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PROFILE OF HOSPITALIZED PATIENTS ON ENTERAL NUTRITION THERAPY

PERFIL DE PACIENTES HOSPITALIZADOS EN TERAPIA NUTRICIONAL ENTERAL

PERFIL DE PACIENTES HOSPITALIZADOS EM TERAPIA NUTRICIONAL ENTERAL

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ABSTRACT

Objective*:** to evaluate the sociodemographic and clinical profiles of patients undergoing enteral nutrition therapy in a high-complexity institution. ***Method: a quantitative, descriptive, observational, and cross-sectional study was carried out. Data from patients on enteral nutrition therapy over seven months were analyzed, considering sociodemographic and clinical variables and the diet's infusion route. Descriptive statistical analyzes of absolute, relative, and average frequencies were performed. ***Results:*** it was registered that 614 patients used the therapy, of which 55.0% were male, and 39.9% were older than 60 years. The most prevalent clinical diagnoses varied according to age groups, with an emphasis on cancer (25.2%). The predominant infusion route was the nasojejunal tube (78.6%). ***Conclusion:*** it is understood that enteral nutrition therapy was necessary for all age groups and several clinical diagnoses, mainly for the elderly and patients on cancer treatment. The findings contribute to care planning and nursing knowledge.

Descriptors: Nutritional Therapy; Enteral Nutrition; Nursing Care; Health Profile; Patient Care Planning; Nursing Service Hospital.

RESUMO

***Objetivo*:** avaliar os perfis sociodemográfico e clínico de pacientes em terapia nutricional enteral em uma instituição de alta complexidade. ***Método*:** trata-se de um estudo quantitativo, descritivo, observacional e transversal. Analisaram-se dados de pacientes em terapia nutricional enteral ao longo de sete meses, considerando-se variáveis sociodemográficas e clínicas e a via de infusão da

dieta. Realizaram-se análises estatísticas descritivas das frequências absoluta, relativa e média. ***Resultados:*** registrou-se que 614 pacientes usaram a terapêutica, sendo que 55,0% eram do sexo masculino e 39,9% tinham idade acima de 60 anos. Verifica-se que os diagnósticos clínicos mais prevalentes variaram de acordo com as faixas etárias, com destaque para o câncer (25,2%). Aponta-se que a via de infusão predominante foi a sonda nasoenteral (78,6%). ***Conclusão:*** entende-se que a terapia nutricional enteral se mostrou necessária em todas as faixas etárias e em vários diagnósticos clínicos, principalmente, para idosos e pessoas em tratamento oncológico. Avalia-se que os achados contribuem para o planejamento assistencial e o conhecimento em Enfermagem.

Descritores**:** Terapia Nutricional; Nutrição Enteral; Cuidados de Enfermagem; Perfil de Saúde; Planejamento de Assistência ao Paciente; Serviço Hospitalar de Enfermagem

RESUMEN

Objetivo: evaluar los perfiles sociodemográficos y clínicos de los pacientes sometidos a terapia nutricional enteral en una institución de alta complejidad. **Método:** se trata de un estudio cuantitativo, descriptivo, observacional y transversal. Se analizaron los datos de los pacientes sobre la terapia nutricional enteral durante siete meses, teniendo en cuenta las variables sociodemográficas y clínicas y la vía de infusión de la dieta. Se realizaron análisis estadísticos descriptivos de frecuencias absolutas, relativas y medias. **Resultados:** se registró que 614 pacientes utilizaron el tratamiento, y el 55,0% eran hombres y el 39,9% mayores de 60 años. Se verificó que los diagnósticos clínicos más frecuentes variaron según los grupos de edad, especialmente el cáncer (25,2%). Se señala que la vía de perfusión predominante fue el tubo nasoenteral (78,6%). **Conclusión:** se entiende que la terapia nutricional enteral era necesaria en todos los grupos de edad y en diversos diagnósticos clínicos, principalmente para los ancianos y las personas sometidas a tratamiento oncológico. Se evalúa que los hallazgos contribuyen a la planificación de la atención y al conocimiento en Enfermería.

Descriptores: Terapia Nutricional; Nutrición Enteral; Atención de Enfermería; Perfil de Salud; Planificación de Atención al Paciente; Servicio de Enfermería em Hospital.**ABSTRACT**

Objective**:** to evaluate the sociodemographic and clinical profiles of patients undergoing enteral nutrition therapy in a high-complexity institution. ***Method:*** a quantitative, descriptive, observational, and cross-sectional study was carried out. Data from patients on enteral nutrition therapy over seven months were analyzed, considering sociodemographic and clinical variables and the diet's infusion route. Descriptive statistical analyzes of absolute, relative, and average frequencies were performed. ***Results:*** it was registered that 614 patients used the therapy, of which 55.0% were male, and 39.9% were older than 60 years. The most prevalent clinical diagnoses

varied according to age groups, with an emphasis on cancer (25.2%). The predominant infusion route was the nasojejunal tube (78.6%). ***Conclusion:*** it is understood that enteral nutrition therapy was necessary for all age groups and several clinical diagnoses, mainly for the elderly and patients on cancer treatment. The findings contribute to care planning and nursing knowledge.

Descriptors: Nutritional Therapy; Enteral Nutrition; Nursing Care; Health Profile; Patient Care Planning; Nursing Service Hospital.

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INTRODUCTION

Malnutrition is condition of nutrient deficiency resulting from inadequate intake or the inability to absorb and use nutrients. It is known that about 30 to 50% of hospitalized patients are affected by this condition, which results from several factors such as prolonged fasting, loss of appetite or gastrointestinal symptoms, situations of catabolism, and surgical treatment, among others. It is understood that the deficient nutritional status ends up favoring the occurrence of metabolic, infectious complications and loss of muscle mass, increasing the mortality rate and length of hospital stay and, therefore, reducing the quality of life.[1-2]

Several strategies have been used to face this condition. One of the resources used is Nutrition Therapy (NT), which aims to prevent malnutrition worsening and improve the nutritional status, prepare patients for surgical and clinical procedures, and improve the immune and healing responses. Furthermore, this therapy contributes to the prevention and treatment of non-infectious complications resulting from the treatment, illnesses, and even the risk for falls, providing a reduction in hospital stay and mortality and favoring the patient's quality of life, but also the minimization of hospital costs.[3]

It should be noted that NT can be provided through oral supplements, through the administration of Enteral Nutrition (EN) or Parenteral Nutrition (PN). EN is widely used because it allows supplying

nutrients physiologically and directly to the gastrointestinal tract, which promotes the maintenance of the intestinal mucous integrity and prevents bacterial translocation. Enteral nutrition therapy (ENT) is indicated when oral intake is not possible and when the gastrointestinal tract is fully or partially functioning. The EN can be infused through a nasogastric or nasojejunal tube or via gastrostomy and jejunostomy.[4]

ENT has been increasingly used in public and private institutions, not only in tertiary care but also in-home care. It is noticed that the literature is limited concerning studies on the profile of patients using ENT. In a survey of 628 patients, it was found that the majority (60.0%) were male, 54.4%, elderly, with 20.1% having a diagnosis of neurological diseases, 14.5%, respiratory diseases, and 12.9% cardiovascular diseases[5]. Knowledge about the profile of patients using nutritional therapy is necessary for the planning of care provided to these patients, which can increase the effectiveness of malnutrition treatment, and optimize the use of medical resources in addition to the advances in knowledge in this area.

In this sense, the questions that guided this research are "Who are the patients who use enteral nutrition therapy?"; "What diagnoses most require the use of this therapy?"; and "What is the most used infusion route for administering ENT?".

OBJECTIVE

To evaluate the sociodemographic and clinical profiles of patients undergoing enteral nutrition therapy in a high-complexity institution.

METHOD

A quantitative, descriptive, observational, and cross-sectional study was carried out in a public high-complexity hospital located in Belo Horizonte (MG). The hospital has approximately 500 beds, 90 of which are for intensive and semi-intensive care. The institution is considered a reference hospital for oncology treatment, transplants, and for the treatment of rare diseases.

Secondary data collected by nurses from the institution's multi-professional nutrition therapy team were analyzed and stored in a database. These data refer to the monitoring of all patients hospitalized on EN in the institution, from May to November 2018. Inclusion criteria were patients hospitalized in any institution using EN (including ICU patients), of all age groups, and of both gender. Patients whose data were incomplete in more than one category were excluded.

To characterize the patients' profile, sociodemographic (gender and age), and clinical (underlying and nutritional diagnosis) variables, and the route of choice for EN infusion. Descriptive statistical analyzes of relative, absolute, and average frequencies were performed. Data were typed and tabulated in Microsoft Excel® 2016 spreadsheets.

The study adhered to the recommendations of Resolution No. 466/12, having been approved by the Ethics and Research Committee of the Federal University of Minas Gerais, under the Certification of Presentation for Ethical Appreciation (CAAE) No. 72683417.3.0000.5149 and opinion No. 2.232.124.

RESULTS

Over seven months, 614 patients used EN – an average of 88 patients per month. Most patients were male and elderly. The complete description of the sociodemographic profile of the researched population is shown in Table 1.

Tabela 1. Patient profile with sociodemographic data.Belo Horizonte (MG), Brasil, 2018.

Perfil profile	Total	
	N	%
Sexo		
Female	276	45,0%
Male	338	55,0%
Age group		
Zero a 18 years	164	26,7%
19 a 39 years	57	9,2%
40 a 59 years	148	24,1%
60 a 79 years	202	32,9%
> 80 anos	43	7%

All patients were diagnosed with moderate to severe malnutrition with weight loss greater than 5% of their usual weight in the previous three months. Regarding the underlying diagnoses of the monitored patients, cancer prevailed with 25.2% (n = 155), followed by gastrointestinal disorders with 16.1% (n = 99), and by cardiovascular disorders (15.6%; n = 96).

Concerning age group among children and adolescents, the most frequent diagnosis was neurological/neuromuscular disorders (22.5%; n = 37). In the age group of 19 to 39 years old, there was a predominance of gastrointestinal disorders with 22.8% (n = 13), and cancer (21%; n = 12). Among patients over the age of 40, the most common underlying diagnoses were cancer (88.3%; n = 117) and cardiovascular disorders (66.1%; n = 81). The prevalence of diagnoses by age group is shown in table 2.

Table 2. Diagnosis by age and sex. Belo Horizonte (MG), Brazil, 2018.

Diagnoses by age group	Total by age group		Male		Female	
	n	%	n	%	n	%
Zero to 18 years	**164**					
Cancer	26	15.8%	15	57.7%	11	42.3%
Neurological / neuromuscular disorders	37	22.5%	22	59.5%	15	40.5%
Respiratory disorders	23	14%	12	52.2%	11	47.8%
Cardiovascular disorders	9	5.4%	6	66.7%	3	33.3%
Orthopedic disorders	1	0.6%	1	100.0%	0	0.0%
Gastrointestinal disorders	27	16.4%	16	59.3%	11	40.7%
Sepsis	8	4.8%	4	50.0%	4	50.0%
Other	33	20.1%	17	51.5%	16	48.5%
19 to 39 years	**57**					
Cancer	12	21%	3	25.0%	9	75.0%
Neurological / neuromuscular disorders	7	12.2%	3	42.9%	4	57.1%
Respiratory disorders	4	7%	0	0.0%	4	100.0%
Cardiovascular disorders	6	10.5%	4	66.7%	2	33.3%
Orthopedic disorders	1	1.7%	1	100.0%	0	0.0%
Gastrointestinal disorders	13	22.8%	9	69.2%	4	30.8%
Sepsis	4	7%	3	75.0%	1	25.0%
Other	10	17.5%	4	40.0%	6	60.0%
40 to 59 years	**148**					
Cancer	58	39.1%	35	60.3%	23	39.7%
Neurological / neuromuscular disorders	20	13.5%	8	40.0%	12	60.0%
Respiratory disorders	15	10.1%	6	40.0%	9	60.0%
Cardiovascular disorders	23	15.5%	10	43.5%	13	56.5%
Orthopedic disorders	0	0.0%	0	0.0%	0	0.0%
Gastrointestinal disorders	20	13.5%	16	80.0%	4	20.0%
Sepsis	8	5.4%	4	50.0%	4	50.0%
Other	4	2.7%	2	50.0%	2	50.0%
60 to 79 years	**202**					
Cancer	48	23.7%	34	70.8%	14	29.2%
Neurological / neuromuscular disorders	19	9.4%	7	36.8%	12	63.2%
Respiratory disorders	21	10.4%	15	71.4%	6	28.6%
Cardiovascular disorders	46	22.7%	23	50.0%	23	50.0%

Orthopedic disorders	1	0.5%	0	0.0%	1	100.0%
Gastrointestinal disorders	33	16.3%	19	57.6%	14	42.4%
Sepsis	18	8.9%	6	33.3%	12	66.7%
Other	16	7.9%	11	68.8%	5	31.3%
>80 years	**43**					
Cancer	11	25.5%	4	36.4%	7	63.6%
Neurological / neuromuscular disorders	6	13.95%	1	16.7%	5	83.3%
Respiratory disorders	2	4.5%	1	50.0%	1	50.0%
Cardiovascular disorders	12	27.9%	9	75.0%	3	25.0%
Orthopedic disorders	0	0.0%	0	0.0%	0	0.0%
Gastrointestinal disorders	6	13.9%	4	66.7%	2	33.3%
Sepsis	3	6.9%	3	100.0%	0	0.0%
Other	3	6.9%	0	0.0%	3	100.0%

Concerning the EN route and the total number of patients using ENT, 78.7% (n = 483) used nasojejunal tube (NJ), 14.2% (n = 87) used Gastrostomy (GT), and 4.7% (n = 28) used Jejunostomy (JEJ). Table 3 shows the prevalence of the feeding devices by age group.

Table 3. Feeding devices by age group. Belo Horizonte (MG), Brazil, 2018.

Devices	Total		
	N	% local	% global
GT	**87**		
Zero to 18 years	50	57.5%	8.1%
19 to 39 years	8	9.2%	1.3%
40 to 59 years	9	10.3%	1.5%
60 to 79 years	16	18.4%	2.6%
> 80 years	4	4.6%	0.7%
JEJ	**28**		
19 to 39 years	1	3.6%	0.2%
40 to 59 years	14	50.0%	2.3%
60 to 79 years	9	32.1%	1.5%
> 80 years	4	14.3%	0.7%
NJ	**483**		
Zero to 18 years	108	22.4%	17.6%
19 to 39 years	45	9.3%	7.3%
40 to 59 years	124	25.7%	20.2%
60 to 79 years	171	35.4%	27.9%
> 80 years	35	7.2%	5.7%
Other/Missing information	**16**		

GT: Gastrostomy; JEJ: Jejunostomy; NJ: Nasojejunal tube.

Gastrostomy had the highest prevalence in the children and adolescent's population on this was the only group in which button gastrostomy was used. Adult patients with gastrostomy were treated with foley catheter tube. Besides, jejunostomy with Kehr's T-tube was the most frequent feeding device used among patients aged 40 to 59 years.

DISCUSSION

The results show that the profile of patients using ENT was comprised mostly males (55.0%), which corroborates findings from other studies. A study carried out with 628 patients found 60% (n = 377) male patients.[5] In another study, 229 patients participated, and males were also the majority (55%; n = 128).[6] Men are considered more vulnerable to severe and chronic diseases since their clinical conditions require greater use of the nasojejunal tube. This vulnerability is attributed to factors such as greater exposure to risk behaviors including smoking and alcohol use, in addition to the tendency for men to seek less for health services.[7]

Concerning age, the findings are also similar to other studies. In one of them, data were collected from 118 patients from which 80.5% (n = 95) were elderly.[8] In another study, carried out with 688 patients, 74% (n = 507) were elderly. In the present study, malnutrition in elderly is related to the functional and physiological organic changes inherent to the aging process, and to factors such as side effects of medication, unfavorable socioeconomic conditions, and psychosocial factors.[9] After hospitalization, these factors are added to the impact of the disease's worsening and treatments carried out, which potentiate and worsen the malnutrition process, and the multiple comorbidities common in this life stage.

It was observed that all patients were diagnosed with moderate and severe malnutrition. This finding may be due to the severity of the underlying conditions of patients admitted to the hospital and to the socioeconomic profile of the patients, with a predominance of low income and low educated individuals. In one study, it was observed that 54% of patients were moderately malnourished and 15% were severely malnourished.[10] In another study, it was found that 39.6% of patients were moderately or severely malnourished from a sample of 96 medical records analyzed, with the remaining patients considered at risk of malnutrition.[11] It should be noted that the cost of a malnourished patient is three times higher than those without malnutrition, representing an 61% increase in the average daily healthcare related cost.[12]

In a literature review carried out on studies involving 12 Latin American countries, which sought to assess the prevalence of malnutrition in an adult population, it was found that 40 to 60% of the patients were malnourished at the time of admission, increasing infectious and non-infectious clinical complications, length of hospital stay and costs.[1] These are data that demonstrate the importance of early detection and coping with malnutrition, with easy and low-cost methods to be applied in health institutions requiring only trained human resources.[13]

Regarding the underlying diagnoses of the patients using EN, the findings are in agreement with the leading causes of morbidity and mortality in the country and the world. According to the Pan American Health Organization, cancer is the second leading cause of death globally, responsible for 9.6 million deaths in 2018. It is estimated, globally, that one in every six deaths are related to the disease. It appears that approximately 70% of cancer deaths occur in low and middle-income countries. It is noteworthy that cancer causes a picture of catabolism often interfering with the gastrointestinal function, which causes malnutrition.[14] In a study carried out with 172 patients, cancer was the most frequent condition occurring in 29.1% of cases.[15]

In children and adolescents, it is understood that neurological and muscular diseases prevailed, which results from the fact that these patients often do not allow oral feeding. As the study was

carried out in a high-complexity institution, the researched ward receives many patients in this age group with rare syndromes or neuromuscular disorders. In the adult population between 19 and 39 years old, the most prevalent diagnosis was gastrointestinal disorders, which have a high potential to cause malnutrition due to its symptoms. It is emphasized that the institution where the data was collected is a reference in the treatment of gastrointestinal disorders, which may have contributed to the percentages found. Among the patients over 80s, the prevalence of cardiovascular diseases was identified, which are among the main causes of death in the world, along with cancer.[14]

It is understood that the preference for the nasojejunal tube as an infusion route for the EN for a short period (around four weeks) follows the recommendation in the literature. Nasojejunal tube is a resource that is easy to insert, has a low cost, and is useful for temporary feeding. The prevalence of NJ tube use was observed in several other studies. In one of them, it was found that 95.7% (n = 650) of the participants used a NJ tube, 3.1% (n = 21) used jejunostomy, and 1.2% (n = 8) used gastrostomy[9]. It should be noted that the use of feeding ostomies has differed from this study's findings, which may be related to the fact that, in the present study, patients of all age groups were included, and because children and adolescents make wide use of button gastrostomies to reduce the risk of tube displacement (since they tend to remove the feeding tube). NJ is an effective option, but it has risks and requires nursing actions to prevent complications related to the infusion and adverse events that can harm the patient, requiring the nursing team's training.

Regarding the use of the Foley catheter (designed for use in the bladder) and the Kehr's drain (indicated to drain the bile duct) for feeding purposes, it is noteworthy that these types of tubes are not proper for such purpose, favoring the occurrence of complications. It is advised, as stated in an ordinance, that nurses must participate in the selection, standardization, bidding, and acquisition process of equipment and materials for ENT, and must present scientific arguments for the indications made, aiming at the quality of care and patient safety.[4]

In this study, enteral nutrition therapy is shown to be widely used in patients with different clinical conditions, with Nursing having a fundamental role in its success. It is assessed that it is up to the nurse to guide the patient, the family, or the legal guardian regarding the benefits and risks of NET, to ensure the maintenance of the infusion route, and to administer the enteral nutrition safely in all phases of the treatment. It is also up to the nurse to train the technical team for the care of the patient on NET, avoiding risks and complications, and monitoring the patient to early detect and manage complications.

It is believed that the findings of this study may contribute to other institutions through providing comparison, as well as to the practice of Nursing, which must occur centered on the needs of patients, requiring, for this, knowledge about them. Among the limitations of this study, the difficulty in finding similar research that could be used to discuss the findings is highlighted. It is suggested that educational institutions place greater value on maintaining nutritional status to recover patients and the use of nutrition therapy effectively and safely.

CONCLUSION

It is concluded that the findings of the study show that enteral nutrition was a therapeutic resource used in all age groups and several clinical diagnoses, predominantly in male patients, elderly, in patients undergoing cancer treatment, and in patients that require nasojejunal tube due to preferences or for short therapy length. Based on the identified profile, it is possible to plan the assistance to be provided to patients on nutrition therapy more effectively, which is effective but not risk-free requiring training to be performed safely.

It is estimated that nursing has a lot to contribute to the success of this therapy. However, the team needs to be continuously trained and prepared, starting with knowing the population's profile under their care. It is argued that educational institutions should ensure the transmission of essential knowledge to undergraduate nurses about the importance of maintaining nutritional status to recover patients.

CONTRIBUTIONS

All authors contributed equally to the design of the research project, collection, analysis, discussion of data, writing and critical review of the intellectual content, and to the approval of the manuscript's final version.

CONFLICTS OF INTEREST

None to declare.

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