Original Article

Diarrhea in the critical patient: knowledge and conduct of professionals in intensive care units

Diarreia no paciente crítico: conhecimento e conduta de profissionais de unidades de terapia intensiva

Beatriz Silva de Sousa Siqueira[1]
Fernanda Godoi Melo[2]

[1]Corresponding author. Faculdade de Medicina da Universidade Federal de Uberlândia (Uberlândia). Minas Gerais, Brazil. bzsouza@yahoo.com.br
[2]Hospital de Clínicas da Universidade Federal de Uberlândia (Uberlândia). Minas Gerais, Brazil. ferngmelo@gmail.com

ABSTRACT | OBJECTIVE: To evaluate the knowledge and conduct of health care professionals regarding diarrhea in patients receiving enteral nutrition. **METHODS:** Cross-sectional study conducted with health care professionals from two adult Intensive Care Units. Data were collected using a self-administered questionnaire. **RESULTS:** 37 professionals participated in the study, being 17 (45.9%) nursing assistants or technicians, 8 (21.6%) nurses, 8 (21.6%) physicians, 3 (8.1%) nutritionists, and 1 (2.8%) omitted profession. The most common definition found for diarrhea was "3 or more liquid or semi-liquid stools/day." The main causes cited for diarrhea were "infection" and "diet." The most commonly observed attitude/conduct was "reporting to the team." The majority (16; 43.2%) witness diets interrupted very often because of diarrhea and "diet adjustment" and "training of the multiprofessional team" were the most cited solutions to prevent this interruption. The majority (20; 54%) of the professionals did not participate in any training on diarrhea, and 33 professionals (about 90%) consider the implementation of a protocol important. **CONCLUSION:** there are divergences among health professionals, both in their knowledge and conducts when dealing with patients with diarrhea in the Intensive Care Unit (ICU), which can directly influence care. The training of the multiprofessional team and the creation of a protocol are essential.

DESCRIPTORS: Diarrhea. Enteral Nutrition. Health Professional. Intensive Care. Intensive Care Unit.

RESUMO | OBJETIVO: Avaliar o conhecimento e conduta de profissionais de saúde em relação à diarreia em pacientes recebendo nutrição enteral. **MÉTODOS:** Estudo transversal realizado com profissionais de saúde de duas Unidades de Terapia Intensiva de adultos. Os dados foram coletados por meio de um questionário autoaplicável. **RESULTADOS:** Participaram do estudo 37 profissionais, sendo 17 (45,9%) auxiliares ou técnicos em enfermagem, 8 (21,6%) enfermeiros, 8 (21,6%) médicos, 3 (8,1%) nutricionistas e 1 (2,8%) profissão omissa. A definição mais comum encontrada para diarreia foi “três ou mais episódios de evacuações líquidas ou semilíquidas/dia.” As principais causas citadas para diarreia foram a “infecção” e a “dieta”. A atitude/conduta mais observada foi “comunicação à equipe”. A maioria (16; 43,2%) presencia, com muita frequência, dietas interrompidas por causa de diarreia e a “adequação da dieta” e a “capacitação da equipe multiprofissional” foram as soluções mais citadas para se prevenir essa interrupção. A maioria (20; 54%) dos profissionais não participou de nenhum treinamento sobre diarreias, e 33 profissionais (cerca de 90%) considera importante a implementação de um protocolo. **CONCLUSÃO:** Há divergências entre os profissionais de saúde, tanto em seus conhecimentos quanto nas condutas frente ao paciente com diarreia na UTI, o que pode influenciar diretamente no cuidado com o mesmo. A capacitação da equipe multiprofissional e a criação de um protocolo são essenciais.

DESCRITORES: Diarreia. Nutrição Enteral. Profissional da Saúde. Cuidados Intensivos. Unidade de Terapia Intensiva.

Submitted 07/29/2020, Accepted 02/04/2021, Published 03/05/2021
J. Contemp. Nurs., Salvador, 2021 April;10(1):33-42
http://dx.doi.org/10.17267/2317-3378rec.v10i1.3184 | ISSN: 2317-3378

How to cite this article: Siqueira BSS, Melo FG. Diarrhea in the critical patient: knowledge and conduct of professionals in intensive care units. J Contemp Nurs. 2021;10(1):33-42. http://dx.doi.org/10.17267/2317-3378rec.v10i1.3184

Introduction

Critically ill patients are at immediate risk of death or loss of some organic function (s) because of trauma or specific clinical situations[1], such as in cases of major burns, major surgery, acute pancreatitis, among others. These patients are at high risk of malnutrition due to factors such as prolonged fasting and hypermetabolism. The occurrence of malnutrition in patients admitted to the Intensive Care Unit (ICU) is identified between 38 to 70% of patients[2]. To mitigate malnutrition, one resource used is Enteral Nutritional Therapy (ENT), which reduces the risk of mortality and infections, especially when the therapy starts early, between the first 24-48 hours of hospitalization[3].

ENT is indicated for patients unable to meet their nutritional needs through oral feeding and, despite having advantages in relation to parenteral nutrition, it is related to some mechanical, gastrointestinal, and metabolic complications[2]. According to these authors, gastrointestinal complications, such as decreased bowel noise, delayed gastric emptying, and diarrhea, can affect up to 50% of patients in ICUs dependent on mechanical ventilation.

Less than half of the patients admitted to the ICU receive their total nutritional needs[4]. The diet's infusion is often interrupted to perform procedures, examinations, maintenance, or the need to reposition enteral nutrition devices because of hemodynamic instability, physiotherapy and nursing procedures, gastrointestinal intolerances, and erroneous team practices[5], which makes patients receive, on average, only 80% of what is prescribed[4]. Discontinuation occurs in approximately 85% of patients and, on average, 8 to 20% of the infusion time[6].

Diarrhea is a common complication in the ICU, affecting 2 to 95% of patients, depending on the criteria and definitions[7]. Diarrhea's definition can differ according to the literature, which can be defined as three or more liquid or semi-liquid stools/day; over 300 ml of daily feces per day[8-9] or the elimination of soft or liquid stools over three times in 24 hours[10].

The diarrhea etiology is multifactorial and may involve factors directly associated with enteral nutrition, such as the number of fibers and fats, the presence of Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols (FODMAPS), caloric density, osmolarity, temperature, infusion speed, and contamination of the enteral nutrition. Other related conditions are also the use of medications, including antibiotics (main contributors), infections, including infection by Clostridium difficile, physiological factors related to stress or critical illness, and conditions intrinsic to the patient, such as hypoalbuminemia[2,3,7,9]. Diarrhea can bring serious complications such as malnutrition, loss of electrolytes, and dehydration, which increases the length of hospital stay and contributes to more significant morbidity and mortality and hospital costs[11].

In the treatment of diarrhea, enteral nutrition should not be considered as the primary cause. Verification of the triggering factor is necessary to take appropriate measures; interrupting the diet is not recommended[2,3,7]. Correct management guarantees adequate treatment to the patient, freeing him/her from the risks related to the bad reception of nutrients[12]. Therefore, health professionals must be aware of the factors that can trigger diarrhea in hospitalized patients to take the right approach. Thus, the present study aimed to evaluate health professionals' knowledge and conduct concerning diarrhea in patients receiving enteral nutrition.

Methods

A cross-sectional study was carried out with nurses, nursing technicians, and assistants, physicians and nutritionists, who work in two adult intensive care units (ICUs) at a university hospital.

Data collection was carried out from November to December 2017. All professionals in their working hours were invited to participate in the study and had the objectives and procedures explained. Those who accepted to participate after reading, agreeing, and signing the consent form were included. Those who agreed but did not deliver the questionnaire at the specified time were excluded.

The total number of professionals working in the ICUs (nursing assistants or technicians, nurses, physicians, and nutritionists) is 117. At the time of collection, 78 (66.7%) professionals were found and invited to participate in the research. Of these, 2 (2.6%) did not want to participate, and 39 (50.0%) did not deliver the questionnaire within the specified time, being excluded. Moreover, the last sample comprised 37 professionals.

The data collection was carried out employing a self-administered questionnaire prepared by the researchers and composed of 11 items, including discursive and multiple-choice questions. The discursive questions included the following aspects: i) definition of diarrhea; ii) conduct/attitude when encountering a patient with diarrhea; iii) detailed record of cases of diarrhea; iv) causes of diarrhea; v) reasons diet can cause diarrhea, and vi) what should be done to avoid dietary interruption in cases of diarrhea. The multiple-choice questions addressed the items: i) training on diarrhea; ii) the importance of the aspects to be observed in the patient with diarrhea; iii) how diarrhea cases are recorded; iv) how often diets interrupted because of diarrhea are observed in clinical practice, and v) whether implementing a protocol is known and important.

In multiple-choice questions, professionals could mark only one alternative as the answer. In the case of the discursive questions, similar answers were grouped in a specific classification. In this way, classifications were presented according to the frequency of their occurrence. The data analysis was carried out through the software Statistical Package for Social Sciences - SPSS Statistic 23 to determine the absolute number and frequency.

The Research Ethics Committee of the Federal University of Uberlândia approved the project under number 2.372.489/2017.

Results

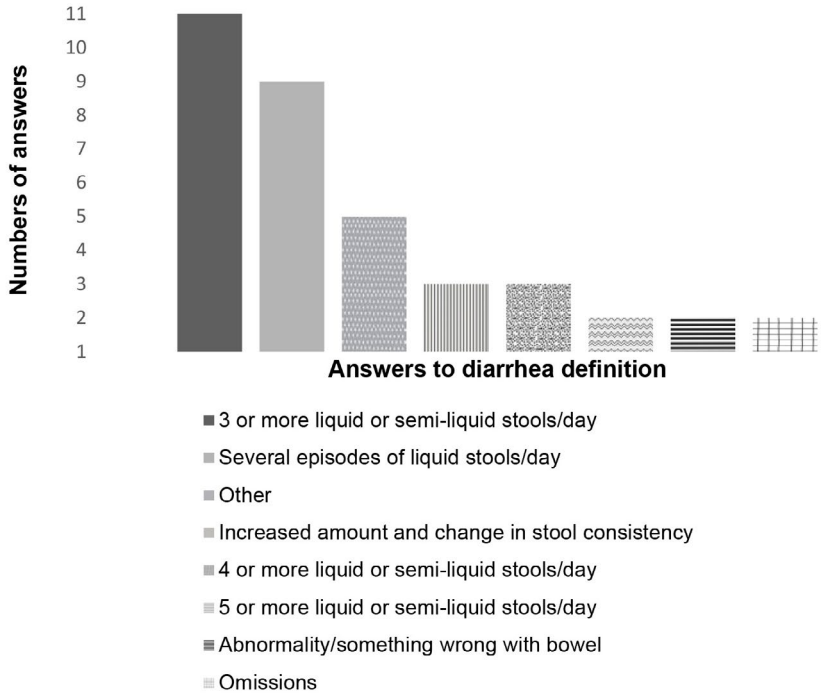
Thirty-seven professionals participated in the study, being 17 (45.9%) auxiliary or technical nurses, 8 (21.6%) nurses, 8 (21.6%) physicians, 3 (8.1%) nutritionists, and 1 (2.8%) omitted profession. The socio-demographic characteristics of the participants are in table 1.

Table 1. Sociodemographic characteristics of the professionals - Uberlândia, MG – 2017

Variables	Nursing Assistant/Technician n (%)	Nurse n (%)	Physician n (%)	Nutritionist n (%)
Sex:				
Female	14 (82.3)	5 (62.5)	6 (75.0)	3 (100.0)
Male	3 (17.6)	3 (37.5)	2 (25.0)	-
Age (years):				
20 - 30	4 (23.5)	5 (62.5)	-	1(33,3)
30 – 40	7 (41.2)	2 (25.0)	7 (87.5)	2 (66.7)
>40	3 (17.6)	1 (12.5)	1 (12.5)	-
Working time in ICU (years)				
<1	1 (5.9)	1 (12.5)	-	-
1 – 3	9 (52.9)	3 (37.5)	1 (12.5)	1(33.3)
>3 – 6	4 (23.5)	2 (25.0)	6 (75.0)	-
>6	2 (11.8)	2 (25.0)	1 (12.5)	2 (66.7)

The answers obtained by professionals when asked about the definition of diarrhea were heterogeneous, 16 distinct ones. The majority of professionals (11; 29.7%) consider the definition of diarrhea "3 or more liquid or semi-liquid stools/day ", as seen in graphic 1.

Graph 1. Answers found by professionals on the definition of diarrhea - Uberlândia, MG - 2017



Other answers obtained by the discursive questions are shown in table 2. Regarding the attitude/conduct when facing a patient with diarrhea, the most frequent answer (19; 51.3%) was "reporting to the multi-professional team." Regarding the causes of diarrhea, the most common responses were the "presence of infection" and the "diet," both with 19 responses (51.3%).

Still considering the discursive questions regarding the reasons diet can cause diarrhea, in 15 (40.5%) questionnaires, the "caloric intake and inadequate volume (in excess)" was cited. Secondly, the "diet composition" was cited in 14 (37.8%) questionnaires. The diet composition items associated with diarrhea were: protein, sugar, fiber, lipids, and laxative ingredients module. In most of the questionnaires (12; 32.4%), it was mentioned that "adjusting the diet" is a measure to prevent diarrhea interruption, followed by 10 (27%) who mentioned that the "training of the multi-professional team" is essential.

Table 2. Knowledge and conduct of health professionals regarding diarrhea in patients receiving enteral nutrition - Uberlândia, MG - 2017

Responses obtained by professionals	n	%
Conduct when encountering a patient with diarrhea:		
Report to the multi-professional team	19	51.3
Identify the etiology	11	29.7
Others[1]	3	8.1
Causes of diarrhea:		
Infection	19	51.3
Diet[2]	19	51.3
Patient's intrinsic factors[3]	18	48.6
Antibiotics	13	35.1
Others[4]	3	8.1
Reasons why diet can cause diarrhea:		
Excessive calorie/volume intake	15	40.5
Composition[5]	14	37.8
Infusion speed	10	27.0
Contamination	9	24.3
Osmolarity	6	16.2
Food intolerance	7	18.9
What should be done to prevent dietary interruption in cases of diarrhea:		
Adjust the diet[6]	12	32.4
Train the multiprofessional team	10	27.0
Discover the etiology	5	13.5
Others[7]	5	13.5
Create protocol	4	10.8

[1]Includes: Optimize hand hydration and sanitization; analyze stool characteristics; reduce diet infusion speed; sanitize the patient. [2]Includes: diet with caloric contribution and/or protein not adapted (in excess); contaminated diet; diet in inadequate temperature and infusion time. [3]Includes: malnutrition; diseases of the gastrointestinal tract; intestinal dysabsorption; intestinal motility; intolerances or allergies; psychological factors. [4]Includes: drug interactions; medicines, except antibiotics. [5]Includes: protein module; sugar; fibers; lipids and laxative ingredients. [6]Includes: substitute diet; reduce volume and speed of infusion.[7] Includes: Infuse medication; infuse obstipating food (cashew juice).

The answers obtained by the multiple-choice questions are shown in table 3. The majority of professionals (20; 54%) did not receive any diarrhea training, highlighting the technician/nursing assistant profession, where 12 (70.6%) did not receive it. Of the professionals who already received some training, most (10; 27%) were only in college or technical courses.

Table 3. Answers obtained in multiple-choice questions about health professionals' knowledge and conduct regarding diarrhea in patients receiving enteral nutrition - Uberlândia, MG - 2017

Responses obtained by professionals	n	(%)
Received some kind of training on diarrhea:		
Yes, in college/technical course	10	27.0
Yes, in service in ICU	2	5.4
Yes, in college/technical course and in service in ICU	5	13.5
No	20	54.0
Registration of cases of diarrhea:		
Does not register	1	2.7
Report verbally	4	10.8
Register without further information	6	16.2
Register in detail	25	67.6
How often sees diets interrupted because of diarrhea:		
Not much	11	29.7
Reasonably	9	24.3
A lot	16	43.2
Knows any protocol on diarrhea:		
Yes	2	5.4
No	33	89.1
Considers it is important to create a protocol:		
Yes	33	89.1
No	2	5.4

When they come across a patient with diarrhea in clinical practice, most professionals (25; 67.6%) make detailed records of cases in their own reports or medical records. In the ICUs studied, there is no protocol to be followed in diarrhea cases, and most professionals (33; 89.1%) never had contact with any, considering its essential implementation.

Discussion

Differences and lack of standardization were observed in health professionals' knowledge and behaviors who participated in this study. When health professionals were questioned about diarrhea's definition, heterogeneous responses were observed, which may be reflected by the professional's education, also perceived in literature, where the definition is inconclusive[7,9]. Most professionals consider diarrhea as the presence of 3 or more liquid or semi-liquid stools/day, the definition given by the World Health Organization[10]. A worrying fact, which reflects on the patient's treatment, is that there is no consensus among professionals in the same service, i.e., there is no standardization in the subject's concept addressed.

As for diarrhea causes, most participants cite "diet" as one of the causal factors. As seen in another study[10], diet as a causal factor was cited, for the most part, by nursing auxiliaries/technicians. The lack of training may justify this response by most of these professionals.

Along with the "diet," the item "infection" was pointed out as one of the most cited causes for the occurrence of diarrhea, also one of the most cited items in the study by Lordani and collaborators[11]. Infection as a causal factor of diarrhea was found in most questionnaires answered by medical professionals (87.5%), including infection by Clostridium difficile - gram-positive anaerobic bacteria responsible for most cases diarrhea associated with the use of antibiotics[13-14]. In the study by Lordani and collaborators[11], "gastrointestinal infection" was the third most cited causal factor among health professionals.

35.1% of professionals cited antibiotics as a causal factor of diarrhea. The use of these drugs is associated with a disorder in the colon's normal bacterial microbiota, which can promote colonization by Clostridium difficile. Diarrhea affects about 5 to 30% of patients using antibiotics and may occur soon after the first dose or up to two months after the end of treatment[15]. In a literature review carried out in 2018, it was seen that in more than 30% of studies, diarrhea was found in the ICU, and it related most to the use of antibiotics[16].

Regarding the "patient's intrinsic factors," aspects such as "malnutrition; gastrointestinal tract diseases; intestinal malabsorption; intestinal motility; intolerances or allergies and psychological factors" were found, cited by most nurses and nutritionists. Besides possibly presenting primary gastrointestinal diseases, the patient may have their physiological functions altered in critical illness[2]. Different gastrointestinal complications, such as decreased intestinal noise, delayed gastric emptying, and diarrhea, can occur in up to 50% of patients on mechanical ventilation and intolerance to enteral nutrition in up to 46% of patients use vasopressors[2].

Regarding the reasons diet can cause diarrhea, "excess calorie/volume intake," "composition," "infusion rate," and "contamination" were the most cited items. In the item "excess calorie/volume diet," cited by most nursing assistants/technicians, we observed a wrong knowledge, since less than half of the ICU patients receive their total nutritional needs[4], being more common a deficit in the supply since dietary infusions are usually interrupted (in approximately 85% of the patients and on average 8 to 20% of the infusion time)[4]. In addition, it is important to highlight that the calculation of nutritional needs and dietary prescription is performed by nutrition professionals responsible and trained for these functions.

Half of the nurses cited the "diet composition" by some assistant nurses considered the module of protein, sugar, fibers, lipids, and laxative ingredients. All diets are industrialized in the ICUs, and the most used polymeric are liquid and oligomeric powder. One of the polymeric diets is normocaloric (1.2 kcal/mL), with 21% protein, 45% carbohydrates, and 34% fat and fiberless, and the other, hypercaloric (1.5 kcal/mL), with 17% protein, 41% carbohydrates, and 42% fat and with soluble (most) and insoluble fiber. None of them contains sucrose (sugar). The oligomeric diet contains 16% protein, 49% carbohydrates (25% sucrose), and 35% fat and fiber-free.

According to the recommendations made by Dietary Reference Intakes (2005)[17], of macronutrients for adults (carbohydrates from 45 to 65%, proteins from 10 to 35%, and fats from 20 to 35%) and fibers (38 g/day for adult men up to 50 years and 25 g/day for adult women up to 50 years), it is observed that the most used diets do not exceed the recommendations, except for the high-calorie polymeric diet which has a high amount of fats (42%). A positive point of this diet is the fiber mix (8 g/liter). Patients with persistent diarrhea may benefit from diets containing a fiber mix. However, supplementation with soluble fiber seems to be more beneficial for reducing diarrhea in critically ill patients[3]. A soluble fiber additive (10-20 g/24 hours) is recommended for ICU patients who present evidence of diarrhea to maintain commensal microbiota and promote intestinal health. The use of fibers is contraindicated in patients with risk of intestinal ischemia or severe dysmotility[3], a fact the team of nutritionists and physicians who participate in the enteral nutrition prescription should consider.

Besides the composition of the diet itself, the "protein module" was cited as a factor that can cause diarrhea. The module is added in most of the ICU patients' enteral nutritions studied to achieve the protein recommendation. There is a culture among professionals in clinical practice that this module may increase the risk of the patient developing diarrhea or aggravating it if it already exists. The module used is composed of 100% whey protein and does not contain added carbohydrates and fats. No information has been found in the literature regarding protein supply in the etiology of diarrhea.

Most nutritionists cited the "infusion speed." That is a factor that should be observed in the occurrence of diarrhea. However, in the ICUs' clinical practice, all the diets are offered by an infusion pump with a time of approximately 15 hours/day. However, it is believed that this is not a causal factor since the slow infusion of enteral nutrition can contribute to reducing the problem of intolerance to a hyperosmolar diet, for example[2,7].

Concerning the "contamination" and "inadequate temperature diet" (cited under "causes of diarrhea"), it is the nurse's function to preserve the diet after receiving it and administer it[18]. Thus, if the professionals of this professional category themselves cite these issues, the importance of training on the correct conservation and administration of enteral nutrition is stressed.

Most professional physicians cited as the reason the "osmolarity", also cited by most nutritionists and not cited by any nursing professional. Osmolarity can cause gastrointestinal intolerance due to osmotic effects, and diets given in the stomach may contain higher osmolarity, while diets given in the intestine should be iso-osmolar[2]. Of the diets most used in the ICUs studied, the hypercaloric polymeric presents osmolarity of 320 mOsm/kg of water (isotonic), the normocaloric polymeric 391 mOsm/kg of water (slightly hypertonic), and the oligomeric 375 mOsm/kg of water (slightly hypertonic). In other words, none of the most used diets presents high osmolarity (> 550 mOsm/kg of water). Besides diets, it is essential to point out that some liquid medications are hyperosmolar, which can also be aggravating[15].

Factors directly related to enteral nutrition may be involved in diarrhea's etiology, such as the amount of fiber and fat, caloric density, osmolarity, temperature, infusion speed, and diet contamination[2,7,9,16]. Thus, the answers obtained by the professionals are consistent with the literature. However, as seen in the study by Lordani et al.[11], there is no consensus among professionals.

Among the procedures to be performed in patients with diarrhea, the main one is verifying possible triggering factors instead of suspending the infusion of enteral nutrition[2,7]. In this study, the central conduct to identify the etiology was observed among physicians and dietitians. For nursing technicians, nursing assistants, and nurses, the primary conduct when encountering a patient with diarrhea is to report to the multi-professional team. Also, most nursing professionals make detailed records of diarrhea cases, in agreement with the results found in another study[11].

Although the professionals frequently stop the diet in diarrhea cases, only one of them mentioned this conduct, which, in his opinion, should be performed only after the failed attempt to identify the etiology of diarrhea and change the type of diet. Consequently, it is questionable whether the professionals omitted this answer when questioned about their attitudes/conducts.

In a literature review by Pinheiro and collaborators[19], in 60% of the studies analyzed, gastrointestinal intolerance was the reason for discontinuation of enteral nutrition in ICU patients and 20% diarrhea. In the study by Quaresma and collaborators (2019)[20], interference with the enteral nutrition in cases of diarrhea was seen more significantly, where most of the intensive care physicians studied have the conduct of reducing the infusion rate of the enteral nutrition and 13% of them interrupt the diet for 24 hours.

In the study by Majid et al.[21], the main behaviors of nurses and dieticians were "fecal monitor output" and "send fecal samples for microbiological analysis." In the present study, three medical professionals cited as their conduct the request for stool tests, such as stool culture, parasitological examination, and investigation of toxins A and B for Clostridium difficile infection.

The "adequate diet" and the "training of the multi-professional team" were the items most often mentioned as solutions to prevent diet interruption in diarrhea cases. The technical/nursing assistant professionals composed most of those who believe that the diet should be adjusted in these cases. Diet management can relieve diarrhea in enteral feeding[7]; however, the main action to be taken should be to identify the etiology to manage the causal factor.

For most medical and nutritionists in this study, the multi-professional team's training was the solution cited to prevent diet interruption in cases of diarrhea. It is an essential factor since 20 professionals (54%) did not receive any training.

After training the nursing staff, there is a reduction in misdiagnoses of diarrhea in patients receiving enteral nutrition[22]. In a study by Barbosa and collaborators (2020)[23], the ICU nursing team had, in general, satisfactory knowledge about nutritional therapy, possibly justified by the training carried out by the institution. Adequate management of diarrhea and other gastrointestinal complications in patients receiving enteral nutrition depends on the multi-professional team's knowledge. Constant training and tools that facilitate the identification and management of complications favor reducing negative patient outcomes[24,25].

In the present study, most professionals do not know any protocol to be followed and consider it important to implement one. It is important to emphasize that well-defined protocols should be implemented to treat diarrhea[15].

The study's limitation was that a nutritionist delivered the questionnaire, which may interfere with the professionals' answers.

Conclusion

This study disclosed divergences among health professionals, both in their knowledge and conduct, when facing a patient with diarrhea in the ICU. Knowledge about the definition of diarrhea and its causes directly influences the conduct to be taken, and it was seen that there are different perceptions about these factors, which can directly influence patient care, possibly impairing it. Since most professionals have not received diarrhea training, it is essential to promote multi-professional team training. Moreover, creating a protocol would be a key point for standardization and consensus among the professionals to obtain adequate management in the studied ICUs.

Authors contributions

Siqueira BSS participated in the study's conception and design, data collection, analysis and interpretation, and article writing. Melo FG participated in the study's conception and design, data interpretation, article review, and approval of the final version of the scientific paper.

Competing interests

No financial, legal, or political conflicts involving third parties (government, private companies, and foundations, etc.) were declared for any aspect of the submitted work (including but not limited to grants and funding, advisory board participation, study design, manuscript preparation, statistical analysis, etc.).

References

1. Portaria n. 2338, de 3 de outubro de 2011 (Brazil). Estabelece diretrizes e cria mecanismos para a implantação do componente Sala de Estabilização (SE) da Rede de Atenção às Urgências. [Internet]. Diário Oficial da União; 2011. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2011/prt2338_03_10_2011.html

2. Toledo D, Castro M. Terapia nutricional em UTI. 1a ed. Rio de Janeiro: Rubio; 2015.

3. McClave SA, Taylor BE, Martindale RG, Warren MM, Johnson DR, Braunschweig C, et al. Guidelines for the provision and assessment of nutrition support therapy in the adult critically Ill patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.). JPEN J Parenter Enteral Nutr. 2017;40(2):159-211. https://doi.org/10.1177/0148607115621863

4. Chung CK, Whitney R, Thompson CM, Pham TN, Maier RV, O'Keefe GE. Experience with an enteral-based nutritional support regimen in critically ill trauma patients. J Am Coll Surg. 2013;217(6):1108-17. https://dx.doi.org/10.1016%2Fj.jamcollsurg.2013.08.006

5. Lobato TAA, Garla PC. Monitoring enteral nutritional therapy in critically ill patients in Brazil: a review. BRASPEN J. 2020;35(2):166-70. https://dx.doi.org/10.37111/braspenj.2020352010

6. Passier RHA, Davies AR, Ridley E, McClure J, Murphy D, Scheinkestel CD. Periprocedural cessation of nutrition in the intensive care unit: opportunities for improvement. Intensive Care Med. 2013;39(7):1221-6. https://doi.org/10.1007/s00134-013-2934-8

7. Chang SJ, Huang HH. Diarrhea in enterally fed patients: blame the diet? Curr Opin Clin Nutr Metab Care. 2013;16(5):588-94. https://doi.org/10.1097/mco.0b013e328363bcaf

8. Rushdi TA, Pichard C, Khater YH. Control of diarrhea by fiber-enriched diet in ICU patients on enteral nutrition: a prospective randomized controlled trial. Clin Nutr. 2004;23(6):1344-52. https://doi.org/10.1016/j.clnu.2004.04.008

9. Ferrie S, East V. Managing diarrhoea in intensive care. Aust Crit Care. 2007;20(1):7-13. https://doi.org/10.1016/j.aucc.2006.10.001

10. World Health Organization. The treatment of diarrhoea. A manual for physicians and other senior health workers [Internet]. Geneva: World Health Organization; 2005. Available from: http://whqlibdoc.who.int/publications/2005/9241593180.pdf

11. Lordani CRF, Eckerti RG, Tozzeto AG, Lordani TVA, Duarte PAD. The knowledge of intensive care professionals about diarrhea. Rev Bras Ter Intensiva. 2014;26(3):299-304. https://doi.org/10.5935/0103-507X.20140042

12. Telles JLH, Boton CRM, Mariano MLL, Paula MAB. Enteral Nutrition: gastrointestinal complications in patients of intensive care unit. Revista Recien. 2015;5(13):5-11. https://doi.org/10.24276/rrecien2358-3088.2015.5.13.5-11

13. Freedberg DE, Salmasian H, Cohen B, Abrams JA, Larson EL. Receipt of antibiotics in hospitalized patients and risk for Clostridium difficile infection in subsequent patients who occupy the same bed. JAMA Intern Med. 2016;176(12):1801-8. https://doi.org/10.1001/jamainternmed.2016.6193

14. Geoghegan O, Eades C, Moore LSP, Gilchrist M. Clostridium difficile: diagnosis and treatment update. Clinical Pharmacist [Internet]. 2017;9(2):1-15. Available from: https://pharmaceutical-journal.com/article/ld/clostridium-difficile-diagnosis-and-treatment-update

15. AlKhawaja S. Diarrhea in Critically Ill Patient. EC Nutrition 9.2 [Internet]. 2017;105-15. Available from: https://www.ecronicon.com/ecnu/pdf/ECNU-09-00299.pdf

16. Campos MF, Brito LMZ, Carvalho ND, Santos SL, Alencar MAVSD, Coelho CH. Nutrição enteral e a ocorrência de diarreia no paciente crítico. International Journal of Nutrology. 2018;11(1):24-327. https://doi.org/10.1055/s-0038-1674845

17. Institute of Medicine. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington, DC: The National Academies Press; 2005. https://doi.org/10.17226/10490

18. Resolução RDC nº 63, 6 de Julho de 2000 (Brazil). Aprova o Regulamento Técnico para fixar os requisitos mínimos exigidos para a Terapia de Nutrição Enteral. [Internet] Diário Oficial da União. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2000/rdc0063_06_07_2000.html

19. Pinheiro DS, Santo FHE, Ribeiro WA, Fassarella BPA. Factors of interruption of enteral nutrition in adult intensive care units: integrative review. RSD. 2020;9(9): e985998188. http://dx.doi.org/10.33448/rsd-v9i9.8188

20. Quaresma EN, Villacorta DBV, Silva RA, Veríssimo AOL, Caldato MCF. Análise da compreensão a respeito da terapia nutricional em Unidades de Terapia Intensiva de um hospital escola. REAS. 2019;11(15):e1338. https://doi.org/10.25248/reas.e1388.2019

21. Majid HA, Emery PW, Whelan K. Definitions, attitudes and management practices in relation to diarrhea during enteral nutrition: A survey of patients, nurses, and dietitians. Nutr Clin Pract. 2012;27(2):252-60. https://doi.org/10.1177/0884533611431986

22. Kumbier M, Costa C, Barreto AL, Abreu AR, Gonzáles D, Spolidoro JV. The Health care in the National Health System. Rev Bras Nutr Clín [Internet]. 2009;24(3):155-8. Available from: http://pesquisa.bvsalud.org/bvsvs/resource/pt/lil-550

23. Barbosa JAG, Carlos CM, Costa RF, Simino GPR. Knowledge of nurses about nutritional therapy. Rev Enferm Contemp. 2020;9(1):33-40. http://dx.doi.org/10.17267/2317-3378rec.v9i1.2543

24. Sampaio IR, Ferrari TKV, Toso TP, Duarte LM, Luzzi LC, Souza VV, et al. Analysis of the adequacy of quality indicators in enteral nutrition therapy in an intensive care unit. RSD. 2019;8(12):e468121941. https://doi.org/10.33448/rsd-v8i12.1941

25. Gomes KOAC, Mesquita DT, Sousa LS, Castro RA, Portella EMM, Sousa US, et al. Nutritional intercorrentions in critical patients: a multiprofissional perception. REAS. 2018;10(3):1628-33. https://doi.org/10.25248/REAS205_2018