

The importance of the technical and scientific knowledge of the nurse in the tracheal intubation procedure

RESUMO | Objetivo: identificar o grau do conhecimento técnico e científico dos enfermeiros no procedimento intubação traqueal. Método: pesquisa de campo com caráter descritivo-exploratória e quantitativa tendo identificado, através do resultado de um questionário aplicado a 23 profissionais enfermeiros, em um Hospital Geral do Vale do Paraíba, o grau de conhecimento técnico e científico sobre o procedimento de intubação traqueal. A coleta dos dados foi realizada nos meses de setembro e outubro de 2021. Resultados: a enfermagem participa e desempenha papel importante no procedimento de intubação, desde os diagnósticos até a avaliação contínua dos principais sinais e sintomas, estabelecendo um plano de cuidados, intervenções e atividades que permitirão fornecer o melhor atendimento ao paciente. Conclusão: O conhecimento do enfermeiro durante o procedimento de intubação traqueal é de extrema importância, visando a qualidade da assistência, e a segurança do paciente.

Descritores: Enfermagem; Intubação orotraqueal; Formação Continuada; Insuficiência Respiratória Aguda

ABSTRACT | Objective: To identify the degree of technical and scientific knowledge of nurses in the tracheal intubation procedure. Method: descriptive-exploratory and quantitative field research, having identified, through the result of a questionnaire applied to 23 nursing professionals, in a General Hospital of the Paraíba Valley, the degree of technical and scientific knowledge about the tracheal intubation procedure. Data were collected in September and October 2021. Results: nursing participates and plays an important role in the intubation procedure, from diagnoses to continuous evaluation of the main signs and symptoms, establishing a care plan, interventions and activities that will allow providing the best patient care. Conclusion: The knowledge of nurses during the tracheal intubation procedure is extremely important, aiming at the quality of care, and patient safety.

Keywords: Nursing; Orotracheal intubation; Continuing background; Acute breathing insufficiency.

RESUMEN | Objetivo: identificar el grado de conocimiento técnico y científico de las enfermeras en el procedimiento de intubación traqueal. Método: investigación de campo descriptiva-exploratoria y cuantitativa, habiendo identificado, a través del resultado de un cuestionario aplicado a 23 profesionales de enfermería, en un Hospital General del Valle de Paraíba, el grado de conocimiento técnico y científico sobre el procedimiento de intubación traqueal. Los datos fueron recolectados en septiembre y octubre de 2021. Resultados: La enfermería participa y juega un papel importante en el procedimiento de intubación, desde el diagnóstico hasta la evaluación continua de los principales signos y síntomas, estableciendo un plan de cuidados, intervenciones y actividades que permitan brindar la mejor atención al paciente. Conclusión: El conocimiento de las enfermeras durante el procedimiento de intubación de traqueal es extremadamente importante, apuntando a la calidad de la atención y la seguridad del paciente.

Palabras claves: Enfermería; Intubación orotraqueal; Educación permanente; Insuficiencia respiratoria aguda.

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INTRODUCTION

Tracheal intubation is a method of choice in emergency care, which demands preparation of the nursing team due to its complexity. However, its risks and complications can be

minimized with the use of appropriate techniques, as well as the due incentive to frequent training of the professionals involved. ⁽¹⁾

It is noteworthy that the direct action of tracheal intubation belongs to the medical professional, however, the nursing team is involved in specific actions before, during and after the procedure. ⁽²⁾

It is mentioned that mechanical ventilation totally or partially replaces spontaneous ventilation, being indicated in cases of Acute Respiratory Failure (ARI) or Acute Chronic Failure. And when there is a need to use invasive breathing, an endotracheal tube or a tracheostomy cannula is used, the nursing professional is responsible for maintaining the permeability of the intubated patient's airways, as well as mastering the ventilator parameters, necessary to assess the patient's adaptation to the factors and implement the necessary nursing care. ⁽³⁾

In view of the fact that ventilatory support demands specialized assistance from the multidisciplinary team. In this sense, care with good care practices in hospital emergencies should be used to promote patient safety and contribute to the quality of the service provided. ⁽⁴⁾

It is believed that in the face of the Covid 19 pandemic scenario, between 10% and 15% of patients with respiratory syndrome require admission to intensive care for ARI, determined by viral pneumonia. These patients usually have increased respiratory rate ($f > 24$ /minute) and hypoxemia ($SpO_2 < 90\%$ on room air). In some of these cases, the patient is critically affected by COVID-19, so he is unable to maintain adequate levels of ventilation, requiring the use of invasive mechanical ventilation to ensure adequate tissue oxygenation. Thus, oxygen therapy is one of the treatments indicated for SARS-CoV-2, thus requiring it to be carried out with good practices. ⁽⁵⁾

In nursing, good practices should be presented as the interrelated and in-

separable set of theories, techniques, processes and activities seen as the best options available for the care of the area, keeping consistency with knowledge, values, contexts, environments, goals and evidence in the interest of



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health. ⁽⁶⁾

The justification for the choice of the theme will be given since it is necessary to have the proper knowledge of the professional nurse in their work routine, as well as their updating and

training on the tracheal intubation procedure, considering that,

In this new pandemic scenario, action must be swift and imperative, and, for that, professionals must be able to deal with the treatment, evolution and care of the patient.

The guiding question of this study was: What is the importance of the nurse's technical and scientific knowledge in the tracheal intubation procedure?

This study aimed to identify the degree of technical and scientific knowledge of nurses about the tracheal intubation procedure.

METHOD

This is a field research with a descriptive-exploratory and quantitative character having identified, through the result of a questionnaire, the degree of technical and scientific knowledge about the tracheal intubation procedure.

The participating population consisted of 23 nurses who work in a General Hospital in Vale do Paraíba, in various sectors such as: Emergency Room, Medical Clinic, Surgical Clinic, Pediatrics, Intensive Care Unit (ICU), Surgical Center, Clinic and ICU of Covid 19.

The strategy for recruiting participants was carried out through formal contact, with the authorization of the Institution's Technical Manager. In agreement with the study, the Free and Informed Consent Term (FICT) was signed, then data collection was carried out through a questionnaire pre-prepared by the authors, composed of 14 (fourteen) multiple-choice questions. The instrument used for data collection was developed by the researchers.

Nursing professionals participated in the study who met the following inclusion criteria: professionals who work in direct patient care and not being on vacation and/or absences. The exclusion criteria were: being away from their activities, for any reason, during data collection.

Then, a semi-structured questionnaire was applied, containing 14 (fourteen) multiple-choice questions that addressed the theme of knowledge, performance and duties of the professional nurse in cases of tracheal intubation.

The questionnaire was applied following the rules of circular letter nº 2 of 2021 of the National Council of Ethics and Research (CONEP - Conselho Nacional de Ética e Pesquisa) of the Ministry of Health. (5) Data collection was carried out in September and October 2021.

The data collection period was 15 working days, which was enough for the units in question. The completion of the data collection instrument was done voluntarily through direct contact with the participants. For data collection, they were stored and processed in a Microsoft Excel® Electronic Spreadsheet and, for the analysis, descriptive statistics were used, which were analyzed by simple frequency and presented in tables.

The research followed the criteria established by Resolution 466/2012 of the National Health Council (CNS - Conselho Nacional de Saúde), for research involving human beings, being approved by the Research Ethics Committee (CEP - Comissão de Ética em Pesquisa) of the Teresa D'Ávila University Center, under substantiated opinion nº 889, CAAE 43600621.8.0000.5431. The researchers involved were committed to privacy and confidentiality and the data used were preserved.

RESULTS

Regarding the "gender" of the 23 research participants, 21 professionals (91.3%) are female and 2 (8.7%) are male.

Regarding the question regarding the "nursing technician" course, 14 professionals (60.87%) answered that they attended the course, against 9 (39.13%) negative answers. Regarding the ques-

tion of "acting as a nursing technician", 13 professionals (56.52%) answered that they had already worked as a technician. In correspondence, 10 of the interviewees (43.48%) denied this field of activity.

Regarding the "knowledge passed on in the undergraduate Nursing course", 17 of the participants (73.91%) responded that the content offered is satisfactory in anatomy, physiology, pathology and procedures. While 6 professionals (26.09%) claimed that the content offered does not meet expectations.

The question related to "dominance in the subject of intubation", the professional had to self-evaluate with scores from 1 to 10. 6 of them (26.09%) were weighted between 4. On the other hand, 14 professionals (60.87%) rated themselves between 7 and 9, and only 3 of them (13.04%) rated themselves as 10.

Regarding the "importance of the nurse's role in tracheal intubation", 18 nurses (78.26%) refuted that the presence of such a professional in the procedure is relevant. 3 nurses (13.04%) answered that the nurse's role in intubation is not relevant. And 2 professionals chose not to respond.

Regarding "nursing practices in the intubation process", 17 of the respondents (73.91%) answered that they have practice and knowledge of their attributions in the intubation process. 4 professionals (17.39%) answered that their knowledge is reasonable. And 2 of the respondents (8.7%) claimed not to have sufficient knowledge and practice. With regard to "mechanical ventilation, its phases and processes", the nursing professional once again had to self-assess himself with scores from 1 to 10 on his domain in the subject. 1 individual (4.35%) scored from 1 to 3, another 7 participants (30.43%) considered themselves with grades from 4 to 6 and the majority and 15 (65.22%) rated themselves with scores from 7 to 9.

Regarding the "drugs used during the

intubation process", 19 individuals (82.61%) responded that they know and master the drugs used. Only 1 professional (4.35%) claimed lack of mastery, and 1 professional (4.35%) responded that the drugs used during the intubation process are not used in the nursing field. On the other hand, 2 participants preferred not to respond.

Regarding "intercurrences during the intubation procedure", 15 participants (65.22%) objected that they feel safe to do so, against 1 participant (4.35%) who claimed not to have enough confidence. A medium and reasonable level of security was the response of 7 (30.43%) participants.

In the question about "logical reasoning", 19 professionals (82.61%) answered that yes, they have logical reasoning throughout the intubation procedure. In a counterpoint, 4 professionals (17.39%) responded that their reasoning is reasonable throughout the intubation procedure.

Regarding "updates on intubation procedure", 16 of the respondents (69.53%) claimed that they update regularly, against 7 respondents (30.43%) who stated that they did not make any updates.

The question directed to "recycling" was answered by 15 participants (65.22%) that the workplace promotes recycling. On the other hand, 7 participants (30.43%) answered that they were not offered recycling. And 1 professional chose not to respond.

In the question about "before and after the Covid-19 pandemic", 20 of the professionals (86.96%) responded that there was a growing interest in the topic of tracheal intubation. On the other hand, 3 of the professionals (13.04%) reported that there was no greater interest.

Finally, closing the questionnaire, the participants were asked about their "interest in expanding their knowledge on the subject",

with the answer that 21 of the professionals (91.30%) are interested, against

2 (8.70%) who are not.

DISCUSSION

According to the Federal Nursing Council, Law 7,498 of 1986, regulated by Decree 94,406 of 1987, provides for the regulation of the professional practice of nursing, in verbis:

Art.11 The Nurse performs all Nursing activities, being responsible for: I - Privately: [...]
1.l) Direct Nursing care to critically ill patients at risk of life;
1.m) nursing care of greater technical complexity and requiring scientific knowledge and the ability to make immediate decisions [...].

According to Alves Morais, Oliveira, Silva, et al. ⁽²⁾, the tracheal intubation procedure is a medical procedure, however, the nursing team is involved in specific actions, before, during and after the procedure. It is also complemented that risks and complications can be minimized through adequate technique, being essential to the training of the professionals involved.

It is important that the professional nurse has knowledge regarding mechanical ventilation and can act independently in the care of the patient who is submitted to it.

It is noteworthy that the nursing professional, according to COFEN Resolution n. 358/2009, which provides for the Systematization of Nursing Care (SNC) and the implementation of the Nursing Process (NP), is responsible for systematizing the assistance to patients in ventilatory support, as well as the application of the NP aiming at the continuity and quality of the assistance provided. ⁽⁸⁾

The nurse must know the action of the drug and be able to distinguish it from adverse events. The professional's action needs to be governed by: aware-

Table 1: Assessment of the degree of technical and scientific knowledge of nurses in the tracheal intubation procedure

VARIABLES	FEMALE		MALE	
	YES	NO	REASONABLE	NULL
Gender	91,30%		8,70%	
Did you study nursing technician?	60,87%	39,13%	---	---
Worked as a nursing technician?	56,52%	43,48%	---	---
Did the nursing degree provide a good foundation on anatomy, physiology, pathology and procedures?	73,91%	26,09%	---	---
Is the importance of the role of nursing in intubation relevant?	78,26%	13,04%	---	8,7%
As for intubation, do you know about the duties of the nursing team and do I have practice?	73,91%	8,7%	17,39%	---
Of the complications in intubation, are you safe in the practice of the procedure?	65,22%	4,35%	30,43%	---
Do you have logical reasoning about possible complications in the tracheal intubation procedure?	---	---	---	---
Have you made any updates on the subject?	82,61%	---	17,39%	---
Does your work promote recycling?	69,57%	30,43%	---	---
Before and after the COVID19 pandemic, did interest in the subject increase?	65,22%	30,43%	---	4,35%
Interested in expanding your knowledge on the subject?	86,96%	13,04%	---	---
Tenho interesse em ampliar meus conhecimentos sobre o assunto?	91,3%	8,7%	---	---
Do you have dominance in the drugs used in intubation?	8,7%	82,61%	4,35%	4,35%
What is the dominance on the subject of intubation?	GRADES 1 to 3	GRADES 4 to 6	GRADES 7 to 9	GRADE 10
What is the dominance over mechanical ventilation, its phases and processes?	4,35%	30,43%	65,22%	---

Source: The authors, 2021.

ness, security, knowledge or access to the necessary information, for good assistance in drug administration, without causing risks or damage to the patient.

⁽⁹⁾ Conducting training activities and continuing health education are two strategies that can positively influence prac-

tical assistance within the emergency, since they emphasize and prioritize the needs and rights of the population served, sowing the principles of universality and equity in the service team. These actions and strategies developed by the professional nurse, end up improving the technical and scientific knowledge of professionals committed to safe care.

CONCLUSION

It is considered that nurses have technical and scientific knowledge in the tracheal intubation procedure, being able to contribute and participate in

care together with their multidisciplinary team.

The nurse's knowledge during the tracheal intubation procedure is extremely important, aiming at the quality of care and patient safety, the nurse must be in constant learning, analyzing the best ways to carry out care and health education.

It is believed in the nurse's ability to provide patient care in ventilatory support to achieve the best results in the care of critically ill patients, seeking recycling and updates, in order to prevent complications and sequelae, as well as improve the quality of care provided to

them. During the pandemic of the new virus, Covid-19, there was greater interest in relation to the subject of tracheal intubation, bringing to nursing professionals the realization of updates on the subject.

In support of these considerations, it is worth emphasizing that the research does not exhaust the subject, as it can unfold into research that requires more time for theoretical consultation, in addition to merely bibliographic research, such as field research and action research, in order to confront the theoretical assumptions with the empirical data collected in the classroom experience. 🐦

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