

Sepsis and septic shock: understanding nurses in a large school hospital

Sepse e choque séptico: compreensão de enfermeiros de um hospital escola de grande porte

Sepsis y choque séptico: entender a las enfermeras en un gran hospital escolar

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RESUMO

Objetivo: Identificar a compreensão dos enfermeiros de um hospital escola de grande porte de uma capital brasileira a respeito da seps e choque séptico. **Método:** Trata-se de um estudo descritivo com abordagem qualitativa, desenvolvido em um hospital escola, público e de grande porte de uma capital brasileira. A coleta de dados ocorreu no período de julho a agosto de 2017 por meio de entrevistas com 47 enfermeiros com roteiro semiestruturado, abrangendo questões sobre definição, classificação de seps, manifestação clínica, tratamento e recomendações e análise de conteúdo de Bardin. **Resultados:** Analisando as três grandes categorias de conteúdo, compreensão dos enfermeiros sobre a definição de seps, compreensão sobre os sinais e sintomas e compreensão sobre o diagnóstico, na pesquisa em questão foi possível identificar que os enfermeiros possuem uma compreensão razoável quanto a seps. **Considerações Finais:** Ficou evidenciado que os participantes tiveram uma visão geral adequada, porém rasa. Aponta-se algumas fragilidades relacionadas a formação acadêmica e o papel das instituições nessa questão.

Descritores: Seps; Choque séptico; Conhecimento; Enfermagem.

ABSTRACT

Objective: To identify the understanding of nurses in a large hospital in a Brazilian capital regarding seps and septic shock. **Method:** This is a descriptive study with a qualitative approach, developed in a hospital, public and large school in a Brazilian capital. Data collection took place from July to August 2017 through interviews with 47 nurses with a semi-structured script, covering questions about definitions, classification of seps, clinical manifestation, treatment and analysis and content analysis of Bardin. **Results:** Analyzing how three major categories of content, nurses' understanding of the definition of seps, understanding of the signs and symptoms and understanding of diagnosis, in the research in question it was possible to identify what nurses used a reasonable amount regarding seps. **Final Considerations:** It was evidenced that the participants had an adequate, but shallow, overview. There are some weaknesses related to academic training and the role of institutions in this matter.

Descriptors: Seps; Septic shock; Knowledge; Nursing.

RESUMEN

Objetivo: identificar la comprensión de las enfermeras en un hospital grande en una capital brasileña con respecto a la seps y el shock séptico. **Método:** Este es un estudio descriptivo con un enfoque cualitativo, desarrollado en un hospital, una escuela pública y grande en una capital brasileña. La recolección de datos tuvo lugar de julio a agosto de 2017 a través de entrevistas con 47 enfermeras con un guión semiestructurado, que abarca preguntas sobre definiciones, clasificación de seps, manifestación clínica, tratamiento y análisis y análisis de contenido de Bardin. **Resultados:** Analizando cómo tres categorías principales de contenido, la comprensión de las enfermeras de la definición de seps, la comprensión de los signos y síntomas y la comprensión del diagnóstico, en la investigación en cuestión fue posible identificar qué enfermeras usaron una cantidad razonable con respecto a la seps. **Consideraciones finales:** se evidenció que los participantes tenían una visión general adecuada, pero superficial. Existen algunas debilidades relacionadas con la formación académica y el papel de las instituciones en este asunto.

Descriptores: Seps; Shock séptico; Conocimiento; Enfermería

ORIGINAL

Introduction

Sepsis is an important cause of death worldwide, currently affecting low and middle income countries in particular, and although mortality rates are decreasing in high-income countries, the overall burden is still high with rates mortality from 30 to 70%. In 2017, it was estimated that 48.9 million cases of sepsis occurred worldwide and, of that total, 11.0 million deaths, representing 19.7% of all deaths globally. Despite all the global impact of sepsis, in general, progress is noted because, in the comparison between the years 1990 to 2017, sepsis poverty dropped 37.0% and mortality decreased to 52.8%.¹

Part of this advance is related to the understanding of sepsis, which has changed not only its own definition, but also the window of action and intervention procedures to stop the progression of the condition and prevent death. The first concepts of sepsis were summarized by the Systemic Inflammatory Response Syndrome (SIRS) to infection, but with several discussions until the last update of sepsis 3 in 2016, there was an important change in this understanding, marked by the presence of life-threatening organ dysfunction secondary to the host's unregulated response to the infectious condition.²⁻³

Today, sepsis is defined by the presence of one of the SIRS criteria (temperature > 38°C or < 36°C, heart rate > 90 / minute, respiratory rate > 20 / minutes (or PaCO₂ < 32 mmHg) and leukogram with > 12,000) plus a organ dysfunction criterion (hypoxemia, decreased level of consciousness, hypotension, decreased urine output, metabolic acidosis, coagulopathy, among others). Septic shock occurs with the worsening of sepsis, characterized by marked circulatory, cellular and metabolic abnormalities associated with a higher risk of death than sepsis alone, in which vasoactive drugs are required to maintain pressure values minimally acceptable and compatible with life.³⁻⁴

Given the knowledge about sepsis, the 2018 Surviving Sepsis Campaign initiative advocated the management of septic patients involving early diagnosis and rapid interventions with the aim of reducing sepsis mortality. Thus, after detection, in one hour, determination of serum lactate, culture collection, administration of antibiotics, volume resuscitation and administration of vasopressors when indicated became therapeutic goals.⁴

Even with all the evolution of understanding about sepsis, apparently this knowledge is not really being applied in clinical practice. The nursing team has a fundamental role in the early diagnosis of sepsis and septic shock because they spend more time with the patient due to the assistance provide. For this reason, it is essential to understand the definitions, the criteria for early recognition and the implementation of interventions to reduce the chances of death.⁵ In particular, nurses, who exercise their critical thinking and clinical judgment in direct assistance to the patient or in the coordination and supervision of this care, must have knowledge and control over the clinical manifestations of sepsis and septic shock.⁶

Due to the role of nurses in the diagnosis of sepsis and, above all, the relevance of nursing participation in early detection, this research aims to identify the understanding of nurses in a large teaching hospital in a Brazilian capital regarding sepsis and shock septic.

Method

This is a descriptive study with a qualitative approach, developed in a large, public teaching hospital in a Brazilian capital. Data collection took place from July to August 2017 through interviews recorded in audios with a semi-structured script in a reserved room of the health service itself, on days and times chosen by the participating nurses. The listed units had 63 active nurses. Initially two of these were excluded from the study, for reasons of leave and another 14 nurses refused to participate in the research, totaling 47 participating nurses, obtained by a convenience type sample.

The script investigated specific questions about the knowledge acquired and experience in caring for a patient with sepsis (questions directed at definition, classification of sepsis, clinical manifestations, treatments and recommendations). After data collection, the interviews were transcribed and analyzed according to the content analysis proposed by Bardin.⁷In addition, the anonymity of the participants was ensured, which were encoded by the initial letter E, referring to the word "NURSE", followed by a numeric number to differentiate them from each other, which referred to the number of the interview answered by the professional.

This study is linked to a larger research project entitled Identifying sepsis: knowledge of nurses in a teaching hospital. This was approved by the Ethics Committee of Hospital das Clínicas in July 2017 (Opinion number 2,098,989). In respect to CNS Resolution no. Resolution No. 466/2012 and the ethical principles of the Declaration of Helsinki, a Free and Informed Consent Form (ICF) was delivered, signed in two copies, one for the researcher and another for the research subject.

Results

After content analysis, two categories were listed for presenting the results: Nurses' understanding of the definition of sepsis and Nurses' understanding of the signs and symptoms of sepsis.

Nurses' understanding of the definition of sepsis

Regarding the definition of sepsis, the following subcategories were related: Systemic infection / Generalized infection, organ dysfunction, septic shock and severe infection.

Systemic infection / Generalized infection

Regarding sepsis to be considered a generalized or systemic infection, 12 nurses reported that it contained only this definition and that it was a non-specific complication:

*It is a generalized infection with severe manifestations throughout the body (E1)
Systemic infection (E3)*

Generalized infection, complication (E5)
Generalized infection, complication (E7)
Generalized infection, complication (E9)
Sepsis is a generalized infection of a patient (E14)
It is a generalized infection (E24)
Generalized infection (E32)
Generalized infection (E35)
Generalized infection (E37)
It is the so-called generalized infection which causes severe manifestations throughout the body (E43)
Infecção sistêmica (E45)

Another six nurses have already recognized it as a secondary infection from a primary outbreak or a response to an infectious process:

It is a generalized infection that occurs in patients with severe infections (E2)
Sepsis is when an infection that was limited to a certain organ or system, goes into the bloodstream and can affect other systems causing serious damage to the individual (E47)
Widespread, severe infection that causes systemic inflammation in response to an infectious process (E22)
Generalized infection in the body due to a primary infectious focus (E39)
Generalized infection, systematic inflammation and infectious complication (E40)
It is a generalized infectious state: Sepsis is a life-threatening condition that arises with the body's response to an infection (E44)

Another six nurses already recognize it as a generalized infection resulting from contamination of the bloodstream by a microorganism:

Set of signs and symptoms resulting from an infectious process with systemic dissemination (E6)
It is an infection in the blood that worsens the whole body (E18)
It is the dissemination of some microorganism through the bloodstream with severe systematic changes (hemodynamic / respiratory decompensation) (E41)
It is a clinical condition where there is a generalized infection; Septicemia when the infection is in the bloodstream (E27)
Sepsis is the infection that reaches the bloodstream (E28)
It is a generalized infection in the organism, involving several organs or systems, through the bloodstream that is responsible for the transport of microorganisms (E36)

Organ dysfunction

Five nurses recognize it as an organic dysfunction of an uncertain character caused by a primary infectious process that can lead to death:

It is an organic dysfunction caused by an uncontrolled systemic inflammatory response caused by an infectious process (E10)
Clinical manifestations caused by infection that generate life-threatening organ dysfunction (E12)

Sepsis can be characterized by an "organic dysfunction" caused by an unregulated response of the organism to infection that originates from a focus, for example: pneumonia, urinary tract infection, abdominal among others. (E20)
Set of organic disorders that, if left untreated, lead the patient to death (E29)
Dysfunction secondary to an infectious focus (E31)

Septic Shock / Severe infection

One nurse recognized it as a septic shock and the other as a serious infection of the organism.

It is a state of generalized infection that causes changes in capillary permeability in the entire organism and may develop into a fluid imbalance culminating in septic shock (E26)
It is a serious infection characterized by an intense inflammatory state throughout the body (E15)

Nurses' knowledge about the diagnosis of sepsis

Regarding the diagnosis of sepsis, ten nurses recognized it as Infection, Infectious process and SIRS:

It is a clinical diagnosis / disease related to a set of clinical manifestations that occur due to an infection that causes a systemic inflammatory response and severe hemodynamic changes (E17)
It is when the patient has a high rate of infection that the infectious microorganism multiplies inordinately and the immune response is much lower and may lead to death (E38)
Set of serious clinical manifestations produced by an infection (E42)

The nurse's perception of identifying the diagnosis of sepsis is through an infectious process and an inflammatory response that already exists in the patient:

Generalized infectious process (E4)
Serious actions that occur in an individual's body from an infectious process (E46)
It is an inflammatory response of the organism in the face of an infection (E8)
It is an inflammatory response of the immune system triggered by infectious agents in the bloodstream (E19)
Exacerbated inflammatory response of the body to an infection (E19)
Severe inflammatory response to an infection (E13)
It is the presence of at least 2 signs and symptoms of a SIRS when associated with an infection (E21)

Discussion

When asked about the definition of sepsis, it was noticed that the nurses interviewed have a general view, adequate and seem to understand sepsis as a systemic or generalized infection, in the presence of organ dysfunction³ as can be seen in the reports.

On the other hand, the interviewees did not know how to express clearly about the new classification of sepsis in sepsis and septic shock, demonstrating that they do not understand their difference. In the subcategory related to septic

shock, only one respondent (E26) understood septic shock as a subset of patients with sepsis, but who have marked circulatory and metabolic abnormalities and are associated with a higher risk of death.³ Another study carried out in a large public hospital in São Paulo, reaffirms these findings because the 41 nurses interviewed demonstrated difficulties in identifying the patient in septic shock.⁸⁻⁹ Which points to the need for training, updating and deepening on the topic.

The participants in this study cited in the category understanding about signs and symptoms, that sepsis is a process that begins with an infectious focus, but that causes circulatory and metabolic changes. However, in the category understanding about the diagnosis, the statements referred to the identification of sepsis through: infectious conditions, infectious processes / inflammatory responses and the occurrence of SIRS, leaving no evidence and giving due importance to organ dysfunction. Other studies carried out described in their findings that nurses' understanding of sepsis, its definition and signs and symptoms, started from academic training: more than half of the students assessed the teachings that the course offered them as insufficient.¹⁰⁻¹²

It is important that nurses develop skills and abilities for the early identification of sepsis, as the rapid identification of signs and symptoms, especially of organ dysfunction, is directly linked to an appropriate treatment, contributing to a positive prognosis for the patient. And yet, a fact that characterizes the nurse's understanding as a predictor of the patient's survival.^{4,6}

In addition, the literature highlights a higher risk of death from sepsis among patients with late diagnosis.⁴ The performance of managed and organized protocols can reduce the mortality rate.⁶ It is important that the nursing team has training and quality monitoring of the care provided in order to recognize early for immediate interventions.¹³

Thus, it is clarified that the role of institutions in combating sepsis goes far beyond just assisting patients who are already sick. They should promote continuing education / training to ensure that professionals are performing the best care possible, based on evidence and the most current knowledge. Thus, they must provide an organizational culture that allows integration between the sectors of pharmacy, laboratory, infection control committee related to health care in order to foster the top professional, with test results and antibiotic therapy and all the necessary support to recognize and intervene within a timely therapeutic window.¹³⁻¹⁶

Thus, it becomes even more evident how nurses and their understanding of sepsis are extremely valuable, for direct assistance to the patient, configuring themselves as fundamental parts in the whole care gear because critical thinking and clinical judgment guide nursing care, integrating all the components of this care.

This research was limited by the fact that perhaps the understanding of these nurses cannot represent that of everyone else. However, it does not imply that the study identified the reality of a public health institution and therefore stimulated improvements in continuing education programs and institutional protocols in the management of sepsis.

Conclusion

Considering that the study sought to identify nurses' understanding of sepsis, it was evident that the participants had an adequate, but shallow, overview. It also pointed out some weaknesses related to academic training and the role of institutions in this matter. The study made it clear that nurses need better professional training, but that this can come from an institutional initiative as part of the implementation of managed protocols, change of organizational culture and care paradigm in which the clinical understanding of sepsis is a crucial part in the operation of the gears of the entire assistance system.

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