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ORIGINAL ARTICLE

Competences and Attitudes of Internal Medicine Research Assistants Working in COVID-19 Inpatient Services About Nutrition: A Survey Study

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ABSTRACT

Objective: COVID-19 increases risk of malnutrition. With proper nutritional management, clinical outcomes are more positive but nutritional management is often overlooked. Aim of our study is to determine competences and attitudes of internal medicine research assistants working in COVID-19 services in terms of nutritional management and the factors that may affect this.

Materials and Methods: A 12-question survey was applied to internal medicine research assistants worked/still working in the inpatient service and intensive care units where COVID-19 patients were followed up. Their competences and attitudes about nutrition were learned.

Results: A hundred research assistants participated in the study. Ratio of those who considered their knowledge sufficient about nutrition management was 48% (n=48), enteral nutrition was 62% (n=62) and parenteral nutrition was 55% (n=55). There were 92 (92%) research assistants who thought that nutrition was a problem in COVID-19 patients, however there are only 6 (6%) research assistants who have read publications on nutritional management in COVID-19 patients. Research assistants who have performed intensive care or geriatrics rotation stated themselves more competent in nutrition ($p = 0.001$ & $p < 0.001$, respectively) and who have performed geriatrics rotation thought that they have sufficient knowledge about enteral nutrition ($p = 0.03$).

Conclusion: Research assistants who play important roles in the management of patients, find themselves highly incompetent in nutritional management, although they know that nutritional management will yield positive results on the patient's clinical outcomes. Importance of education of research assistants about nutrition should be emphasized in order to apply nutritional support better.

Keywords: nutritional assessment, malnutrition, COVID-19, education.

INTRODUCTION

The pandemic of COVID-19 poses unprecedented challenges and threats for patients and healthcare systems. Although the disease mainly affects the respiratory system [1], it can progress with multisystemic involvement [2]. Systemic diseases, inflammatory processes, immobility, hospitalization, intensive care unit stay increase the risk of malnutrition [3]. Malnutrition causes the prognosis of COVID-19 to be negative regardless of other factors. Complications are reduced and clinical results are observed to be better with proper nutritional management. Therefore, assessment and management of the nutritional status of COVID-19 patients is very important [4].

Physicians'knowledge about nutritional assessment may be incomplete and sometimes they may ignore this issue [5]. In the United States, nutrition education for physicians is insufficient in terms of scope, quality and duration due to various factors; this situation negatively reflects on clinical results [6]. It is stated that nutritional education is required in all medical faculties to overcome this insufficiency [7]. In addition, there are insufficiencies in nutrition education in fellowship training programs [8].

Although nutritional management has great importance in the pandemic of COVID-19 period, nutritional evaluation may often be underestimated. The aim of this study is to measure the competences and attitudes of internal medicine research assistants working in COVID-19 inpatient services about nutritional management.

MATERIALS AND METHODS

Study Design and Participants

Research assistants of Hacettepe University Faculty of Medicine Department of Internal Medicine who worked/were working in the inpatient services/ intensive care units where COVID-19 patients were hospitalized were included in the study. Research assistants who accepted to participate in the survey filled out a questionnaire containing twelve questions regarding the duration of their research assistantship, their rotations, how they see their competence and awareness about nutrition (Table 1). Questionnare is not a validiated questionnare and created by researchers.

Statistics

SPSS 24.0 (Armonk, NY: IBM Corp.) was used for statistical analysis. Descriptive statistics are used to describe the characteristics of research assistants. Pearson's chi-square and Fisher's exact tests was used to examine the relationship between the answers given to the survey questions and the characteristics of the research assistants. When p value is <0.05, it was considered statistically significant.

Ethical Approval

The study has acted in accordance with the Helsinki Declaration. Ethical approval was obtained from Non-interventional Clinical Researches Ethics Board of Hacettepe University Faculty of Medicine (#2021/02-29, 19.01.2021).

RESULTS

Descriptive Features

Survey questions were answered by 100 research assistants who agreed to participate in the study. Number of female participants was 52 (52%). Research assistants in the first 2 years was 36 (36%) and completed the first 2 years was 64 (64%). The ratios of participants who have performed geriatrics and intensive care rotation was 68% (n = 68) and 86% (n = 86) respectively. When the questions evaluating how they see their competencies about nutritional management are examined; 48 (48%) research assistants found themselves sufficient in nutritional management, 62 (62%) thought they had sufficient information about enteral nutrition indications and 55 (55%) thought they had sufficient knowledge about the indications for parenteral nutrition. Ratio of research assistants evaluating their hospitalized patients in terms of nutrition on a daily basis was 63% (n = 63). While 92 (92%) research assistants thought that nutrition was a problem in COVID-19 patients, 97 (97%) thought that nutritional treatments had a positive effect on clinical results, however, only 6 (6%) research assistants read publications on nutritional management in COVID-19 patients and 50 (50%) research assistants answered "sometimes" to the frequency of consultation to clinical nutrition unit in patients with malnutrition or malnutrition risk (Table 2).

Table 1. Survey

1. In what year of your assistantship are you?
…1 ….2 ….3 …..4 ….5
2. Have you worked in intensive care before?
…Yes …No
3. Have you done a geriatrics rotation?
…Yes …No
4. Do you find your knowledge about nutrition management competent?
…Yes …No
5. Could you evaluate each patient in terms of nutritional status in your daily clinical practice in inpatient wards?
…Yes …No
6. How often would you like a consultation to clinical nutrition unit for your patients with malnutrition or at risk of malnutrition?
…Always …Often …Sometimes …Never
7. Do you think you have enough information about enteral nutrition indications?
…Yes …No
8. Do you think you have enough information about parenteral nutrition indications?
…Yes …No
9. Do you think nutrition is a problem for COVID-19 patients?
…Yes …No
10. Do you question the symptoms that will affect the nutrition of COVID-19 patients? (e.g. nausea, vomiting)
…Yes …No
11. Have you read the publications about nutritional management for COVID-19 patients?
…Yes …No
12. Do you think that nutritional therapy have a beneficial effect on patients' clinical outcomes?
…Yes …No

Table 2. Descriptive Characteristics and Answers to Questions

Characteristics	**N=100 (%)**
Gender (female)	52 (52)
Year of assistantship	
1	16 (16)
2	20 (20)
3	29 (29)
4	25 (25)
5	10 (10)
Have you worked in intensive care before?	86 (86)
Have you done a geriatrics rotation?	68 (68)
Do you find your knowledge about nutrition management competent?	48 (48)
Can you evaluate each patient in terms of nutritional status in your daily clinical practice in inpatient wards?	63 (63)
How often would you like a consultation to clinical nutrition unit for your patients with malnutrition or at risk of malnutrition?	
Sometimes	50 (50)
Often-Always	50 (50)
Do you think you have enough information about enteral nutrition indications?	62 (62)
Do you think you have enough information about parenteral nutrition indications?	55 (55)
Do you think nutrition is a problem for COVID-19 patients?	92 (92)
Do you question the symptoms that will affect the nutrition of COVID-19 patients?	69 (69)
Have you read the publications about nutritional management for COVID-19 patients?	6 (6)
Do you think that nutritional therapy have a beneficial effect on patients' clinical outcomes?	97 (97)

Factors Affecting Awareness and Competence

As expected, the competence about knowledge on nutrition management rised with the increase in research assistantship duration, performing intensive care and geriatrics rotations (respectively p = 0.002, p = 0.001, p <0.001). Ratio of self-competence about enteral nutrition indications increases with the climbing of time spent in research assistants and performing geriatrics rotation (respectively p = 0.02, p = 0.03). Performing geriatrics and intensive care rotations did not make a statistically significant difference in terms of competence about parenteral nutrition indications. Among the answers given to the other survey questions, the time spent as a research assistant, performing intensive care and geriatrics rotations did not significantly affect the answers (Table 3).

DISCUSSION

Malnutrition is a common syndrome in the community and especially in hospitalized patients. Diagnosis of malnutrition that is possible to be treated may be delayed for various reasons. Nutritional evaluation may remain in the background in COVID-19 patients due to other vital problems. The awareness of physicians is important for making the diagnosis without delay and making the necessary intervention. In our study, it was tried to measure the competences and attitudes of research assistants working in the internal medicine department about nutrition.

In the pandemic of COVID-19, patients can have multisystemic involvement, increase in comorbid conditions and great difficulties arise in the management of patients [2]. One of these

Table 3. Factors Affecting Awareness of Nutrition and Competence[a]

	Year of assistantship		*P*	Performing Intensive care department		*P*	Performing Geriatrics department		*P*
	≤2 (N:40)	>2 (N:60)		Yes (N:86)	No (N:14)		Yes (N:68)	No (N:32)	
Do you find your knowledge about nutrition management competent?[b]	10 (20.8)	38 (79.2)	*0.002*	47 (97.9)	1 (2.1)	*0.001*	42 (87.5)	6 (12.5)	*<0.001*
Could you evaluate each patient in terms of nutritional status in your daily clinical practice in inpatient wards?[b]	20 (31.7)	43 (68.3)	*0.25*	57 (90.5)	6 (9.5)	*0.09*	46 (73.0)	17 (27.0)	*0.16*
How often would you like a consultation to clinical nutrition unit for your patients with malnutrition or at risk of malnutrition? (Often-Always)[b]	19 (38.0)	31 (62.0)	*0.68*	42 (84.0)	8 (16.0)	*0.56*	33 (66.0)	17 (34.0)	*0.67*
Do you think you have enough information about enteral nutrition indications?[b]	17 (27.4)	45 (72.6)	*0.02*	56 (90.3)	6 (9.7)	*0.11*	47 (75.8)	15 (24.2)	*0.03*
Do you think you have enough information about parenteral nutrition indications?[b]	15 (27.3)	40 (72.7)	*0.04*	49 (89.1)	6 (10.9)	*0.33*	40 (72.7)	15 (27.3)	*0.26*
Do you think nutrition is a problem for COVID-19 patients?[b]	35 (38.0)	57 (62.0)	*0.25*	79 (85.9)	13 (14.1)	*0.90*	63 (68.5)	29 (31.5)	*0.71*
Do you question the symptoms that will affect the nutrition of COVID-19 patients?[b]	25 (36.2)	44 (63.8)	*0.94*	61 (88.4)	8 (11.6)	*0.30*	46 (66.7)	23 (33.3)	*0.67*
Have you read the publications about nutritional management for COVID-19 patients?[b]	1 (16.7)	5 (83.3)	*0.42*	6 (100)	0 (0)	*0.59*	64 (68.1)	30 (31.9)	*1.00*
Do you think that nutritional therapy have a beneficial effect on patients' clinical outcomes?[b]	36 (37.1)	61 (62.9)	*0.55*	83 (85.6)	14 (14.4)	*1.00*	65 (67.0)	32 (33.0)	*0.55*

[a]The numbers in parentheses represent the percentages of the rows, [b]The number and rate of those who answered yes to the questions are given.

comorbid conditions is malnutrition. Its incidence is increasing, especially in the geriatric age group. Malnutrition was detected in 52.7% of the patients in the study in which malnutrition was evaluated in older COVID-19 patients in China [9). In a study in which patients hospitalized due to COVID-19 in all age groups in France were examined, the malnutrition rate was found to be 42.1% [10]. With appropriate nutritional management, complications are reduced and results are observed to be better [11]. European Society of Parenteral and Enteral Nutrition emphasized the importance of the recognition and correct management of malnutrition in COVID-19 patients. Ten practical recommendations for the nutritional management of this group of patients were presented [4].

Malnutrition -independently from COVID-19- poses a significant problem in Turkey. In Turkey in 2009 in a multicenter study, it was seen that 15% of patients were at risk of malnutrition during hospitalization. In addition, 48.2% of the patients at risk of malnutrition did not receive any nutritional treatment [12]. In order to increase this ratio, it is necessary to give importance to the education of physicians on this subject and to increase their awareness and competence about nutrition. When the education programs are examined, it is aimed that physicians will be able to diagnose, treat, monitor and control malnutrition, also implement preventive measures while graduating from faculty of medicine in the Council of Higher Education Undergraduate Medical Education - National Core Curriculum Program [13]. The same goals are also included in the internal medicine, geriatrics and intensive care curriculums of the Medical Specialty Board [14]. When we look at the globally, it is seen that nutrition does not take place in medical education in a sufficient amount, regardless of the country [15]. As a result of our study, ratio of those who did not consider their knowledge competent in enteral and parenteral nutrition indications was found to be substantially high among the research assistants. These competency ratios increase as rising the research assistantship year, performing the rotations of geriatrics and intensive care. Especially, information about enteral nutrition indications increased after geriatrics rotation. In addition, there are very few resident physicians who read publications for the nutritional management of COVID-19 patients. Research assistants also need to increase their interest about nutrition. There is no study in the literature similar to our study, which attracted attention to nutrition education during the COVID-19 pandemics. Therefore, we could not make a comparison with the data we obtained.

There are problems about nutritional education around the world [16-19]. In the study conducted with questions directed to physicians through a survey in Saudi Arabia, it was observed that the knowledge of physicians on nutrition was insufficient. While physicians think that malnutrition management is moderately relevant to their job, they have also stated that their clinical practice in malnutrition is less [20]. In a study in Canada, physicians denoted the nutritional status of patients should be examined at the time of admission to the hospital, during hospitalization and being discharged, while ratio of those who regularly apply this procedure was found to be quite low [21]. In our study, despite vast majority of research assistants thought that nutrition creates a problem in patients and nutritional support positively affects clinical results, while ratio of research assistants who make daily nutritional evaluations of patients and consultation from the clinical nutrition unit was not sufficient.

Our study has some limitations. Firstly, it was designed as single-center study. So, number of participants limits generalizability of results. Since it is a survey study, the answers of participants are subjective. Also, survey is not a validated survey and created by researchers. However, we have also strong points. Malnutrition remains in the backround in COVID-19 pandemics and we draw attention to this issue in terms of education. The competencies and attitudes of the research assistants about malnutrition, were examined and the deficiencies in this regard were tried to be revealed.

CONCLUSION

Malnutrition is a very common problem in hospitalized patients. The magnitude of this problem has increased with the pandemic of COVID-19. With correct diagnosis and treatment, the negative consequences of malnutrition can be prevented. For this reason, it is of great importance to raise the awareness of physicians on this issue and to include more nutritional education in undergraduate and post-graduate education curriculum.

Author contribution

Study conception and design: SC, ZK, and MGH; data collection: SC, ZK, MGO, and AOB; analysis and interpretation of results: SC, BBD, MC, and MGH; draft manuscript preparation: SC, BBD, MC, and MGH. All authors reviewed the results and approved the final version of the manuscript.

Ethical approval

The study was approved by the Non-interventional Clinical Researches Ethics Board of Hacettepe University Faculty of Medicine (Protocol no. 2021/02-29/19.01.2021).

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Conflict of interest

The authors declare that there is no conflict of interest.

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