerinin yürütülmesinde beslenme taramalarına ve yetersiz beslenmeye yönelik müdahalelere daha fazla yer verilmesi gerektiği görülmektedir.
Anahtar Kelimeler: Malnütrisyon, Beslenme Anketleri, Yaşlı, Evde Bakım Hizmetleri

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Sorumlu Yazar/Corresponding Author: Mehmet Cenk Belibağlı, Health Sciences University, Adana City Training and Research Hospital, Family Medicine, Adana, Turkey.
Email: mcbelibagli@gmail.com
ORCID ID: 0000-0002-0074-4611

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INTRODUCTION

In the last decade, compared to the increase in the overall global improvement in health and life expectancy, the rate of the disease-free part of life seems to rise slower. Comparing the global increase in total life expectancy and healthy life expectancy rates between 2000 and 2015 has revealed discordant results with five years to 4.60 years, respectively (1,2). Healthcare delivery, becoming more elaborate each day, has already gone beyond the healthcare facilities and met the patients at their residences decades ago (3).

Home-care services in Turkey began in 2005 with the introduction of The Directive on The Delivery of Home Health Care (4). The directive allowed the delivery of health care services and set the staff and equipment standards and the basics of the delivery. The "Home-care Services Program" was issued to provide the services via government health facilities free of charge in early 2011 (5). The directive required each city's local health authority to establish a coordination center connected with the home-care units (HCU) formed at the government hospitals. Patients or their legal representatives were expected to apply to the HCUs, the coordination center, or family physicians. For inpatients, the patient's physician was required to contact the HCU for enrollment before discharge. The qualifications for admission were being bedridden, having limited mobility, or being unable to leave the residence.

The elderly are more susceptible to undernourishment (6). In a systematic review, meta-analysis, and meta-regression of the prevalence of protein-energy malnutrition study, which included 111 studies from 38 countries (n = 69.702 participants), researchers indicated that participants receiving home-care services had the highest rate (7).

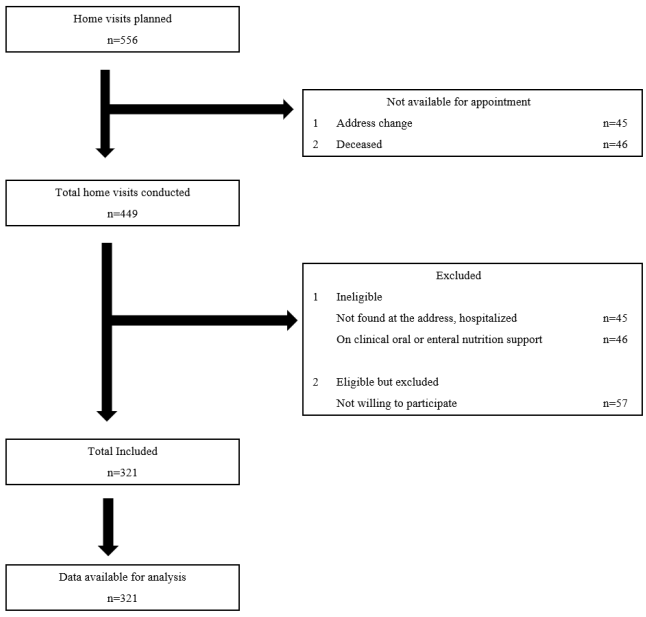
The study aimed to contribute to the prevalence statistics of the community-dwelling elderly with malnutrition and those at risk of malnutrition enrolled in the home healthcare system.

METHODS

The cross-sectional and descriptive study was conducted among an elderly population between April 1st and September 30th, 2016, in Adana city, Turkey. The study included community-dwelling adults aged 65 years and above receiving home-care services from the Adana Numune Training and Research Hospital Home-care Unit. The number of patients registered to the unit was more than a third of the existing cases in the region, making a reliable sample size. The cases with clinical oral or enteral nutrition support were excluded from the study. Patients were interviewed once at his or her residence individually by the trained researchers on the Mini Nutritional Assessment Short form (MNA-SF) questionnaire, followed by regular visits by healthcare staff and asked for study participation. As approved, the patients were included in the study, and on-site questionnaires were completed.

The data included age, gender, weight, height, literacy (literate or illiterate), household composition, marital status, financial self-appraisal, medical history: the history of underlying diseases including hypertension, diabetes, atherosclerotic cardiovascular and cerebrovascular diseases, cancer, dementia, and depression, and the MNA-SF. The participants were classified into three groups based on the MNA-SF scores: malnourished (0-7 points), at risk of malnutrition (8-11 points), and standard nutritional status (12-14 points).

Initially, 556 home visits were planned. The patients were called for an appointment at their residence. Due to address change to another city (n=35) and having deceased (n=52), 87 patients were not included. A total of 469 home visits were conducted. At the time of the visit, a total of 148 patients, identified as hospitalized, on clinical oral or enteral nutrition support, and not willing to participate were excluded (n=45, 46, and 57, respectively). The number of included patients was 321. The flow diagram of the study protocol was presented in figure 1.



Statistical analysis

Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) 20.0 software was used. In descriptive analysis, mean, standard deviation, median, frequency, percentage, minimum, and maximum values were calculated. Pearson Chi-square was used for distribution analysis. The critical significance was set as 0.05.

Table 1. The analysis of the baseline characteristics

		Mean			Range				
Age (years)		77.50±8.57			65-105				
MNA-SF		8.28±3.36			0-14				
		Malnourished		At risk of Malnutrition		Nourished		Total	
Age (years)		77.75±8.72		77.17±8.39		77.71±8.57			
MNA-SF		4.77±1.87		9.49±1.00		12.75±0.84			
		n	%	n	%	n	%	n	%
Total		126	39.25	132	41.12	63	19.63	321	
Mobility	Immobile	105	83.33	81	61.36	25	39.68	211	65.73
	Impaired Mobility	19	15.08	42	31.82	14	22.22	75	23.36
	Mobile	2	1.59	9	6.82	24	38.10	35	10.90
Gender	Female	79	62.69	82	62.12	44	69.84	205	63.86
	Male	47	37.30	50	37.88	19	30.16	116	36.14
Marital Status	Married	61	48.41	71	53.79	30	47.62	162	50.47
	Single	65	51.58	61	46.21	33	52.38	159	49.53
Financial self-appraisal	Ample	11	8.73	9	6.82	7	11.11	27	8.41
	Enough	49	38.88	70	53.03	25	39.68	144	44.86
	Not enough	66	52.38	53	40.15	31	49.21	150	46.73
Literacy	Literate	69	54.76	95	71.97	49	77.78	213	66.36
	Illiterate	57	45.23	37	28.03	14	22.22	108	33.64
Household composition	Alone	1	0.79	0	0	3	4.76	4	1.25
	With siblings	108	85.71	122	92.42	55	87.30	285	88.79
	Caregiver	17	13.49	10	7.58	5	7.94	32	9.97
Medical History									
Cerebrovascular disease		84	66.67	77	58.33	25	39.68	186	57.94
Hypertension		91	72.22	89	67.42	40	63.49	220	68.54
Diabetes		67	53.17	65	49.24	33	52.38	165	51.40
Atherosclerotic cardiovascular disease		53	42.06	60	45.45	23	36.51	138	42.99
Alzheimer's disease		56	44.44	45	34.09	2	3.17	103	32.09
Other diseases		11	8.73	9	6.82	11	17.46	31	9.66

Gender	x^2=1.221 p=0.538
Marital Status	x^2=0.988 p=0.604
Financial self-appraisal	x^2=6.456 p=0.158
Literacy	x^2=13.131 p=0.001
Household composition	x^2=11.034 p=0.021
Cerebrovascular disease	x^2=12.562 p=0.002
Hypertension	x^2=1.61 p=0.441
Diabetes	x^2=0.418 p=0.764
Atherosclerotic cardiovascular disease	x^2=0.652 p=0.723
Alzheimer's disease	x^2=33.243 p=0.001
Other diseases	x^2=5.741 p=0.048

RESULTS

There were 126 malnourished (39.25%), 132 at risk for malnutrition (41.12%), and 63 (19.63%) patients at normal nutritional status. The mean MNA-SF score was 8.28±3.36, with a median of 9, ranging from 0 to 14. In table 1, the analysis is presented.

There were no significant differences between the MNA-SF scores and age, gender, and financial self-appraisal (p=0.538, p=0.604, and p=0.157, respectively). There was a strong association between MNA-SF scores and literacy (p=0.001). The results showed an association of MNA-SF with household composition, but the link was weak (p=0.021). The comparison between the MNA-SF and the patients' current diagnoses showed strong associations with dementia and cerebrovascular diseases (p=0.001 and p=0.002, respectively).

There was also a weak association of the questionnaire with the other diseases group (ankylosing spondylitis, chronic kidney failure, chronic obstructive pulmonary disease, cirrhosis, epilepsy, femur fracture, major depression, osteoporosis, paraplegia, Parkinson's disease, vertebra fracture, and osteoarthritis, n=2 for each, and colon cancer, liver cancer, lung cancer, prostate cancer, rheumatoid arthritis, tetraplegia and gastric cancer, n=1 for each).

DISCUSSION

The high illiteracy rates found in the study (n=108, 33.64%) was similar to other reports in the literature. Ghimire et al., in a study assessing nutritional assessment of 242 community-dwelling older adults, reported that out of 58 malnourished patients, 49 (84.48%) were illiterate (8). Similar results presenting a significant association of malnutrition with literacy in the elderly population were published in various studies (9,10). The lack of cooperation, attention, and forgetfulness problems are the main barriers to improve nutrition education, and caregivers might be considered. Fernández-Barrés et al. have reported that educating caregivers on nutrition has stopped nutritional deterioration in older adults at risk of malnutrition (11).

The studies report conflicting data on the household composition of the elderly. Research conducted in Germany demonstrated no statistically significant differences between people living alone or not alone in terms of malnutrition (12). Similarly, there was a weak association between the MNA-SF scores and living with the household composition (p=0.021).

. The close relationship between nutrition and dementia and cerebrovascular diseases was detected in the study (p=0.001 and p=0.002, respectively) parallel to many studies (13–15).

An eye-catching result among the malnourished group was the detection of patients with the ability to leave the dwelling or at least have the capability to get out of bed or chair without assistance (n=2 and n=19, respectively). Not to speak of the mobile patients, although unable to leave the residence, the elderly with impaired mobility could move inside their homes and had limited access to food. In these cases, the ability to reach food was not enough to avoid malnutrition in the home-care patient, which reminds caregiver related causes. During visits, a home-care nurse or physician might not recognize the decreasing appetite but should be aware of psychological stress, severe disease, or neurological condition, correlate the few findings, and set an association between the nutritional deterioration. Another explanation might be the discoordination among the health care staff. Recognizing an eating problem in a patient should not be considered a "done job" as long as it is transmitted to the correct person who could initiate an intervention. Studies report such failures of the healthcare team (16,17). Another reason might be the low frequency of the visits.

Single follow-up visits were shown to be ineffective. Lembeck et al. reported that single follow-up home visits showed no effect on conditions that respond well to interventions deliverable in primary healthcare settings (18).

The results of the study were similar compared to the findings of other researches conducted in Turkey. In a study conducted on 209 home-care patients, Adiguzel et al. stated that 52.60% of the cases were malnourished (19). In another study, Emiroglu et al. showed 22.80% malnutrition in a home-care population of 472 (20). However, studies from developed countries report much lower rates. In Europe and North America, malnutrition prevalence was between 1–15% in noninstitutionalized elderly and between 25–60% in older adults in geriatric care facilities (21). Also, 53% of the European elderly were at nutritional risk (6). The high malnourished and at risk of malnutrition rates (39.25% and 41.12%) found in the study might require a quality questioning approach. The delivery of home-care services was initiated more than a decade ago, but the directive still lacks objective acceptance or rejection criteria, accurate assessment, adequate follow-up, proper termination procedures, and missing a medical waste management plan (5,22). The reports show that the required level of care was negatively correlated with nutritional status and highlighted a positive correlation between nutritional status and functional capacity in older people (23).

Currently, the primary indexed literature lacks reports focusing on malnutrition in the elderly receiving home-care in Turkey. The results indicate the need to draw attention to their nutritional condition.

Limitations

The study lacked body mass index analysis because of the many missing height and weight data due to aborted

measurements after the patients' pain or discomfort. Despite the lack of such vital data, calf circumference, included in the MNA-SF, was measured to complete the screening. Moreover, there were no other questionnaires or scales used in the study. The literature is abundant with nutrition researches comparing one scale to another. In the study, nothing but the presentation of the state of nutrition of the elderly home-care patients was aimed.

CONCLUSION

The study revealed the nutrition status of the elderly home healthcare population and analyzed the home visit results. It was shown that the majority of the patients were malnourished or at risk of malnutrition. Implementation of nutritional screening and interventions focusing on nutrition might be required in home-care services.

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Peer-Review

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Conflict of Interest

The author declare that they have no conflict of interests regarding content of this article

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Ethical Declaration

Ethical permission was obtained from the Adana Numune Training and Research Hospital Human Research Ethics Committee for this study with date August 14, 2014 and number 52, and Helsinki Declaration rules were followed to conduct this study.

Author Contributions

Mehmet Cenk Belibağlı is the sole author of this study and performed the conception, design, acquisition of data, analysis, interpretation, manuscript preparation and critical revisions.

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