Nursing diagnoses in critically ill patients during the COVID-19 pandemic

Diagnósticos de enfermagem em pacientes críticos durante a pandemia da COVID-19
Diagnósticos de enfermería en pacientes críticos durante la pandemia de COVID-19

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Abstract

Objective: To verify the association between NANDA International nursing diagnoses and their elements in critically ill patients during the COVID-19 pandemic. **Methods:** Descriptive study that analyzed 60 medical records of patients admitted to the reference intensive care unit for COVID-19 in Pernambuco between August and October 2020. The data was analyzed using descriptive and inferential statistics. The study was approved by the ethics committee under number: 4.199.128. **Results:** The diagnosis "Ineffective airway clearance" was associated with the element "infection", while "Deficit in self-care for dressing" was associated with all its defining characteristics and the related factors: "Discomfort" and "Pain". "Risk of aspiration" was associated with the elements: ineffective coughing, enteral feeding, impaired ability to swallow, decreased level of consciousness and the presence of a nasal/oral tube. Altered skin characteristics, edema, diabetes mellitus and hypertension were associated with "Ineffective peripheral tissue perfusion". "Dysfunctional response to ventilatory weaning" was associated with nine of its elements. **Conclusion:** There were associations between five NANDA International nursing diagnoses and their elements in critically ill patients during the COVID-19 pandemic. This enables the implementation of qualified care focused on the real needs of patients.

Descriptors: COVID-19; Critical Care; Nursing Diagnosis.

Whats is already known on this?
The use of standardized terminologies such as the NANDA-I taxonomy is essential to direct nursing care in a safe and individualized way for critically ill patients affected by COVID-19.

What this study adds?
The research highlights associations between five NANDA International nursing diagnoses and their elements in critically ill patients during the COVID-19 pandemic. This enables nurses to provide qualified care.

Resumo

Objetivo: *Verificar a associação entre diagnósticos de enfermagem da NANDA Internacional com seus elementos em pacientes críticos durante a pandemia da COVID-19.* **Métodos:** *Estudo descritivo que analisou 60 prontuários de pacientes internados na unidade de terapia intensiva referência para COVID-19 em Pernambuco entre agosto e outubro de 2020. Os dados foram analisados através da estatística descritiva e inferencial. O estudo foi aprovado pelo comitê de ética sob número: 4.199.128.* **Resultados:** *O diagnóstico "Desobstrução ineficaz das vias aéreas" esteve associado ao elemento "infecção", já o "Déficit no autocuidado para vestir-se" esteve associado a todas suas características definidoras e aos fatores relacionados: "Desconforto" e "Dor". "Risco de aspiração" esteve associado aos elementos: tosse ineficaz, alimentação enteral, capacidade prejudicada para deglutir, nível de consciência diminuído e presença de sonda nasal/oral. Os elementos alteração em característica da pele, edema, diabetes mellitus e hipertensão estiveram associados a "Perfusão tissular periférica ineficaz". E a "Resposta disfuncional ao desmame ventilatório", esteve associado a nove de seus elementos.* **Conclusão:** *Houve associações entre cinco diagnósticos de enfermagem da NANDA Internacional e seus elementos em pacientes críticos durante a pandemia da COVID-19. Fato que possibilita a implementação de uma assistência qualificada com foco as reais necessidades dos pacientes.*

Descritores: COVID-19; Cuidados críticos; Diagnóstico de enfermagem.

Resumén

Objetivo: *Verificar La asociación entre los diagnósticos de enfermería de NANDA Internacional y sus elementos en pacientes críticos durante la pandemia de COVID-19.* **Métodos:** *Estudio descriptivo que analizó 60 historias clínicas de pacientes internados em la unidad de cuidados intensivos de referencia para COVID-19 en Pernambuco entre agosto y octubre de 2020. Los datos fueron analizados mediante estadística descriptiva e inferencial. El estúdio fue aprobado por el comité de ética bajo el número: 4.199.128.* **Resultados:** *El diagnóstico "Desobstrucción ineficaz de las vías aéreas" estuvo asociado con el elemento "infección", mientras que el "Déficit en el autocuidado para vestirse" estuvo asociado con todas sus características definitorias y con los factores relacionados: "Malestar" y "Dolor". El "Riesgo de aspiración" estuvo asociado con los elementos: tos ineficaz, alimentación enteral, capacidad deteriorada para tragar, nivel de conciencia disminuido y presencia de sonda nasal/oral. Los elementos alteración en las características de la piel, edema, diabetes mellitus e hipertensión estuvieron asociados con la "Perfusión tisular periférica ineficaz". Y la "Respuesta disfuncional al destete ventilatorio" estuvo asociada com nueve de sus elementos.* **Conclusión:** *Se encontraron asociaciones entre cinco diagnósticos de enfermería de NANDA Internacional y sus elementos en pacientes críticos durante la pandemia de COVID-19, lo que permite La implementación de una atención calificada enfocada en las necesidades reales de los pacientes.*

Descriptores: *COVID-19; Cuidados Críticos; Diagnóstico de Enfermería.*

INTRODUCTION

The term "Covid-19" is used to describe an infection caused by a specific coronavirus, designated SARS-CoV-2, which primarily affects the respiratory tract. The virus is transmitted through direct contact with infected individuals, contaminated objects and surfaces, and via respiratory droplets or aerosols.[1]

Individuals affected by the novel coronavirus disease (Covid-19) may present with a range of clinical symptoms, with an average incubation period of 5.2 days. These symptoms may include fever, fatigue, cough, expectoration, anorexia, and shortness of breath, among others. Nevertheless, there are asymptomatic cases, which, in addition to representing a significant challenge in preventing infection, result in underreporting of cases.[2,3]

While the majority of individuals infected with SARS-CoV-2 exhibit mild symptoms, approximately 5% of those affected by the disease progress to a critical state, characterized by respiratory distress syndrome. This may subsequently develop into septic shock, metabolic acidosis, coagulation disorders, and multiple organ failure, necessitating intensive care unit (ICU) admission.[4-5]

It is crucial that health professionals who work in ICUs, particularly nurses, are equipped with the necessary skills to provide care to patients admitted with a clinical condition characterised by the severity of the novel coronavirus disease 2019 (Covid-19). It is thus imperative that nursing care be grounded in scientific evidence, ensuring the provision of safe and optimal care that aligns with the client's actual needs. Such evidence may be derived from standardized nursing classifications, such as the Nursing Diagnosis Association International (NANDA-I) Taxonomy, which employs a classification scheme to organize the 267 diagnoses into 13 domains and 47 classes. [6]

The nursing diagnosis (ND) is aligned with one of the five stages of the methodological instrument that guides professional nursing care, the nursing process (NP). It is defined as a clinical judgment about an individual's, family's, group's, or community's response to health conditions or life processes, or a vulnerability to such a response. It is indispensable in the development of nursing interventions to achieve the expected results. [6]

NDs are comprised of elements that are represented by defining characteristics, related or risk factors, risk populations, and associated conditions. These elements contribute to determining the presence or absence of nursing diagnoses according to the particularities of each individual. [6]

In this context, in 2020, the Nursing Process Research Network (REPPE) developed a guiding instrument for the care of patients with SARS-CoV-2 infection in critical condition, called "Nursing Diagnoses, Outcomes and Interventions for the care of COVID-19 patients in critical condition during the COVID-19 pandemic: Version 2", thus enabling the provision of subsidies, which facilitate the systematic direction of nursing care plans based on the specific needs of each individual.

The gap in the literature and the need to strengthen professional practice based on scientific evidence demonstrate the importance of identifying the NDs present in critically ill patients during the COVID-19 pandemic, as well as the association with their elements. Therefore, this study aimed to verify the association between the NANDA International nursing diagnoses and their elements (defining characteristics, related or risk factors, and associated conditions) in critically ill patients during the COVID-19 pandemic.

METHODS

This is a descriptive, retrospective and quantitative study, carried out in accordance with the Reporting of Observational Studies in Epidemiology (STROBE), in a private COVID-19 reference hospital located in northeastern Brazil. The study population was represented by the medical records of critically ill patients admitted to the reference Intensive Care Unit for COVID-19. The sample was a census, consisting of the number of medical records of patients hospitalized for three months, following approval by the Research Ethics Committee. The sample consisted of 60 medical records. To be included in the study, patients had to be over the age of 18 and admitted to the ICU of the reference hospital for treatment of SARS-CoV-2 infection during the designated data collection period.

The selection of NDs that made up the study was based on the analysis of a document prepared by the Nursing Process Research Network (REPPE), entitled: "Nursing Diagnoses, Outcomes and Interventions for the care of COVID-19 patients in critical condition during the COVID-19 pandemic: Version 2", which consists of the elements of nursing practice (Diagnoses, Outcomes and Interventions), based on standardized systems of diagnostic language and aimed at nurses and managers of nursing services to optimize care for critically ill patients affected by COVID-19. [7]

Thus, the following nursing diagnoses included in the NANDA-I Diagnostic Classification and the elements corresponding to each of them were addressed: Risk of Infection, Impaired Spontaneous Ventilation, Risk of Shock, Risk of Unstable Blood Sugar, Risk of Pressure Injury, Risk of Corneal Injury, Deficit in Self-Care for Feeding, Deficit in Self-Care for Bathing, Deficit in Self-Care for Intimate Hygiene, Interrupted Family Processes, Impaired Gas Exchange, Ineffective airway clearance, Deficit in self-care for dressing, Risk of aspiration, Ineffective peripheral tissue perfusion, Dysfunctional response to ventilator weaning, Risk of unstable blood pressure, Impaired skin integrity, Impaired tissue integrity and Risk of unbalanced fluid volume.

Based on the NDs analyzed in the document, a form-type instrument was drawn up by the members of the research, involving socio-demographic variables (gender, age and origin), clinical variables (comorbidities) and elements (defining characteristics, related factors/risk, associated conditions, and population and risk) of the diagnoses studied in the NANDA-I classification.

The data collection process was conducted between August and October 2020. It entailed a review of medical records with a particular emphasis on the visualization of the implementation of the NP stages. The data were organized in a Microsoft Excel spreadsheet comprising the ND indicators that constituted the research project, with the relevant information already marked as to its presence or absence.

This data was subjected to diagnostic inference by the study's researchers based on the analysis of nursing notes during the patient's stay in the COVID-19 ICU, with a focus on identifying the elements of the NDs, with the diagnosis considered to be present if it presented at least one element identified from the data analyzed in the patients' medical records.

Descriptive and inferential statistics were used to analyze this data using the Statistical Package for the Social Sciences (SPSS) software, version 20.0 for Windows. Relative and absolute frequencies were calculated for socioeconomic and clinical data. Fisher's exact test and Pearson's chi-square test were used to analyze the association between diagnostic indicators and nursing diagnoses, with a statistical significance of 5% being established for this study.

It should be noted that this study complied with the ethical precepts of Resolution 466/12 of the National Health Council and data collection began after the signing of the Term of Commitment and Confidentiality of the Letter of Consent authorizing the use of data and the submission and approval of the

Research Ethics Committee of the Health Sciences Center (CAAE: 02849818.0.0000.5208; opinion: 4.199.128; year: 2020). As this was a study in which only the data from the patients' medical records was collected, there was no need to apply the Free and Informed Consent Form.

RESULTS

The majority of patients were male (73.3%), with a median age of 63 years (37/97) and a p-value of 0.029. The majority of patients resided in the metropolitan region of Recife (55.0%) and had comorbidities (83.3%), with systemic arterial hypertension (60.0%), diabetes mellitus (38.3%), and lung diseases (35.0%) being the most prevalent. As for invasive procedures, 45.7% of patients required invasive ventilatory support and 54.9% of the public studied used a nasogastric/nasoenteral tube during their stay in the ICU.

Of the 20 NDs present in the clientele, ten prevailed in all the patients studied (100.0%): Risk of Infection, Impaired Spontaneous Ventilation, Risk of Shock, Risk of Unstable Blood Sugar, Risk of Pressure Injury, Risk of Corneal Injury, Deficit in Self-Care for Feeding, Deficit in Self-Care for Bathing, Deficit in Self-Care for Intimate Hygiene and Interrupted Family Processes.

The remaining NDs were observed to manifest at varying frequencies. Impaired gas exchange (98.3%), Ineffective airway clearance (98.3%), Deficit in self-care for dressing (95.0%), Risk of aspiration (85.0%), Ineffective peripheral tissue perfusion (78.3%). The least prevalent nursing diagnoses in patients were Dysfunctional response to ventilator weaning (55%), Risk of unstable blood pressure (48.3%), Impaired skin integrity (43.3%), Impaired tissue integrity (43.3%), and Risk of unbalanced fluid volume (11.7%).

Statistical associations were established between the elements and the nursing diagnoses that were present in more than 50% of the public studied. However, due to the lack of statistical power, no associations could be observed between the variables for the diagnoses identified in 100% of the sample, as a 2x2 table could not be generated.

Despite being present in more than 98.3% of patients, the Nursing Diagnosis "Impaired gas exchange" showed no statistically significant association with its elements.

The ND "Ineffective airway clearance" was only associated with the associated condition "infection" (p= 0.017). The ND "Risk of aspiration" had statistically significant associations with five of its elements, as shown in Table 1.

Table 2 shows that the ND "Deficit in self-care for dressing" was significantly associated with all its defining characteristics (p<0.05). With regard to the related factors, ND was significantly associated with the indicators "Discomfort" (p= 0.001) and "Pain" (p= 0.011).

Regarding the ND "Ineffective peripheral tissue perfusion," a significant association was observed with the following elements: altered skin characteristics (p=0.006), edema (p=0.012), diabetes mellitus (p=0.043), and hypertension (p=0.000).

It is important to note that the elements of the nursing diagnoses that were not included in the public study were not presented in the previous tables.

The ND "Dysfunctional response to ventilator weaning" was significantly associated with nine of its elements, as detailed in Table 3.

Table 1. Association between the nursing diagnosis Risk of Aspiration and its clinical indicators. Recife-PE, 2024

Clinical Indicators		Present No. / %	Absent No. / %	p-value*
Related factors	Ineffective coughing	24 / 47,1	27 / 52,9	**.008**
Associated conditions	Enteral feeding	23 / 45.1	28 / 54.9	**.010**
	Impaired ability to swallow	24 / 47.1	27 / 52.9	**.008**
	Decreased level of consciousness	32 / 62.7	19 / 37.3	**.000**
	Presence of nasal/oral tube	28 / 54.9	23 / 45.1	**.002**

*Fisher's exact test.
Source: authors (2020).

Table 2. Association between the nursing diagnosis Deficit in self-care for dressing and its clinical indicators. Recife-PE, 2024

	Clinical Indicators	Present No. / %	Absent No. / %	p-value*
Defining characteristics	Impaired ability to put clothes on the lower body	54 / 94.7	3 / 5.3	**.001**
	Impaired ability to put clothes on the upper body	54 / 94.7	3 / 5.3	**.001**
	Impaired ability to take off each item of clothing	53 / 93.0	4 / 7.0	**.001**
	Impaired ability to choose clothes	46 / 80.7	11 / 19.3	**.011**
	Impaired ability to fasten clothes	52 / 91.2	5 / 8.8	**.002**
	Impaired ability to maintain appearance	52 / 91.2	5 / 8.8	**.002**
	Impaired ability to put items of clothing together	53 / 93.0	4 / 7.0	**.001**
	Impaired ability to put on each item of clothing	53 / 93.0	4 / 7.0	**.001**
	Impaired ability to pick up items of clothing	52 / 91.2	5 / 8.8	**.002**
	Impaired ability to use assistive devices	39 / 68.4	18 / 31.6	**.039**
	Impaired ability to use zippers	53 / 93.0	4 / 7.0	**.001**
Related factors/risks	Anxiety	2 / 3.5	55 / 96.5	1.000
	Discomfort	54 / 94.7	3 / 5.3	**.001**
	Pain	46 / 80.7	11 / 19.3	**.011**
	Fatigue	33 / 57.9	24 / 42.1	.085
	Weakness	2 / 3.5	55 / 96.5	1.000
	Decreased motivation	2 / 3.5	55 / 96.5	1.000
Associated conditions	Altered cognitive function	17 / 29.8	40 / 70.2	.551
	Musculoskeletal impairment	8 / 14.0	49 / 86.0	1.000
	Neuromuscular impairment	6 / 10.5	51 / 89.5	1.000
	Perceptual disorders	1 / 1.8	56 / 98.2	1.000

* Fisher's exact test.
Source: authors (2020).

Table 3. Association between the nursing diagnosis Dysfunctional response to ventilatory weaning and its clinical indicators. Recife-PE, 2024

	Clinical Indicators	Present No. / %	Absent No. / %	p-value
Defining characteristics	Mild increase in respiratory rate above baseline values	3 / 9.1	30 / 90.9	.245*
	Respiratory discomfort	24 / 72.7	9 / 27.3	**.000****
	Fatigue	21 / 63.6	12 / 36.4	**.000****
	Restlessness	5 / 15.2	28 / 84.8	.058*
	Perception of increased need for oxygen	2 / 6.1	31 / 93.9	.497*
	Increased heart rate over baseline (<20bpm)	4 / 12.1	29 / 87.9	.120*
	Moderate increase in respiratory rate above baseline values	2 / 6.1	31 / 93.9	.497*
	Impaired ability to cooperate	27 / 81.8	6 / 18.2	**.000****
	Impaired ability to respond to directions	27 / 81.8	6 / 18.2	**.000****
	Abnormal skin color	4 / 12.1	29 / 87.9	.120*
	Minimal use of respiratory accessory muscles	1 / 3.0	32 / 97.0	1.000*
	Agitation	3 / 9.1	30 / 90.9	.245*
	Increased heart rate in relation to baseline parameters (>20bpm)	5 / 15.2	28 / 84.8	.058*
	Increased blood pressure in relation to baseline parameters	1 / 3.0	32 / 97.0	1.000*
	Abnormal skin color	1 / 3.0	32 / 97.0	1.000*
	Deterioration in arterial blood gas compared to baseline values	5 / 15.2	28 / 84.8	.058*
	Deep diaphoresis	1 / 3.0	32 / 97.0	1.000*
	Decreased level of consciousness	24 / 72.7	9 / 27.3	**.000****
	Shallow breathing	7 / 21.2	26 / 78.8	**.013***
	Adventitious breathing noises	17 / 51.5	16 / 48.5	**.000****
Related factors/risk	Altered sleep pattern	2 / 6.1	31 / 93.9	.497*
	Ineffective airway clearance	24 / 72.7	9 / 27.3	**.000****
	Pain	17 / 51.2	16 / 48.5	**.000****
	Inadequate nutrition	5 / 15.2	28 / 84.8	.058*
	Anxiety	1 / 3.0	32 / 97.0	1.000*
	Decreased motivation	1 / 3.0	32 / 97.0	1.000*

*Fisher's exact test; **Pearson's chi-square test.
Source: authors (2020).

DISCUSSION

It is known that individuals affected by the severe form of COVID-19 generally need intensive care in accordance with their specific needs, and nurses are one of those responsible for providing this care. In this context, the importance of implementing and operationalizing the nursing process in critically ill patients with COVID-19 is emphasized. This process allows for the establishment of the needs and problems of individuals through clinical judgment, thereby enabling the identification of nursing diagnoses (NDs) for the planning of nursing care in a systematic and humanized way.

It was found that the NDs Risk of Infection, Impaired Spontaneous Ventilation, Risk of Shock, Risk of Unstable Blood Sugar, Risk of Pressure Injury, Risk of Corneal Injury, Deficit in Self-Care for Feeding, Deficit in Self-Care for Bathing, Deficit in Self-Care for Intimate Hygiene and Interrupted Family Processes were present in all the patients who took part in the study.

Most individuals infected with the severe form of COVID-19 show signs of deterioration of the respiratory system, which can evolve into acute respiratory distress syndrome (ARDS) and is considered the main cause of respiratory failure in patients. In this sense, it is possible to identify dyspnea and hypoxia in these patients, as well as significant pulmonary impairment observed on imaging tests, which may justify the high prevalence of the nursing diagnoses "Impaired spontaneous ventilation" and "Impaired gas exchange" in the study.[6,8,9]

The ND "Dysfunctional response to ventilator weaning" was also found in more than 50% of the population studied. This ND is defined by NANDA-I as the inability to adjust to decreased levels of mechanical ventilatory support which interrupts and prolongs the weaning process. In this regard, the destructive effects of the inflammatory process on the lung parenchyma result in significant lung damage and respiratory muscle weakness. Consequently, many patients experience difficulty withstanding the reduction in mechanical ventilation parameters typically employed in individuals with respiratory challenges.[6, 10-11]

Furthermore, the ventilatory weaning process must be individualized and consider the patient's ability to achieve respiratory balance. This can be interfered with by a series of clinical factors, such as high hypoxemia, which causes respiratory discomfort, and psychological factors, such as the presence of delirium and agitation due to the use of opioids and antipsychotics. These can lead to a decrease in the level of consciousness of the individual, which in turn interferes with the respiratory rehabilitation process.[12]

With regard to the ND "ineffective airway clearance" and its association with infection, a study was carried out with patients affected by the severe form of SARS CoV-2 infection. The results of this study demonstrated that a significant proportion of patients who required invasive mechanical ventilation developed a considerable burden of secretion production in the airways. Additionally, the elimination of these secretions was impaired by the levels of sedation and neuromuscular blockade that were necessary to maintain the therapeutic strategies employed. This resulted in the impairment of the patients' cough reflexes, which led to the accumulation of secretions in the respiratory tract. [13]

In relation to the ND Risk of aspiration and its associations, authors report that patients severely affected by COVID-19, in addition to having some difficulty eliminating secretions, often also have problems with swallowing, requiring the use of enteral feeding tubes to maintain adequate nutritional support, but the presence of the device can increase the risk of developing gastroesophageal reflux, which negatively affects the function of the laryngeal sphincter, increasing the risk of aspiration.[14]

The ND deficit in self-care for dressing and its significant associations with the high prevalence of diagnoses such as deficit in self-care for eating, deficit in self-care for bathing, and deficit in self-care for intimate hygiene may be related to the fact that individuals with the severe form of SARS-CoV-2 infection may develop impairment of their functional capacity due to the systemic inflammation of SARS CoV-2 in the immune system, leading to an incorrect distribution of oxygen in muscle tissue. In addition to the severity of the clinical condition, prolonged periods of immobilization can result in significant muscle atrophy and subsequent muscle weakness, which can impair mobility and increase the risk of pressure injuries. This may explain the high prevalence of such NDs observed in the study, and it also supports the hypothesis that at least one problem or dependence in performing an activity of daily living is likely to develop in many individuals, necessitating future rehabilitation services.[15-16]

Furthermore, the intensified inflammatory response associated with disease progression can result in the release of inflammatory substances caused by ischemic and pulmonary impairment due to the virus. This can lead to an increase in vascular inflammation, which in turn activates factors that significantly alter

microvascular flow and, consequently, tissue perfusion. This may provide a potential explanation for the inference of ND as "ineffective peripheral tissue perfusion" in these individuals. Such microvascular alterations are frequently associated with hypertension and diabetes. The latter is attributable to the fact that insulin resistance and impaired glucose metabolism can significantly elevate the risk of developing vascular events.[17, 18]

Additionally, due to the abrupt alteration in their health status and the obligatory isolation resulting from their clinical condition, patients may exhibit impairment in their interpersonal relationships and in the process of fulfilling their role. The presence of the nursing diagnosis "Interrupted Family Processes," which is present in the "Family Relationships" class and constitutes the "Roles and Relationships" domain of NANDA-I, can be verified.[6,9]

Also consistent with the findings of prior research is the evidence from studies conducted with patients suffering from the severe form of the disease. These studies have demonstrated a high prevalence of ND risk due to the presence of invasive devices such as the orotracheal tube or due to the wear and tear on the individual's immune system. Additionally, there is an elevated risk of corneal damage, which is associated with altered eyelid movement resulting from the reduced level of consciousness observed in many critically ill patients. Furthermore, there is an increased risk of shock and an elevated risk of unstable blood glucose levels due to systemic issues such as multiple organ dysfunction caused by the progression of the disease. [19-21]

It is an established medical fact that patients with critical illness caused by the SARS-CoV-2 virus may present with a range of multisystemic complications as a result of the disease's progression. In light of the associations identified in the study, it is up to nurses to be vigilant in monitoring the clinical signs exhibited by the public in question, employing critical thinking based on scientific evidence to improve the planning of nursing actions.

It is important to note that the absence of data in the medical records analyzed due to a lack of completion by health professionals led to difficulties in gathering diagnostic clues and consequently in identifying clinical indicators, which in turn compromised diagnostic inference in some of the patients studied. This represents a limitation of the study.

It is hoped that the results of this research can help nurses in their practice, especially in their decision-making process when providing care to patients. Finally, this research provides essential information for future nursing professionals on the importance of practicing based on scientific evidence.

CONCLUSION

The present study sought to verify the association between the NANDA International nursing diagnoses and their clinical indicators in critically ill patients during the pandemic caused by the novel coronavirus SARS-CoV-2. With regard to the NDs, the following were present in all patients: Risk of Infection, Impaired Spontaneous Ventilation, Risk of Shock, Risk of Unstable Blood Glucose, Risk of Pressure Injury, Risk of Corneal Injury, Deficit in Self-Care for Feeding, Deficit in Self-Care for Bathing, Deficit in Self-Care for Intimate Hygiene, and Disrupted Family Processes.

In terms of associations, the ND "ineffective airway clearance" was found to be associated with the clinical indicator "infection." Additionally, the ND "deficit in self-care for dressing" was identified as significantly associated with all of its defining characteristics and two of its related factors. "Discomfort" and "Pain." With regard to the ND "Risk of aspiration," statistically significant associations were observed between this nursing diagnosis and the following clinical indicators: ineffective coughing, enteral feeding, impaired ability to swallow, decreased level of consciousness, and the presence of a nasal/oral tube. The clinical indicators of altered skin characteristics, edema, diabetes mellitus, and hypertension were found to be significantly associated with the presence of the ND "Ineffective peripheral tissue perfusion."

The ND "Dysfunctional response to ventilator weaning" was found to be significantly associated with nine of its clinical indicators. They include respiratory discomfort, fatigue, impaired ability to cooperate, impaired ability to respond to instructions, decreased level of consciousness, shallow breathing, adventitious breathing noises, ineffective airway clearance, and pain.

It is thus hoped that the results of this study will provide support for the implementation of systematic, qualified, evidence-based nursing care that is tailored to the specific needs of these patients.

CONTRIBUITIONS

Contributed to the conception or design of the study/research: Brito MGJPB, Araujo SS, Frazão CMFQ, França MEF, Silva CG. Contributed to data collection: Brito MGJPB, Frazão CMFQ, França MEF,

Silva CG. Contributed to the analysis and/or interpretation of data: Brito MGJPB, Frazão CMFQ, França MEF, Silva CG, Araujo SS, Mendes AWV, Ribeiro DR. Contributed to article writing or critical review: Brito MGJPB, Frazão CMFQ, França MEF, Silva CG, Araujo SS, Mendes AWV, Ribeiro DR. Final approval of the version to be published: Brito MGJPB, Frazão CMFQ, França MEF, Silva CG, Araujo SS, Mendes AWV, Ribeiro DR.

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