ORIGINAL RESEARCH

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Malnutrition, Sarcopenia, and Dysphagia Awareness: We Still Below the Expected Point

Ekin Oktay Oğuz, Pelin Ünsal

Etlik City Hospital, Clinic of Internal Medicine, Division of Geriatrics, Ankara, Turkey

Abstract

Objective: Malnutrition prevalence is approximately 40-50% in hospitalized patients, especially patients followed at internal medicine clinics who have polymorbidities and are at increased risk of malnutrition. The aim of this study was to determine awareness among internal medicine research assistants regarding the assessment of malnutrition, sarcopenia, and dysphagia, which are frequently observed in patients attending internal medicine clinics.

Materials and Methods: A questionnaire consisting of nine questions was applied to the Etlik City Hospital Internal Medicine research asistants who agreed to participate in the survey based on previous studies conducted by the researchers.

Results: Forty-four (86.3%) of the internal medicine research assistants thought that they were insufficiently knowledgeable about nutrition management. Twenty-two (43.1%) participants stated that they regularly evaluated the nutritional status of every older patient in a hospital setting. 2% (n=1) and 5.9% (n=3) of participants, respectively, performed valid tests for malnutrition and dysphagia screening, and internal medicine research assistants did not report using any reliable tests to screen for sarcopenia. Retrospectively, 35.3%, 47.1%, and 52.9% of those surveyed did not routinely screen for malnutrition, dysphagia, or sarcopenia. Research assistants in internal medicine were divided into two groups based on their profession time.There was no difference about nutrition knowledge, malnutrition, dysphagia and sarcopenia screening between the two groups. We found that the nutritional knowledge of internal medicine residents is inadequate.

Conclusion: Nutritional interventions require multidisciplinary work, and all healthcare professionals should increase their awareness and knowledge about nutrition in routine clinical practice.

Keywords: Malnutrition, sarcopenia, dysphagia, survey, internal medicine

Introduction

Malnutrition is defined as an insufficient intake of nutrients, such as energy and protein, leading to impairment of body composition (1). In particular, patients followed-up at internal medicine clinics are at increased risk of malnutrition. The prevalence of malnutrition in hospitalized patients is approximately 40-50%, and it increases with age and the presence of polymorbidities (2). Malnourished patients require more assistance with activities of daily living, longer hospital stays, and greater risks of complications and readmissions (3). Furthermore, the mortality rate of patients who received nutritional care after discharge was reduced (4). Sarcopenia and dysphagia, which are both causes and consequences of malnutrition, are also important geriatric syndromes. Sarcopenia is a syndrome characterized by progressive loss of muscle mass and strength, which is a significant cause of disability (5). Dysphagia is a condition characterized by difficulty swallowing food or liquid from the mouth to the stomach, which can lead to malnutrition, dehydration, and aspiration pneumonia (6). All three conditions include overlapping clinical features, shared common pathophysiological mechanisms, and are associated with worse outcomes (7). The syndromes of malnutrition, sarcopenia, and dysphagia should be well recognized by internal medicine physicians. However, studies have revealed a fairly low degree of awareness regarding nutrition (8). According to

Address for Correspondence: Ekin Oktay Oğuz MD, Etlik City Hospital, Clinic of Internal Medicine, Division of Geriatrics, Ankara, Turkey
E-mail: ekinoktay@yahoo.com **ORCID:** orcid.org/0000-0001-6634-3602
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a recent study, only a small number of patients are diagnosed with malnutrition and receive nutritional support therapy, even though up to 50% of patients are at risk for malnutrition (9). The main cause of undiagnosed malnutrition, sarcopenia, and dysphagia is a lack of awareness of the essential role of nutritional support. This is due to insufficient nutrition education received by research assistants and medical schools (10,11). The present study aimed to determine the awareness of internal medicine research assistants regarding malnutrition, sarcopenia, and dysphagia assessment.

Materials and Methods

A questionnaire was recommended to evaluate the awareness of malnutrition among the internal medicine research assistants before the Etlik City Hospital Internal Medicine Clinic Training Meetings, which had the topic of "malnutrition in older patients". A questionnaire consisting of nine questions was applied to the research asistants who agreed to participate in the survey, based on previous studies conducted by the researchers. The main subjects included in the questionnaire were the demographics of the participants, awareness of malnutrition, and proficiency in screening for and evaluating malnutrition, sarcopenia, and dysphagia. The study was approved by the Local Ethics Committee of Etlik City Hospital (approval number: AEŞH-EK1-2023-121, Date: 03.05.2023). All participants provided written informed consent, and the study was conducted in accordance with the Helsinki Declaration.

Statistical Analysis

Out of the 106 internal medicine research assistants, 51 of whom were invited and worked at Etlik City Hospital during the study, completed the survey. Considering that the participation rate in a similar survey among oncologists in a previous study was 5.7% (12), in the power analysis, it was decided to include a sample size of this study n=50 internal medicine research assistants in the study group with a margin of error of 0.05 and a power of 90%. Descriptive statistics are presented as median (25^{th} percentile-75^{th} percentile) for variables with a skew distribution and as percentage (%) for categorical variables. The chi-square test, or Fisher's exact test, was used to compare participants' answers to the questionnaire and their number of years in the profession. A p value<0.05 was considered statistically significant. Statistical analyses were performed using IBM SPSS Statistics, Version 23 (Armonk, NY: IBM Corp.).

Results

A total of 51 internal medicine research assistants were included in the study. The median profession time of research assistants is 2 (1-4) years.

Forty-two (82.4%) of the participants believed that malnutrition had a large effect on the prognosis of older patients followed in internal medicine clinics, whereas nine (17.6%) felt that malnutrition had a moderate impact. There are no participants who point out that nutrition status had no effect on prognosis. Only seven (13.7%) participants thought that they knew adequately about nutrition management, while 44 (86.3%) of the internal medicine research assistants thought that they were insufficiently knowledgeable on this topic. Retrospectively, 88.2% (n=45) and 82.4% (n=42) of the participants believed that their knowledge of enteral and parenteral nutrition was incomplete when asked about it (Figures 1 and 2).

Twenty-two (43.1%) participants regularly evaluated the nutritional status of every older patient in a hospital setting.

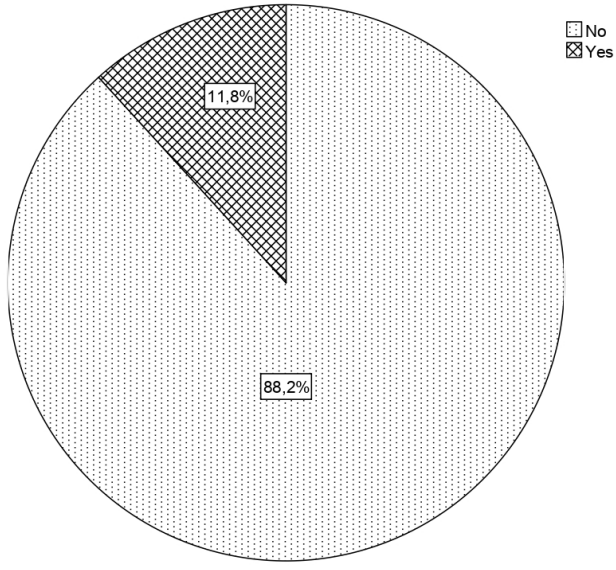

Figure 1. Do you have sufficient knowledge of enteral nutrion indications?

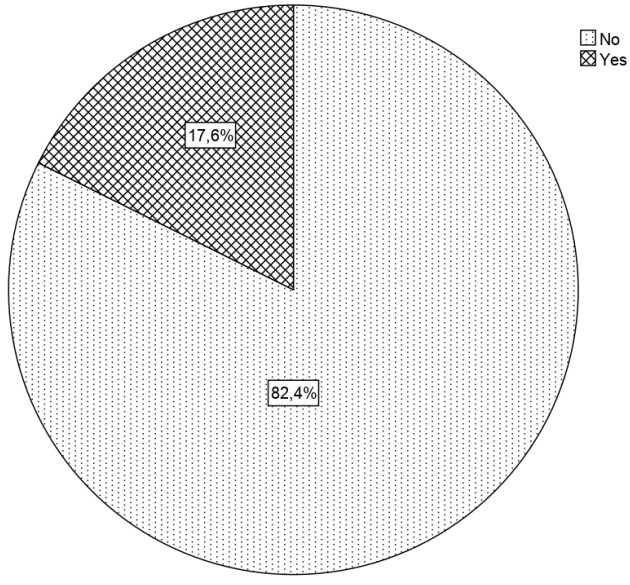

Figure 2. Do you have sufficient knowledge of paranteral nutrion indications?

Five (9.8%) of the internal medicine residents reported that they always, 27 (52.9%) often, and 18 (35.3%) rarely consulted the clinical nutrition unit for patients who were malnourished or at risk of malnutrition.

While 2% (n=1) and 5.9% (n=3) of participants, respectively, performed valid tests for malnutrition and dysphagia screening, internal medicine research assistants did not report using any reliable tests to screen for sarcopenia. Retrospectively, 35.3%, 47.1%, and 52.9% of those surveyed did not routinely screen for malnutrition, dysphagia, or sarcopenia (Table 1).

Research assistants in internal medicine were divided into groups based on their profession time: two years and less or two years more. We compared the nutrition knowledge, malnutrition, dysphagia, and sarcopenia screening groups and found no difference between the two groups. In addition, groups' levels of screening awareness and knowledge were poor (Tablo 2).

Discussion

In this study, we investigated the awareness of malnutrition, dysphagia, and sarcopenia among the internal medicine research assistants who worked at the tertiary hospital. Malnutrition is a prevalent and serious problem among patients admitted to internal medicine clinics. One of the reasons is that internal medicine departments examine more frail, sarcopenic, and postmorbid older patients than other departments. These factors suggest that internal medicine professionals are highly aware of malnutrition. However, studies have shown that medical professionals at all levels lack sufficient nutritional knowledge, resulting in inadequate treatment of malnutrition (13-15). According to our study, internal medicine research assistants realized the importance of malnutrition, but most of them did not have sufficient knowledge about malnutrition management. Screening for malnutrition was not a routine procedure among our internal medicine research assistants; however, 60% of

Table 1. Questionnaire items and answers

Quastionnaire item	n	%
How significantly can the prognosis of older patients admitted to the internal medicine department be affected by the presence of malnutrition?		
Too much	42	82.4
Mildy	9	17.6
Little	0	-
Do you find your knowledge about nutrition management sufficient?		
Yes	7	13.7
No	44	86.3
In your routine clinical practices for inpatient care, can you evaluate every older patient's nutritional status?		
Yes	22	43.1
No	29	56.9
How often would you like to consult the clinical nutrition unit for your older patients who are malnourished or at risk of malnutrition?		
Always	5	9.8
Often	27	52.9
Sometimes	18	35.3
Never	0	-
Do you have sufficient knowledge of enteral nutrition indications?		
Yes	6	11.8
No	45	88.2
Do you have sufficient knowledge of paranteral nutrition indications?		
Yes	9	17.6
No	42	82.4
The malnutrition screening		
I perform it using validity tests, including NRS 2002, MUST, and MNA-SF.	1	2
I perform it using anthropometric measurements (such as weight and BMI) and/or an evaluation of the food diary	32	62.7
I do not routinely do	18	35.3
The dysphagia screening		
I perform it using validity tests, including a water bolus test or EAT-10	3	5.9
I screen only patients with risk factors such as presenting with stroke, dementia, or aspiration pneumonia	24	47.1
I do not routinely do	24	47.1
The sarcopenia screening		
I perform it using validity test, including SARC-F, handgrip strenght, 5- times sit-to- stand test	0	-
I screen only patients with risk factors.	24	47.1
I do not routinely do	27	52.9

NRS: Numerical rating scale, MUST: Malnutrition universal screening tool, MNA-SF: Mini nutritional assessment - short form, EAT-10: Eating assessment tool - 10

Table 2. Profession time and nutrition awareness levels

	Profession time ≤2 years (n=27)	Profession time >2 years (n=24)	p
How significantly can the prognosis for older patients admitted to the internal medicine department be affected by the presence of malnutrition?			
Too much	20 (74.1%)	22 (91.7%)	0.147
Mildly	7 (25.9%)	2 (8.2%)	
Do you find your knowledge about nutrition management sufficient?			
Yes	2 (7.4%)	5 (20.8%)	0.232
No	25 (92.6%)	19 (79.2%)	
In your routine clinical practices for inpatient care, can you evaluate every older patient's nutritional status?			
Yes	10 (37%)	12 (50%)	0.351
No	17 (63%)	12 (50%)	
How often would you like to consult the clinical nutrition unit for your older patients who are malnourished or at risk of malnutrition?			
Always	2 (7.4%)	3 (13%)	0.803
Often	15 (55.6%)	12 (52.2%)	
Sometimes	10 (37%)	8 (34.3%)	
Do you have sufficient knowledge of enteral nutrition indications?			
Yes	3 (11.1%)	3 (12.%%)	0.878
No	24 (88.9%)	21 (87.5%)	
Do you have sufficient knowledge of paranteral nutrition indications?			
Yes	4 (14.8%)	5 (20.8%)	0.718
No	23 (85.2%)	19 (79.2%)	
The malnutrition screening			
I perform it using validity tests	-	1 (4.2%)	0.515
I perform it using anthropometric measurements and/or an evaluation of the food diary	18 (66.7%)	14 (58.3%)	
I do not routinely do	9 (33.3%)	9 (37.5%)	
The dysphagia screening			
I perform it using validity tests	1 (3.7%)	2 (8.3%)	0.662
I screen only patients with risk factors such as presenting with stroke, dementia, or aspiration pneumonia	14 (51.9%)	10 (41.7%)	
I do not routinely do	12 (44.4%)	12 (50%)	
The sarcopenia screening			
I perform it using validity test	-	-	0.869
I screen only patients with risk factors	13 (48.1%)	11 (45.8%)	
I do not routinely do	14 (51.9%)	13(54.2%)	

participants indicated that they evaluated anthropometric measurements and food diaries. A study conducted in Italy showed that 50% of the participants were not routinely screened for malnutrition (8). This lack of knowledge about malnutrition is a huge global problem. In a study in which internal medicine interns were trained on the factors that determine "hazards of hospitalization in older patients", it was observed that 60% of interns who both rotate and train in geriatric clinics evaluate malnutrition and weight loss in older patients (16). The knowledge of the nutritional management of malnutrition among Saudi doctors was also found to be unsatisfactory. Approximately 80% of Saudi doctors reported having challenges with the screening, assessment, and treatment of malnutrition (17). Similarly, in our study, more than 80% of the participants stated that they were inadequate regarding enteral and parenteral nutrition indications.

Dysphagia is a geriatric syndrome prevalent among older adults and has been linked to mortality, significantly longer hospital stays, and higher costs (18). The majority of the research assistants, with the exception of the 6% who completed our study, had no knowledge or experience with dysphagia. In a study, half of the internal medicine specialists reported not having received dysphagia training. When identifying the dysphagia; 7% stated that they questioned the patient, 19.2% asked the patient to drink or eat food, and 42.3% evaluated using both methods. However, 7.7% of the participants stated that they were unaware of the topic (19). Internal medicine professionals need to increase their awareness and expertise

regarding dysphagia practice through training in continuing education procedures since they will deal with this disorder more frequently. Sarcopenia is associated with adverse health outcomes, such as decreased quality of life and mortality. In one study, only 12% of health care professionals evaluated sarcopenia in routine practice. It was stated that the most important challenges in the diagnosis of sarcopenia were the lack of a device to measure muscle mass and the long time required to perform diagnostic tests (20). Only 13% of dietitians and physicians had adequate knowledge regarding malnutrition, cachexia, and sarcopenia (21). Compared with other clinics, oncology clinics were found to have an awareness of both malnutrition and sarcopenia that was >80%. However, in our study, 50% of the patients did not present with sarcopenia (22). The absence of knowledge regarding the assessment of nutritional status, sarcopenia, and dysphagia at hospital admission in older adults, prevents determining the patients who can benefit from effective nutritional treatment. In a recent multicenter study in our country, only 51.8% of patients with nutritional risk received nutritional treatment, others not receiving support (23). The use of malnutrition and sarcopenia guideline recommendations in daily practice can be crucial to increase awareness about malnutrition and sarcopenia. We should keep in mind that the follow-up and treatment of these patients should be the responsibility of interdisciplinary teams (21).

Study Limitations

There are some limitations in our study. The first and most important is the small sample size, which represents a single hospital. We assessed only internal medicine research assistants' knowledge, we did not include more senior professionals or other medical departments research asistants. Strength of the our study is the evaluated knowledge of malnutrition, dysphagia, and sarcopenia in the same questionnaire. Repeating the survey after a few lessons on nutrition, dysphagia, and sarcopenia would be interesting and instructive for the education and practice of internal medicine research assistants.

Conclusion

Nutritional interventions require multidisciplinary work, and all healthcare professionals should increase their awareness and knowledge about nutrition in routine clinical practice.

Ethics

Ethics Committee Approval: The study was approved by the local Ethics Committee of Etlik City Hospital (approval number: AEŞH-EK1-2023-121, date: 03.05.2023).

Informed Consent: All participants provided written informed consent.

Footnotes

Authorship Contributions

Surgical and Medical Practices: E.O.O., P.Ü., Concept: E.O.O., P.Ü., Design: E.O.O., P.Ü., Data Collection or Processing: E.O.O., P.Ü., Analysis or Interpretation: P.Ü., Literature Search: E.O.O., P.Ü., Writing: E.O.O., P.Ü.

Conflict of Interest: No conflict of interest was declared by the authors.

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